IBM's approach

Total user experiences

Ease of Use

Total User Experience

through

Principles

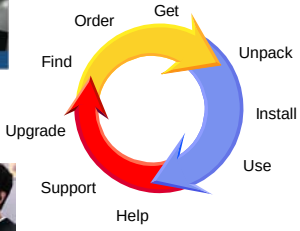
Processes

and

Tools

Total User Experience

Everything the user *sees, hears, and touches*



Total user experience

- Easy to buy
- Easy to set up
- Easy to learn
- Easy to use
- Intuitive
- Engaging
- useful

What is the distinction between ease of use and UCD?

- Ease of use is an attribute we want our products to have, and
- User-Centered Design is the method we use and advocate for getting ease of use into products.

UCD Principles - IBM

1. **Set Business Goals**
   Determining the market, users, and competition to target is central
2. **Understand Users**
   An understanding of the users is the driving force behind all design.
3. **Design the Total User Experience**
   Everything a user sees and touches is designed together by a multidisciplinary team
4. **Evaluate Designs**
   User feedback is gathered often and drives product design and development.
5. **Assess Competitiveness**
   Competitive design requires a relentless focus on the competition and its customers.
6. **Manage for Users**
   User Feedback is integral to product plans, priorities, and decision making.

What UCD Is

UCD is

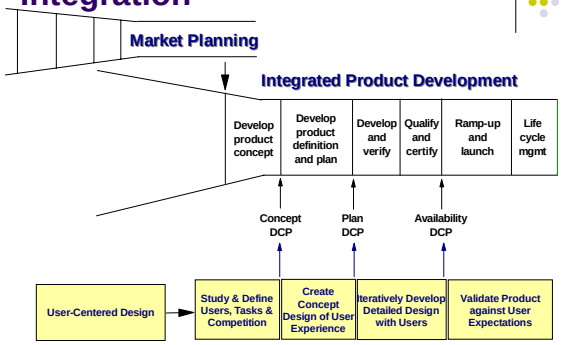
- ✓ Conducting studies to
  - ✓ *Understand users*
  - ✓ *Drive and evaluate design*
  - ✓ *Assess competitiveness*
- ✓ Multidisciplinary Design
  - ✓ *of the total user experience*
  - ✓ *based on input from representative users*
- ✓ End-to-end iterative design of solutions

What UCD Isn't

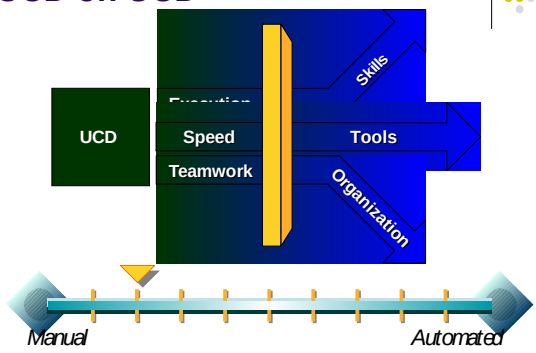
UCD isn't

- × Simply conducting usability studies
- × Simply talking to users
- × Designers taking the user's perspective
- × A method just for designing user interfaces
- × A set of methods just for gathering user feedback
- × Another name for usability

Integration

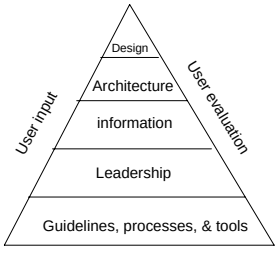


UCD on UCD



The UCD Team

Team model



UCD Team Lead

- **Responsibility:** Has overall responsibility for UCD deliverables and plans as well as the integration of them into the development plan.
- **Skills:** Project management, UCD process, development process

User Experience Design Lead

- **Responsibility:** Has responsibility for the total user experience design of the project.
- **Skills:** Vision, leadership, technical expertise, project and people management, facilitation

