User-centered design in technical communication

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“Sharing knowledge is better than having it.”

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Objectives of the workshop

• To familiarize participants with the user-centered design (U-CD) approach and the concept of usability
• To show how to apply U-CD and usability to the technical communication field
• To facilitate usability objectives and task analysis
• To show how to explore organizational constraints and how to deal with them
Introduction

• Background in instructional design (Amsterdam 1987)
• Design of (tech) facilities to enhance human learning processes
• Interface, document, and information designer (Informaat NL)
• WWW: Electronic documentation and user interface design merger
• Information designer and information architect (Razorfish EU Amsterdam)
• InfoDesign blog (1997): infodesign.bogieland.com - >230,000 visits
• BogieLand (2003): Information design & information architecture company
Exercise
Exercise: Definitions

- User experience
- User-centered design
- Usability
User-centered design
The origins of user-centered design

• U-CD gets known in the human factors profession with the publication of ‘User-Centered System Design’ by Donald Norman and Stephen Draper (1989)
• U-CSD is a product development process which:
  – Focuses on users as the center of the design phase
  – Uses empirical data throughout the design and development phases to validate design and make product decisions
  – Draws on multiple disciplines and skills early in the process
Definitions of user-centered design

• “... an approach to design that grounds the process in information about the people who will use the product. U-CD processes focus on users through the planning, design and development of a product.” (Usability Professionals Association)

• “... a design methodology focusing on users and their tasks, the design of the overall solution, and competitor products. The key point is that the total user experience drives the design. User feedback is gathered throughout the U-CD process and is integral to product plans, priorities, and decision making.” (Whitney Quesenbery)

• “User-centered design is focusing the design on the user, plain and simple.” (Peter J. Bogaards)
Principles of user-centered design

• Understanding the users
• Analyzing goals and tasks
• Setting usability objectives
• Prototyping (lo-fi / hi-fi)
• Usability testing
• Retesting and iterative design
User-centered design process phases

1. Analysis
2. Design
3. Implementation
4. Deployment

Nature of the process: incremental and iterative
U-CD analysis phase

- Meet with key stakeholders to set vision
- Include usability tasks in the project plan
- Assemble a multidisciplinary team to ensure complete expertise
- Develop usability goals and objectives
- Conduct field studies
- Look at competitive products
- Create user profiles
- Develop a task analysis
- Document user scenarios
- Document user performance requirements
U-CD design phase

• Begin to brainstorm design concepts and metaphors
• Develop information flow and navigation model
• Do walkthroughs of design concepts
• Begin design with paper and pencil
• Create low- and high-fidelity (detailed) prototypes
• Conduct usability testing on low-fidelity prototypes
• Do usability testing
• Document standards and guidelines
• Create a design specification
U-CD implementation phase

- Do ongoing heuristic evaluations
- Work closely with delivery team as design is implemented
- Conduct usability testing as soon as possible
U-CD deployment phases

• Use surveys to get user feedback
• Conduct field studies to get information about actual use
• Check objectives using usability testing
User-centered design methods and techniques

- User personas (Alan Cooper)
- User scenarios: stories of use (scenario-based design - John M. Carroll)
- Prototyping (lo-fi / hi-fi)
- Style guides (standards, guidelines, templates)
- Task analysis*
Personal profile

Kenichi Ikeda is a white collar worker at a travel agency. He lives in a Tokyo suburb with his wife and two children. His wife works as a freelance translator at home.

His living environment can be characterized as tasteful and "full of life". He is sensitive to brands such as Sony and Levi's trousers.

He has had 10 years of Primera which he uses for family activities, leisure, and shopping. He intends to buy a new car. He has discussed with his wife their budget and options.

Family needs are important to him, but he also likes "nice-to-have" additional accessories for himself, such as a quality car stereo set. He just saw an ad in the newspaper about car stereo sets. He wants to make a responsible decision for himself and his family.

His preference is new Nissan because he considers himself a loyal person. However, he is open to other Japanese (Japanese and foreign) brands as well. He has been investigating the various cars for a month now and especially paid notice to commercials and newspaper ads of car makers. He bought the magazine 'CarSource'. He found a local dealer through the Nissan site and paid a visit to a dealer but could not make up his mind. He looked at websites of Toyota and Honda as well.

In finding the appropriate information he has visited Japanese car sites several times and consulted information on the parts, accessories, and other specifications of cars.

