

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*

3 The Family Man

Personal profile

Kenishi-san 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 Levis trousers.

He has a 6 year old 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 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 'CarSensor'. 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 Stages 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



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

background

- age: 37, married, two children (two boys: 6 and 3 years)
- has 4 years of college
- works in travel agency as a middle manager for service planning
- regular internet user: fast connection at work and an ISDN connection with his PC at home
- spends 5-10 hours a week on the internet
- visits YahooAuction and financial news sites regularly
- in his work, internet is mostly communication (e-mail) (internally/externally) with friends and colleagues
- earns about 7,000,000 yen annually

attributes

- older person with young self-perception
- more than 5 years experience with the internet
- more than 10 years experience with personal computers
- self-described as independent thinker, family man, and sense of style
- considers himself open to new ideas, trends and objects of desire
- is sensitive to design of 'beautiful things'
- favors simplicity over simplistic
- is cost-conscious
- likes technology if features and design are in balance
- likes sports in general and soccer/skiing in particular

customer needs

- wants a car within his budget
- wants a local, reliable dealer
- wants to compare prices of cars and their accessories
- wants to balance between his family and personal needs
- wants to be perceived as knowledgeable
- wants fast and reliable information and communication
- wants to feel comfortable in his decision making process
- wants proven state-of-the-art technology
- wants guidance and support

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scenario	needs	feature	behavior
Kenichi-san 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.	<ul style="list-style-type: none"> • information • closest dealer • find 	<ul style="list-style-type: none"> • site map • dealer locator • search 	Kenichi-san selects the Buying section and looks where to find delivery periods. He browses some pages but cannot find it. He uses the Search option, but with no results. Finally, he finds a dealer with contact details. He sends an email to
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	<ul style="list-style-type: none"> • education • guidance • confirmation • test results 	<ul style="list-style-type: none"> • feature specs • special features • family car types • philosophy on Safety & Technology 	Kenishi-san browses through the various car categories to find the family car. He selects one and then browses and scans the features. He looks and listens to each feature explanation of the car. He sees a link to Inside Nissan and expects also to find
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.	<ul style="list-style-type: none"> • terms and conditions of campaign • local dealer • communication with dealer 	<ul style="list-style-type: none"> • campaign info • dealer locator • car information • contact details 	Kenichi-san sees the link to the campaign information. He reads the terms and conditions and he thinks he can apply for the test drive. First, he has to find the local dealer for the test drive.

Jan. 29, 2002

Tokyo Disney Sea

Context

Kenichi-san has seen a TV commercial of a Nissan campaign. The campaign promotes booking a test drive with a Nissan car at a local dealer. This promotion is directed at families which intend to buy a new car and like to visit Tokyo Disney Sea with their children. Booking a test drive creates the possibility for them to win tickets to this theme park.

As most children, the children of Kenichi-san like to visit Tokyo Disney Sea. On a Sunday afternoon at home, Kenichi-san applies for a test drive.

Goal and intention

To book a test drive for the Stagea with a possibility to win tickets for his family to visit Tokyo Disney Sea.

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 their 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.

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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 zipcode to find a dealer. He enters his zipcode 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 form 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 rationale 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 sent 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 as 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'.

Feb. 13, 2002

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

EServer TC Library

a cooperative library for tech communicators

Usability
700 found.

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Отработка Возражений Против Дизайна Пользовательского Интерфейса
У эргономиста могут возникнуть трудности в отстаивании своих позиций.
Andreev, Viktor. Usability.ru (2002). (Russian) [Articles](#)>[Usability](#)>[User Interface](#)

★★★★ Great
[rate: 1 2 3 4 5]
n=2

از انمشدا، عجرم دامدخ ر ،اعلاط بوجتسد
A paper on recent usability and user-centered design methods.
Iranian Information and Documentation Center. (Farsi) [Articles](#)>[User Centered Design](#)>[Usability](#)

★★★ OK
[rate: 1 2 3 4 5]
n=8

بحملا ،اطلا دحاك تيندمولا تيعانصلا تطيرخلا تملا رصنعلا ،اقلاعل
دريفتملا ن م رينكر رثاكتي تلا ، نفعلا ايلملا ن م اهنيغتل موملا
Salem,
Ahmed. OICC (2001). (Arabic) [Articles](#)>[Human Computer Interaction](#)>[Usability](#)

★★★★ Good
[rate: 1 2 3 4 5]
n=11

Επικοινωνία Ανθρώπου - Μηχανής
Η Επικοινωνία Ανθρώπου-Μηχανής είναι ο διεπιστημονικός κλάδος που ασχολείται με την
ανάλυση.
University of Crete. (Greek) [Academic](#)>[Courses](#)>[Graduate](#)>[Usability](#)

★★★★ Good
[rate: 1 2 3 4 5]

Ευχρηστία και διαδίκτυο
το κομμάτι αυτό αποτελεί μέρος ενός Web usability survey που έχει συγγράψει ο Τσέλιος
Νίκος.
University of Patras. (Greek) [Articles](#)>[Education](#)>[Usability](#)>[Web Design](#)

★★★★ Good
[rate: 1 2 3 4 5]
n=3

Accentuate the Negative: Obtaining Effective Reviews Through Focused Questions
Proposes an approach to obtaining useful feedback that emphasizes negative 'what did we do wrong?' questions.
Hart, Geoffrey J.S. Technical Communication Online (1997). [Articles](#)>[Usability](#)>[Assessment](#)

★★★★ Good
[rate: 1 2 3 4 5]
n=9

Access to Current and Next-Generation Information Systems by People with Disabilities
Information and resources for those interested in learning more about accessibility issues and current and next-generation information systems.
University of Wisconsin. [Articles](#)>[Usability](#)>[Accessibility](#)

★★★★ Good
[rate: 1 2 3 4 5]
n=6

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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