Visual or Industrial Designer

- **Responsibility:** Has responsibility for the overall appearance, layout, balance of the software offering including the consistent visual signature of the advertising, packaging, and product design.
- **Skills:** Art, design, model/prototype building, creativity, teamwork

HCI Designer

- **Responsibility:** Responsible for specifying the task flow, interaction design, and division of tasks to be carried out by the user and by the computer.
- **Skills:** Human-Computer Interaction, conceptual modeling, information synthesis

User Assistance Architect

- **Responsibility:** Has responsibility to specify the appropriate user assistance mechanisms for the offering.
- **Skills:** Information architecture, teamwork

Technology Architect

- **Responsibility:** Has responsibility for specifying the underlying technology required to implement the desired total user experience.
- **Skills:** Technical skill in relevant domain, development process, programming and/or engineering, teamwork

Marketing Specialist

- **Responsibility:** Specifies the target market, user audience, key competitor, market ease of use objectives, and ease of use messages as well as the channel, packaging, and terms and condition requirements.
- **Skills:** Marketing, market intelligence, market trends, synthesis of information, teamwork

Service/Support Specialist

- **Responsibility:** Specifies the service and support that should be delivered with the offering.
- **Skills:** Service/support technologies and options

Internationalization & Terminology Specialist

- **Responsibility:** Ensures the offering addresses the needs of the international audience and specifies the terminology in the offering
- **Skills:** Internationalization and localization specialization, terminology, languages, HL enablement

User Research Specialist

- **Responsibility:** Has responsibility for the design, analysis, and interpretation of User-Centered Design studies carried out on the project including the articulation of recommendations coming from this applied research.
- **Skills:** Usability Engineering, technical aptitude, UCD methods

Common problems in a UCD project team

- fail to see the need of both Visual Designers and Human Factors specialists
- fail to include marketing in the multidisciplinary design team
- fail to recruit appropriate individuals to serve as UCD Project Leaders or User Experience Design Leads
- Organizations not familiar with skills such as Visual Design or Human Factors often expect others to "pick up" these skills, or they hire individuals with these skills but with insufficient training and/or experience.

Skills (example from IBM)

To get IBM teams enabled and optimized for UCD, we run...

Executive Workshops
Half-day case-based session
Senior and middle management
Introduction to UCD Classes
One-day awareness and overview
Entire product team
UCD Practitioner Workshops
Two-day hands-on experience building
Project UCD Team
Monthly Technical Vitality Webcasts
Yearly Conferences

Adopting User-Centered Design

- IBM and industry colleagues have found particularly effective for overcoming the difficulty of adopting UCD within such environments
  - Getting started Strategies for persuading your organization to adopt User-Centered Design.
  - Staying committed Strategies for ensuring the success of User-Centered Design.

Getting start

- **Simplify the message**
- **Tailor your messages to the concerns of each audience**
- **Demonstrate the problems poor usability causes your organization**
- **Provide evidence that demonstrates the value of UCD**
- **Establish a set of UCD Principles**
- **Use simple messages to promote the need for UCD**
- **Provide UCD education**

IBM messages for promoting UCD

- Is your technology showing?
- Nobody buys ease of use. But nobody buys products without it either.
- Ease of use may be invisible, but its absence sure isn't.
- Do you know who your users are?
- Learn from experience the user's.
- Engineering the killer app isn't exactly child's play. But using it better be.

