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The Process of Interaction Design. Overview What is Interaction Design? —Four basic activities —Three key characteristics Some practical issues —Who are.

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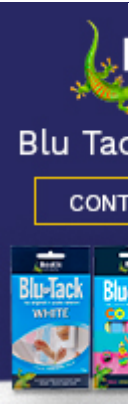
- Prof. Saul Greenberg, University of Calgary, notes and articles
- INUSE 6.2 and RESPECT 5.3 Handbook
- Prof. , University of , Notes and articles



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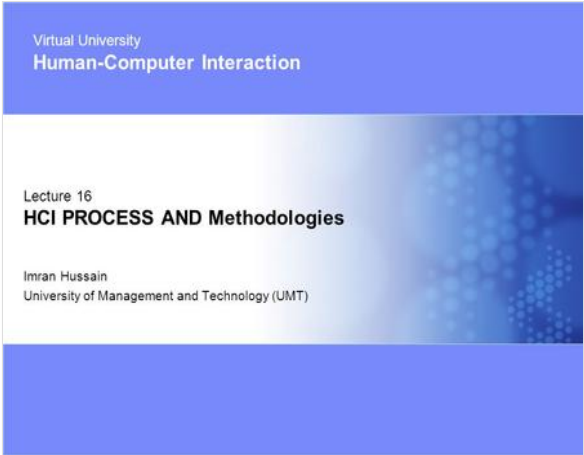


Presentation on theme: "The Process of Interaction Design. Overview What is Interaction Design? —Four basic activities —Three key characteristics Some practical issues —Who are."—
Presentation transcript:



- 1
- The Process of Interaction Design
- 2
- Overview What is Interaction Design? —Four basic activities —Three key characteristics Some practical issues —Who are the users? —What are ‘needs’? —Where do alternatives come from? —How do you choose among alternatives? Lifecycle models from software engineering Lifecycle models from HCI
- 3
- What is Interaction Design? It is a process: —a goal-directed problem solving activity informed by intended use, target domain, materials, cost, and feasibility —a creative activity —a decision-making activity to balance trade-offs It is a representation: —a plan for development —a set of alternatives & successive elaborations

- 4
- Four basic activities There are four basic activities in Interaction Design: 1. Identifying needs and establishing requirements 2. Developing alternative designs 3. Building interactive versions of the designs 4. Evaluating designs
- 5
- Three key characteristics Three key characteristics permeate these four activities: 1. Focus on users early in the design and evaluation of the artefact 2. Identify, document and agree specific usability and user experience goals 3. Iteration is inevitable. Designers never get it right first time
- 6
- Some practical issues Who are the users? What are ‘needs’? Where do alternatives come from? How do you choose among alternatives?
- 7
- Who are the users? Not as obvious as you think: —those who interact directly with the product —those who manage direct users —those who receive output from the product —those who make the purchasing decision —those who use competitor’s products ??? Three categories of user: —primary: frequent hands-on —secondary: occasional or via someone else; —tertiary: affected by its introduction, or will influence its purchase. Wider term: stakeholders
- 8
- Who are the users? (contd) What are their capabilities? Humans vary in many dimensions! Some examples are: —size of hands may affect the size and positioning of input buttons; —motor abilities may affect the suitability of certain input and output devices; —height if designing a physical kiosk; —strength - a child’s toy requires little strength to operate, but greater strength to change batteries
- 9
- What are ‘needs’? Users rarely know what is possible Users can’t tell you what they ‘need’ to help them achieve their goals Instead, look at existing tasks: —their context —what information do they require? —who collaborates to achieve the task? —why is the task achieved the way it is? Envisioned tasks: —can be rooted in existing behaviour —can be described as future scenarios
- 10
- Where do alternatives come from? Humans stick to what they know works But considering alternatives is important to ‘break out of the box’ Designers are trained to consider alternatives, software people generally are not How do you generate alternatives? —‘Flair and creativity’: research & synthesis —Seek inspiration: look at similar products or look at very different products
- 11
- How do you choose among alternatives? Evaluation with users or with peers e.g. prototypes Technical feasibility: some not possible Quality thresholds: Usability goals lead to usability criteria set early on and check regularly —safety: how safe? —utility: which functions are superfluous? —effectiveness: appropriate support? task coverage, information available —efficiency: performance measurements
- 12
- Lifecycle models Show how activities are related to each other Lifecycle models are: —management tools —simplified versions of reality Many lifecycle models exist, for example: —from software engineering: waterfall, spiral, JAD/RAD, Microsoft —from HCI: Star, usability engineering A simple interaction design model
- 13
- Evaluate (Re)Design Identify needs/ establish requirements Build an interactive version Final product
- 14
- Traditional ‘waterfall’ lifecycle Requirements analysis Design Code Test Maintenance
- 15
- JAD workshops Project set-up Iterative design and build Engineer and test final prototype Implementation review A Lifecycle for RAD (Rapid Applications Development)
- 16
- Important features: —Risk analysis —Prototyping —Iterative framework allowing ideas to be checked and evaluated —Explicitly encourages alternatives to be considered WinWin spiral model incorporates stakeholder identification and negotiation Spiral model (Barry Boehm)
- 17
- The Star lifecycle model Suggested by Hartson and Hix Important features: —Evaluation at the center of activities —No particular ordering of activities. Development may start in any one —Derived from empirical studies of interface designers
- 18
- Reported by Deborah Mayhew Important features: —Holistic view of usability engineering —Provides links to software engineering approaches, e.g. OOSE —Stages of identifying requirements, designing, evaluating, prototyping —Can be scaled down for small projects —Uses a style guide to capture a set of usability goals Usability engineering lifecycle model
- 19
- Summary Four basic activities in the design process 1. Identify needs and establish requirements 2. Design potential solutions ((re)-design) 3. Choose between alternatives (evaluate) 4. Build the artefact These are permeated with three principles 1. Involve users early in the design and evaluation of the artefact 2. Define quantifiable & measurable usability criteria 3. Iteration is inevitable Lifecycle models show how these are related



CS305: HCI in SW Development

Software process and user-centered design

Readings:

(1) ID-Book, Chapter 9

(2) Ch. 1 from Task-Centered User Interface Design (on web)

Chapter 4 Design Approaches and Methods

No agreed standards on design practice.

Different schools of thought, e.g. one school suggested that design should follow **formal scientific and engineering practices**, whilst another school argues that design should incorporate a **strong creative element**.

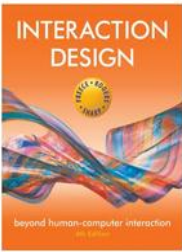
Lifecycle models

1. For more info on these models – see text
2. Specific References are in notes view
3. Present the model you think is most appropriate for IxD and Web 2.0 processes

SECOND MIDTERM REVIEW

CS 580

Human Computer Interaction



Chapter 9 THE PROCESS OF INTERACTION DESIGN