

Understanding Your User

Andrea F. Kravetz
VP UCD, Elsevier
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Agenda

- User Centered Design Process Defined
- Three methods for understanding users
 - Field Studies & Ethnographic Research
 - Task Flows
 - Personas

UCD Process - the basics



- An approach to designing usefulness and ease of use into the total customer experience with products and systems.
- A design philosophy in which the emphasis is on the user
- UCD process has three major phases of the work – understanding, design and evaluation – with iterations that cycle between each phase.
- Emphasis on user understanding is critical to deliver final product that is:
 - High-value product
 - “Get it right the first time”
 - Innovative
- Quicker product development
 - Faster time to the “right” product
 - Proper prioritization of product features based on user needs
 - Fewer late-design changes

Understanding

- Begin by conducting **field studies/ethnographic research** in order to know the user, their tasks and their goals
 - What informational resources do they currently use?
 - What are their organizations procedures?
 - What other tools and people do they work with?
 - What are their key job tasks and how do they accomplish them?
 - What problems do they encounter daily?
 - What trends are affecting their work or needs?
- Create **work flow and task modeling** charts
- Build a shared understanding of the user with **personas**

“What people say,
what people do,
and what they say they do
are entirely different things.”

-- Margaret Meade
Anthropologist

Field Studies & Ethnographic Research

AFTAS ORALES

1. Sanodin gel +/- Colircusi anestésico doble (no tragar)
-3 veces al día 20 minutos antes de cada comida.
2. Cocimiento de llantén +/- anestésico
-2/3 veces al día

How Observation Leads to New Product Design

Observing Neuroscientists

- “The Paxinos and Watson atlas is great but...”
 - Idealized brain - not representative of what is actually in front of them
 - Not the same animal as in labs
 - Very 2 dimensional and hard to translate to real world
 - A lot of “Educated Guesses” when working with coordinates from paper atlases
 - No easy way of showing the brain to students.

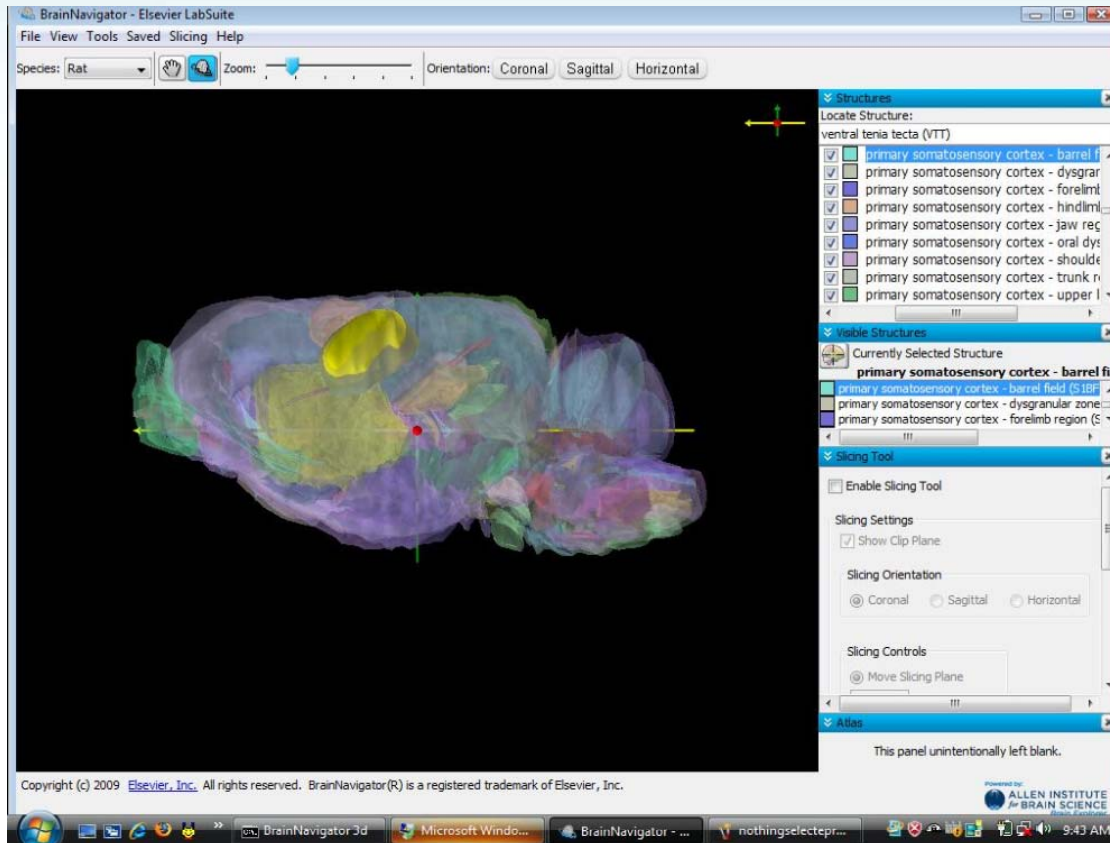
For Example...They Make Their Own Representations