Cost-justifying

Cost savings

	500 users	10,000 users
	X (3sec./3600 x $15,00/hr)	
	X 50 screens per day	
	X 230 days per year	
	$ 71,875	**$ 1,437,500**

Some common asked questions

- **Is the goal to have developers automatically incorporate UCD into their timeline?**
- **Is UCD just another word for "usability testing"?**
- **Is UCD only appropriate for products with pervasive graphical user interfaces?**

Some common asked questions

- **Doesn't UCD involve a lot of heavy process and complicated methods?**
- **Who needs to know about UCD in an organization?**
- **Does UCD involve decreasing management control over projects?**

Some common asked questions

- **Do all product teams need to invest in UCD at the same high level?**
- **Do user problems have to come from users?**
- **What if my project doesn't have a true UCD multidisciplinary team?**

Staying committed

- **Take advantage of every opportunity to integrate UCD into the organization**
- **Secure appropriate funding**

UCD typically requires funding for:

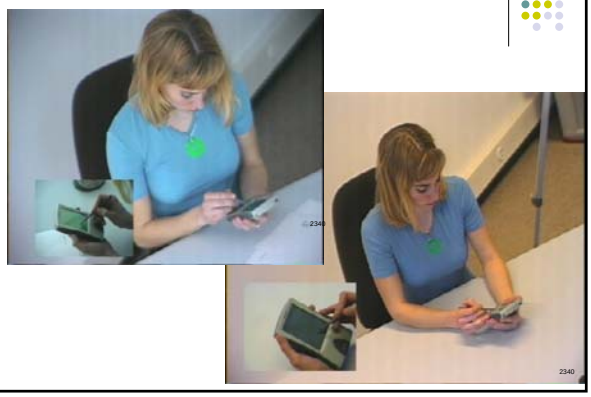
- ***Staffing:*** Many organizations need to add skills for Visual Design and User Research/Human Factors. Individuals with these skills are in high demand, so make sure you have flexibility in your budget to attract the most qualified person(s).
- ***Tools and infrastructure:*** The most expensive infrastructure will be the UCD laboratory.

Create UCD infrastructure

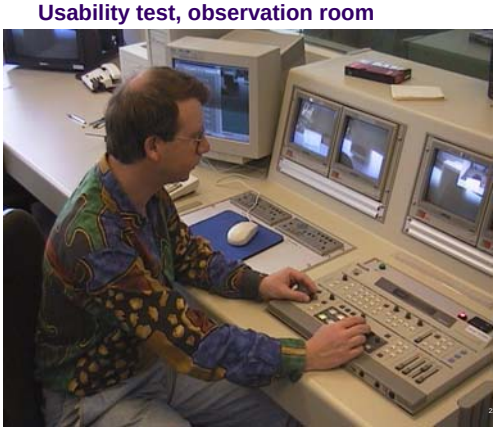
- **Participant Room:** The participant room simulates, as much as possible, the environment in which the product would most likely be used.
- ***Observation Room:*** The participant and observation rooms are divided by one-way glass and a sound-resistant wall.
- ***Control Panel:*** The observation room often contains the following:
  - VCR decks--records input from cameras and microphones in the participant room
  - Logger--software that enables observers to note the participant's important actions and comments along with the time of the comment
  - Video Editing Suite--enables practitioners to create highlight videos
  - Scan Converter--records the participant's computer screen and allows the observer to zoom in on particular parts of the screen
- ***Portable Labs:*** An alternative or adjunct to a fixed UCD lab is a portable lab.

Usability test Laboratory

Usability test in lab.



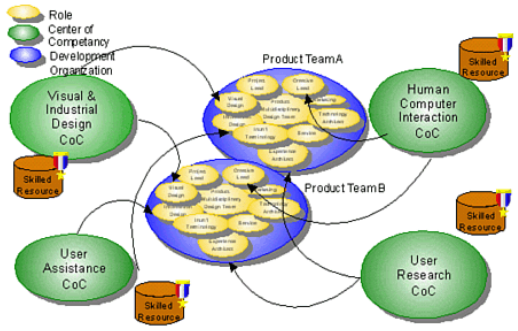
Usability test, observation room



UCD typically requires funding for:

- ***Competitor product acquisition:*** Competitor evaluation is a core aspect of User-Centered Design. You may want to purchase the product.
- ***Participant expenses:*** UCD requires a regular supply of study participants, and you will need to provide incentives to encourage participation.
- ***Project plan support:*** Determine up front the major ease-of-use objectives for the product and the resources required to meet those objectives