Also, he wants to have extra accessories, like a child seat for his 3 years old. He likes the new Nissan Stagea for its design and features. To determine his final budget, he is figuring out how much money he will get back for his current Primera.

Kenichi Ikeda is about to determine the purchase of a new Nissan. When having decided upon a car, he always becomes a little impatient. So, he wants to know what the delivery period is for his car of choice.

Kenichi-san has received a brochure from a direct marketing campaign of a dealer in which a Nissan car is presented as a family car.

He has read some editorial in the brochure, but now he wants to know in what way the Nissan car has more special family safety.

Kenichi-san sees a TV commercial of a campaign. If one books a test drive at the local dealer, one can win tickets to Disney World. He decides to book the test drive, because his kids like Disney World.
Kenichi Ikeda - The Family Man

"Safety, space for my kids and quality of driving are important car features"

Actions and behavior

TO ENTER NISSAN SPACE
Although Kenichi-san can not remember the URL shown in the commercial, he thinks the homepage of the Nissan site will provide him with the appropriate reference to the Tokyo Disney Sea campaign. He selects the Nissan homepage from his browser bookmarks menu and the homepage appears. In a quick page scan, he is unable to identify immediately the specific Tokyo Disney Sea campaign. When he pays more attention to the contents of the homepage, he sees a reference called 'Our Campaigns', which he selects.

TO IDENTIFY
Kenichi-san scans the Nissan campaign overview with its names and duration periods. At position 7 of the overview, he identifies the Tokyo Disney Sea entry which he selects. The page with the campaign information appears and he is pleasantly surprised with the visual density of the information. He likes the clever integration of the branding of Nissan with the one from Disney. He expects to find an appropriate reference such as 'Request for Test Drive' but cannot find it at the top part of the page. He thinks he can find it somewhere else and scrolls down.

TO BE AT EASE
At the bottom of the page, his attention is attracted to a feature called 'Dealer Locator'. He is now confirmed of the fact that if he wants to find a dealer, he can. But first, he wants to know the terms and conditions of the campaign. He reads the campaign information more in detail and learns that it is directed towards booking a test drive for the Primera, X-TRAIL, and Stagea. He is pleased that his preferred car is among the candidates.

TO BE ASSURED
Kenichi-san wants to know if the booking is with any restrictions or conditions. He does not want to get involved in agreeing to anything he is unaware of. He reads further and understands that booking a test drive can only be done at dealers which have one of the cars mentioned above in their assortment. Therefore, he must find a local dealer selling the Stagea.

TO LEARN
Scrolling down the page, Kenichi-san sees the 'Dealer Locator' again and he wants to use it. The label states to enter a zip code to find a dealer. He enters his zip code and submits it. After a few moments, a results page shows with contact details of at least 15 dealers within his prefecture. He carefully tries to identify any familiar name or address. Also, he notices that each dealer has a red or blue button. In one of the 5 dealer entries, he sees a blue and a red button. Because he wonders what these buttons mean, he selects a blue button and gets additional information of the meaning of a 'blue dealer'. He does the same for the red button. Now he understands the difference much better.

TO DECIDE
Because only 'blue dealers' carry his preferred Stagea in their assortment, he must choose between 2 'blue dealers' in his prefecture to book a test drive. He decides to select the first one and selects the 'Request for Test Drive' option from the dealer entry. An electronic form appears.

TO BE SURPRISED
The forms looks rather simple to Kenichi-san and he starts to fill it in. He enters his name, address, and preferred car. He is pleasantly surprised to see his postal code (and address) being pre-populated in the form.

TO UNDERSTAND
The form also requests entering a telephone number. This field is marked as mandatory. Kenichi-san wonders why a Nissan dealer needs to know his phone number. He thinks that a phone number is unnecessary when you book a test drive electronically.

He remembers to have seen the option 'Our Booking Procedure' at the top of the form and thinks he will get some explanation on the minimal requirements to comply to the booking and competition. He reads the terms and conditions more closely and understands the rational behind the mandatory fields in general, and the phone field in particular.

TO COMMUNICATE
Kenichi-san returns to the form, completes it and submits his details. A 'thank you' page appears and he understands that a notification is send to him by email. The dealer will contact him as soon as possible to arrange the Stagea test drive. He switches to his email program and checks if he has new mails. Within a few seconds, he receives a mail which he identifies of being from the Nissan dealer.