Filling the Need...

- Enhancing the 2D
 - Make it easy to locate specific structures
 - Make it easy to find specific coordinates
 - Give users a way to view coordinates as though those coordinates are coming from within their own rat
- Giving Users 3D Models
 - Show them how their brain structures look when not shown as 2D Images
 - Give them away to see how parts of the brain relate spatially
 - Show them how the atlas section relates to a 3D brain
 - Give them ability to simulate slicing “their own way”

3D Brain



Task Flows

How UCD Understands: User Workflows

Roles

1. Core Research (40%)

2. Contributive Research (10-20%)

3. Education (10-20%)

4. Administration (10%)

5. Personal

Tasks

Grant Proposals

Experiments

Write & Publish

Supervise team

Staying up to date

Editorial work

Reviewing

Organizing conferences

Attending Conferences

Teaching

Supervising

Evaluation

Research Assessment

Career

Activities

- find agency, search literature, read, build alliances, discuss, prepare proposals
- plan, search info, set up experiment, run exp., analyze, validate findings, store data
- check new literature, write, edit, review, submit, format references, collaborate
- read, edit, give feedback, collaborate, communicate, administrate, share literature
- set up alerts, search literature across relevant sources, read articles, discuss
- find reviewers, manage papers, organize review process, read, PR
- read, review, edit, check references, search for related papers
- collaborate, find speakers, announce, organize practical matters
- find conferences, prepare presentation, plan trip, collaborate, read
- design course, make presentations, search materials/guest speakers, lecture, exams
- tutor and mentor, communicate, find good starting papers, track progress
- hiring/promotion/review, bibliometric analysis, find all about a person/group
- evaluate performance, write report, bibliometric analysis, organize info, administration
- collaboration network, search jobs, track own papers

Understanding Task Flow for Scientific Information

Scopus Document Download Manager - Powered by QUOSA

Select PDF file naming: (Article Title)_(Publication Year)_(Journal Title).pdf Create My Own Remove Item

Download to: Browse...

Download Abstract if Full Text is Not Available

Begin Download

Title	Format	Availability	Download Status
Creativity vs. the law			

Holding creativity together: A sociological theory of the design professions



Visits to academic researchers revealed

- PDFs and CDs filled with PDFs everywhere.
- Couldn't remember where they put PDFs, It's a hassle downloading them one at a time, PDF default files names they told us, were useless – they couldn't remember what they titled them in the PDF.
- Led to PDF Downloader in Scopus / ScienceDirect – enable users to create default naming convention and more easily organize their work.

What is a persona?

Personas

- Archetype of our users: describes the user their primary tasks, information needs and pain points. May also include artifacts and the typical work day.
 - Based on **user research!**
 - Created to direct our user requirements and design
 - Guide the project team by thinking about an ‘external user’ – not themselves as the users

Example Persona

Isabel – Information Specialist



Personal Profile

Isabel has worked for the company for the past 5 years. During that time, her knowledge and experience have grown dramatically in addition to her roles and responsibilities.

While working full-time, Isabel has recently completed her Masters degree in Library Science. She participates in an area professional society as time allows.



Hired initially as a librarian, her insight has become quite valued by corporate researchers, scientists and the technology director - to such a degree that she acts as a consultant to a number of them. However, she still provides support to much of the corporation and also is integral to the development of a corporate website that is intended to provide a front end to their internal sources. She now has two junior associates on her staff to help her.

Isabel is not responsible for development of a product but interacts with researchers, scientists and staff who do have responsibility and require information to stay on top of a host of issues and technology trends. She frequently performs searches for researchers and emails the results to the researcher. While not an expert in any one field, she is interested and a quick learner in issues of particular interest to the researchers that she works with.