Optimize your organization structure



Organization

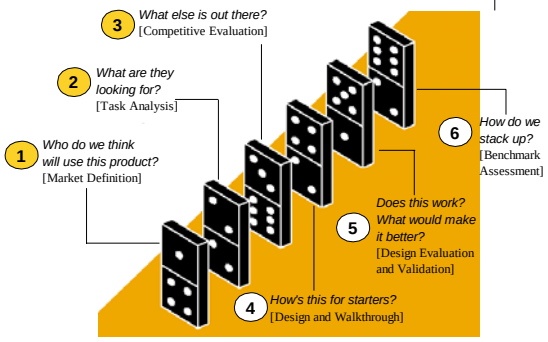
IBM Ease of Use
Tony Temple

Ease of Use Champions	Design Consultancy	UCD Advisory Council
Susan Mills	Mark Evans	Karel Vredenburg

User-Centered Design

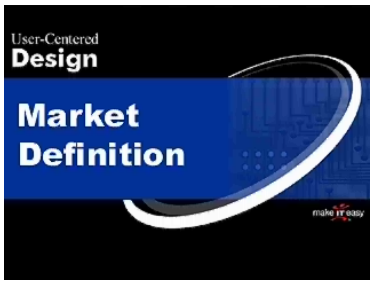
Integrated Product Development

UCD Process



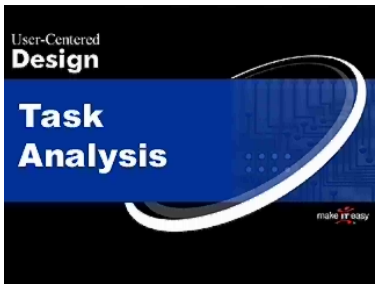
Market Definition

- **Activity**: Define stakeholder, identify competitor(s), competitive advantage objective, define new product or product enhancement.
- **Typical methods:** requirement study
- **User Feedback Data:** Market data, customer requirements



Task analysis

- **Activity**:
  - Identify and understand the users' goals and tasks,
  - the strategies they use to perform the tasks,
  - the tools they currently use, any problems they experience,
  - the changes they would like to see in their tasks and tools.
- **Typical methods:** ask users to list and prioritize tasks; observe users accomplishing their tasks
- **Deliverable:** A customer description for recruiting task analysis participants
- **User Feedback Data:** Current and future tasks plus task attributes, typical scenarios of use

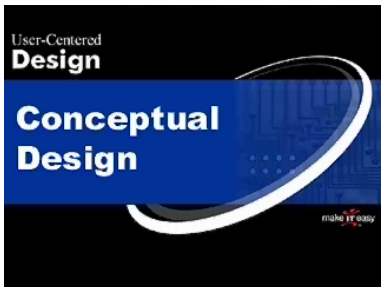


Competitive Evaluation

- **Activity:** Prepare for competitive evaluation, evaluate competitor evaluation data
- **Typical methods:** ask users to complete the same tasks using different products and assess their overall satisfaction with each one; ask them to list the strengths and weaknesses of products in order of importance
- **Deliverable:** Tasks and scenarios to be used in evaluation
- **User Feedback Data:** Competitor's strengths, weaknesses, and impact; users' satisfaction with competitor; benchmarks

Design and Walk-through

- **Activity:**
  - Set high-level design objectives;
  - identify model, metaphors, main messages, and alternative design solutions;
  - propose alternative design solutions, choose a solution based on user input
- **Typical methods:** ask users to evaluate "lo-fi" prototypes such as simple sketches
- **Deliverable:** Lo-fi prototypes of high-level designs and/or mockups for design walk-through, "go or no go" recommendation based on users' response to the high-level design
- **User Feedback Data:** Users' satisfaction and their intent to purchase, users' reaction to the high-level design