TO ENJOY
Because he has noticed a reference to the website of Tokyo Disney Sea in the campaign information, he calls his children to inform them on the possibility of winning the Disney tickets. He shows them the website of Tokyo Disney Sea and they all are getting excited by the prospect. The children persuade him however, that in case he does not win the tickets, he will take them to the 'Rotate Sushi Place'.

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Exercise
Exercise: Create a user profile

- Conference delegate
- Workshop presenter
- Vendor or exhibitor
- Staff member
Exercise: Task analysis

- Make tea
- Boil an egg
- Brush your teeth
- Make coffee
Usability
Usability (ISO 9241)

• Usability:
  – Effectiveness (Does it do what the users require?)
  – Efficiency (Can users learn it quickly?)
  – Satisfaction (Do users express satisfaction with the product?)

  in context of use
System usability (Jakob Nielsen)

• Usability:
  – Learnability: The system is easy to learn
  – Efficiency: Once the system is learned, it is efficient to work with
  – Memorability: The system is easy to remember, can return after time and still be able to use
  – Errors: Low error rate as to avoid causing errors for user
  – Satisfaction: The system is enjoyable
Usability methods and techniques

- Inquiry:
  - Field observation
  - Interviews and focus groups
  - Questionnaires
- Inspection:
  - Heuristic evaluation
  - Cognitive walkthroughs
  - Formal usability testing*
- Testing:
  - Performance measurements
  - Thinking aloud protocols
  - Co-discovery method
Usability testing

- Find appropriate test participants (‘the real ones’)
- Develop test plan: Formulate the hypotheses you want to test
- Set the test environment
- Brief test participant: Test the design, not the participant
- Think aloud protocol
- Debrief test participant (feedback, suggestions, remarks)
- Analysis and (re)work recommendations
- Provide genuine rewards
BogieLand: Information design & information architecture

Peter J. Bogaards

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User-centered design in technical communication
Exercise
Pro’s and cons of formal usability testing

• Consider 5 pro’s of formal usability testing
• Consider 5 cons of formal usability testing
U-CD & technical communication
Definition of technical communication

• It's the process of gathering information from experts and presenting it to an audience in a *clear, easily understandable* form.
• Technical communicators gather knowledge from these experts by conducting interviews and reading previously published material.
• The technical communicator then *studies the audience* and determines the best way to present the information.
• The technical communicator reshapes the information so that the audience can have *access* to it and *understand* it.

(Source: Society of Technical Communication)
U-CD and technical communicators: Two roles

- Usable deliverables
  By applying U-CD principles to the design and development of their own technical communication deliverables, such as manuals, brochures, and tutorials

- U-CD participation
  By participating in the overall process for design and development of the hardware or software products they write about
U-CD skills for technical communicators

- Observing and interviewing users
- Interpreting data from user feedback sessions
- Creating prototypes and running prototype feedback sessions
- Designing information in stages: moving from the conceptual high level to low level
- Capturing the design and the rationale for design decisions
- Communicating design (proposals) to others
- Making design trade-offs based on schedules, resources, costs, and priorities of other designers
Usability & technical communication
Usability objectives in technical communication

- Maximize the speed of access to key information
- Present accurate and complete information
- Present specific information about specific topics
- Make the most effective use of the delivery method, for example online help
- Make the documentation the resource of choice for regular access, rather than asking colleagues how to perform actions
Organizational aspects
U-CD in the organization (old versus new)

- Internal focus / customer focus
- Centralized decision making / decentralized decision making
- Product focus / process focus
- Unit function / cross functions
- Disciplinary focus / interdisciplinary focus
- Single task / multiple tasks
- Inflexible / flexible
- Linear / iterative
Obstacles for U-CD implementation

- Management does not support usability
- Functionality or technology of the product, rather than usability, drives development decision-making
- Deadline pressures
- Aesthetics are considered more important than usability
- Usability considered an unknown, inexact concept
- Usability addressed too late in the development lifecycle
Exercise
Exercise: Organizational statements

• My organization does (not) support user-centered design because …
• My manager sees usability as …
• Our products are (not) very usable because of …
• My co-worker appreciates the philosophy of user-centered design and usability but …
• The major problem implementing user-centered design and usability into my organization is …
• The amount of time spend on formal usability in my project(s) is …, because …
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