In addition to sifting through results that she believes will be useful (she doesn't send the first set of results but tries numerous keyword combinations and refined results until she's sure she has a set of results the researcher will

Scenario	Tasks
The technology director asks Jamie to find everything she can about a technology	<ul style="list-style-type: none"> • She first tries to understand the terminology used with the technology so that she can get an understanding of how to search for source information. • She tries various keyword combinations and refines her searches to try to locate results she is confident will be useful. She emails the set of results to her director. • Jamie identifies a cluster of researchers and their affiliations that the director might contact to follow up with questions. • Finally, she searches companies that seem to be developing the technology to get some background on the companies, where the technology is being developed and who to contact to get more information.
Working virtually as a member of a research team, she needs to identify a potential partner to work with on a product	<ul style="list-style-type: none"> • She researches the competitive landscape to try to identify who her company might work with • She researches potential companies to find more about their product set, their financial viability and anything else she can determine to see if it's someone they might want to work with
A product team with which she works closely is trying to compare three different technologies that they might employ for a new product	<ul style="list-style-type: none"> • She tries to compare the technologies. Which ones seem to be growing (in terms of publications about the technology, relevant patents) and any other measure she thinks is relevant • She tries to determine which companies are getting involved in the patents. Are their direct competitors showing a likelihood to the adoption of one of the technologies



Dr. Andreas Kappelhoff | resident/junior level physician

My day starts very early. I need to be to the hospital and ready by 7am to review the activity of the night before. Its important to make sure everyone was stable overnight and to check if anyone new was admitted to the ward. From this point I continue with my regular routine of the day.

One of the most exciting and stressful parts to my day is during grand rounds. It's an opportunity for me to demonstrate my knowledge and impressive the chief, but it is also important for me to be confident that I have made good clinical decisions. Sometimes I see a lot of cases that I read about in medical school but I do not have all the information in my head yet. Often it's the case that I don't have time to look for the information when I am with a patient, so I must remember to look for it later.

There are some areas that I often must consult my colleagues or internet sources for. Though I am pursuing a specialization in gastroenterology, I often work on the oncology wards. Technology and treatments change quickly in oncology, so I must often seek confirmation, or advice, on the best treatment for some of my patients.

At the end of a day, I must write their discharge letters for patients ready to leave, explaining their treatment and medication plan for when they are home. After this I can prepare my calendar for the next day, as well as any planned patient procedures. On a good day, I will be out of the hospital by 19:00 and then I can have dinner (or lunch as the case may be) and then get some rest before I wake up at 5am to do it all over again.

"I can spend a maximum of 5 minutes looking up answers when I am working – I don't have more time."

Age: 33

Years experience: 6

Specialty: pursuing Gastroenterology

Hours worked per day: 10+

Favorite information resource:

Colleagues, Up to Date, then PubMed

Needs

- Concise, reliable information
- Current information quickly
- Need for eDS is high

"I need to make good clinical decisions and impress my boss."

Opportunities & Frustrations

- Not knowing all the information now
- Not finding the answer fast enough

End Goals

- Look good in front of my boss

SOFÍA :: Junior Clinician, medium size hospital

Needs

- trusted information
- information more easily accessible
- reputable Spanish language resources

Opportunities & Frustrations

- Will create her own pocket book of useful info

Work-around/ End Goals

- Wants to move in to private practice
- Will often use Google to translate a Spanish query into English so she can search English medical websites and will translate her findings back to Spanish



"I prefer Spanish because it's easier for me, but Spanish journals don't have the same impact."

Background

Age: 33

Years Exp: 4 (with residency)

Hrs per day worked: 8

Most used resource: Fiesterra

8am

Typically begins work

- looks at emails/messages
- Goes to ER/ward check status
- Checks patient status of night before with night nurse or on call doctor

8:30am

- Attending and residents meet to discuss status
- 2 days a week might have to attend special meeting to discuss new medical research from the Lancet, NEJM or other reputable journals for about half hour