Evaluation and Validation

- **Activity:**
  - Set specific design objectives, alternatives;
  - prototype, evaluate, and validate designs; hold low-level design reviews;
  - periodically solicit user feedback on the evolving design;
  - iterate the design based on analysis of users' experiences with it
- **Typical methods:** observe users accomplishing important tasks with a working prototype
- **Deliverable:** Lo-fi prototypes of specific design solutions
- **User Feedback Data:** Users' reactions to low-level designs, comparisons to competitor benchmark data

Benchmark Assessment

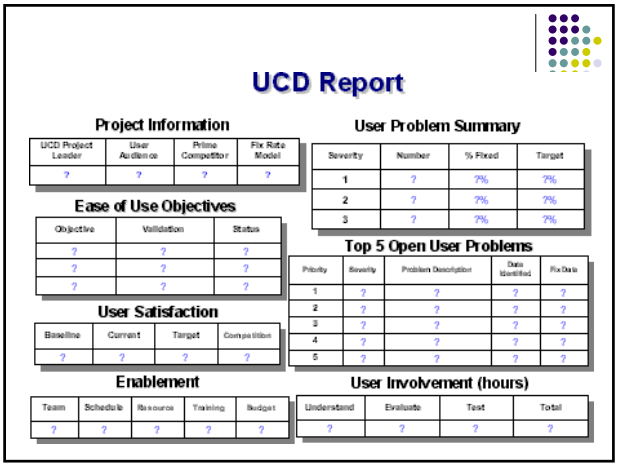
- **Activity:** Run a head-to-head benchmark assessment against the competition, evaluate benchmark assessment data, target changes for future releases
- **Typical methods:** ask users to complete the same tasks using different products and assess their overall satisfaction with each one; ask them to list the strengths and weaknesses of products in order of importance.
- **Deliverable:** Ship recommendation
- **User Feedback Data:** Users' satisfaction and their intent to purchase, comparisons to benchmarks

Identify UCD Champions

- The objectives of the UCD Champions are to:
  - Drive UCD into the business, and ensure the quality and execution of action plans
  - Review UCD funding, staffing, resources, salaries, awards, job levels, and attrition
  - Ensure that performance plan commitments (for executives and line managers) contain appropriate UCD actions and ease-of-use targets
  - Ensure that UCD practitioners' skills are continually strengthened through internal and external contacts (education, conferences, workshops, and newsletters)
  - Develop and maintain knowledge of the entire UCD process and share knowledge freely with other practitioners
  - Track the key UCD metrics and report progress to executives

UCD report

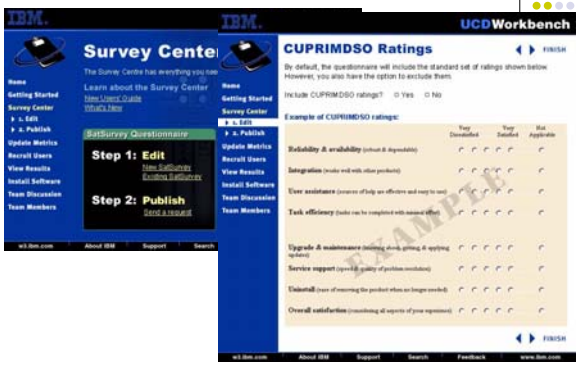
- General project information, such as the name of the UCD Project Leader and the target user audience
- Specific ease of use objectives for a product release and the status achieving these objectives
- Current and target customer satisfaction measures
- Enablement information (e.g. schedule and budget)
- The number of severity 1, 2, and 3 user problems and percent fixed
- A list of user problems and the status fixing each
- The total number of hours users have been involved in the development of the product



Some questions

- **What are the Top 5 User Problems when all level 1 problems have been fixed?**
- **What is the difference between UCD and market research?**

Tools



Tools

How can UCD tools benefit Designers?

- UCD tools simplify and expedite gathering user input and feedback. The more quickly the design team can gather user input and feedback, the more user data they are likely to gather and use that assists in the design of the product.