9am

- See new patients
- Continue treatment of current patients

12pm

- Every other week will discuss new research with other doctors

12:30pm

- Meet to discuss patient treatment

1pm

- Try to start paper work

2pm

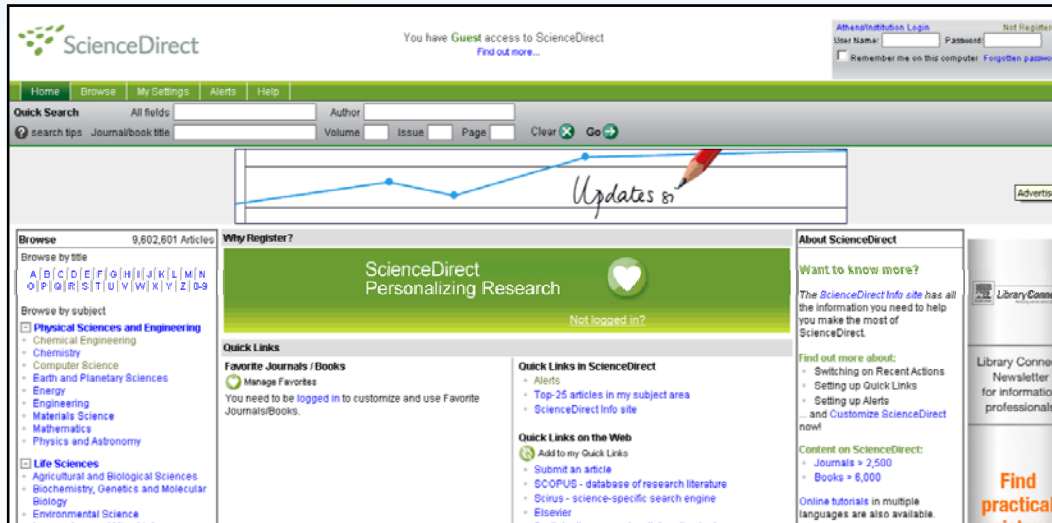
- Day is done. Time to go home.

Beyond

- Clinicians that also do research will often begin that work after clinicals and work until exhaustion.

How User Feedback Affects Design

How User Feedback Affects Design



- ScienceDirect is one of our biggest and oldest products and is used by people and institutions all over the world
- Through user testing we found out that our users frequently go right to a article PDF and download it, bypassing the HTML article
- Adding this additional information and media content to the articles was a way to make the HTML more useful and functional for our users

Additional Article Information: Initial Concept

- Concept Born-Additional Article Information
 - Several designs that were presented to users
- Concept Results-Additional Article Information
 - Users preferred the layout Design A
 - Users also liked the embedded player idea in Design B (but not the layout)
 - Design A was used for the initial release
- Because the embedded media was so popular with the users in the concept test, it was decided to add embedded media to the additional article information for a second release

User Feedback Is Ongoing...

The collage features several key elements: a screenshot of the MD CONSULT website showing navigation menus and search filters; two smartphones displaying the Q&A Bot app interface with search results and topic buttons; a man in a blue patterned shirt talking on a phone while working at a computer; and a man in a plaid shirt wearing a headset, also on a phone. The text "42 users" is written in large blue font across the smartphone images, and "177 Users" is written in red font at the bottom right.

First Consult is an authoritative evidence-based and continuously updated clinical information resource for healthcare professionals. Significant differences in cell proliferation were...analyses in medium of neural stem cell culture. In accordance...

7. ⁴⁰ **Folate Deficiency Induces Neural Stem Cell Apoptosis by Increasing Homocysteine In Vitro**
Journal of Clinical Biochemistry and Nutrition, 45 (1), p. 14-19, Jul 2009
Xu-Mei Zhang, Guo-Wei Huang, Zhi-Hong Tian, Da-Lin Ren, John X. Wilson

TAKE A TOUR

10 Easy Ways to Learn About Your Users

1. **Talk to a user**
2. **Follow a librarian (or a doctor or a nurse...)**
<http://www.getdegrees.com/articles/career-resources/the-top-fifty-librarian-blogs>
3. **YouTube channel** (www.youtube.com/cellpressvideo)
(www.youtube.com/user/JournalNumberTheory)
4. **For Mac** http://www.apple.com/downloads/macosx/math_science.
5. **Set up a Twitter RSS feed about– join a TWIBE**
6. **Publications on researcher’s information behaviours**
[Variations in article seeking and reading patterns of academics.](#)
7. **PhD comics** <http://www.phdcomics.com/comics.php>
8. **New York Times Column: “Scientist At Work”**
<http://topics.nytimes.com/topics/news/science/columns/scientistatwork/index.html>
9. **Set up alerts**
10. **Read a book or article about how users do their work**



Thank you!
Questions?

Andrea Kravetz
a.kravetz@elsevier.com
+1-513-942-6196

