User Centered Design (UCD)

Your constantly-updated definition of User Centered Design (UCD) and collection of videos and articles

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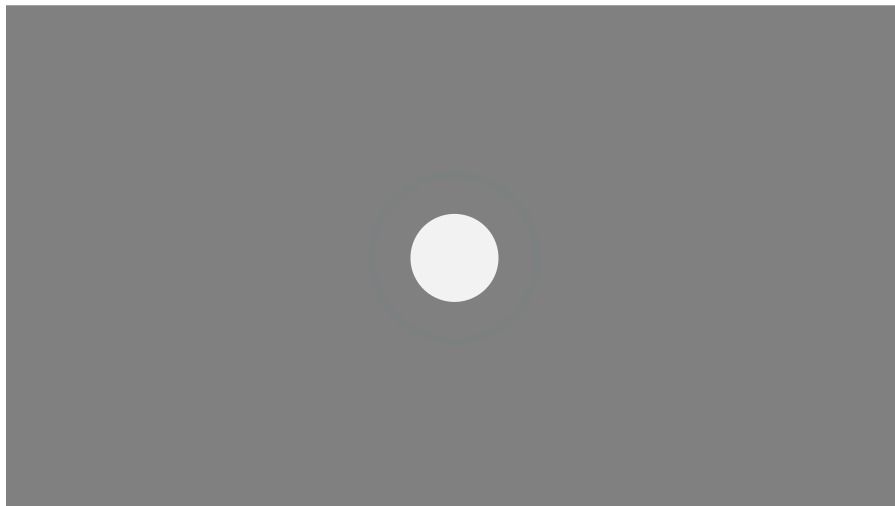
What is User Centered Design (UCD)?

User-centered design (UCD) is an iterative design process in which designers focus on the users and their needs in each phase of the design process. In UCD, design teams involve users throughout the design process via a variety of research and design techniques, to create highly usable and accessible products for them.

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UCD is an Iterative Process

In user-centered design, designers use a mixture of *investigative* methods and tools (e.g., surveys and interviews) and *generative* ones (e.g., brainstorming) to develop an understanding of user needs. The term was coined in the 1970s. Later, cognitive science and user experience expert Don Norman adopted the term in his extensive work on improving what people experience in their use of items. And the term rose in prominence thanks to works such as *User Centered System Design: New Perspectives on Human-Computer Interaction* (which Norman co-authored with Stephen W. Draper) and Norman's *The Design of Everyday Things* (originally titled *The Psychology of Everyday Things*).


4 Phases in User-centered Design

Generally, each iteration of the UCD approach involves four distinct phases. First, as designers working in teams, we try to understand the *context* in which users may use a system. Then, we identify and specify the users' *requirements*. A *design* phase follows, in which the design team develops solutions. The team then proceeds to an *evaluation* phase. Here, you assess the outcomes of the evaluation against the users' context and requirements, to check how well a design is performing. More specifically, you see how close it is to a level that matches the users' specific context and satisfies all of their relevant needs. From here, your team makes further iterations of these four phases, and you continue until the evaluation results are satisfactory.
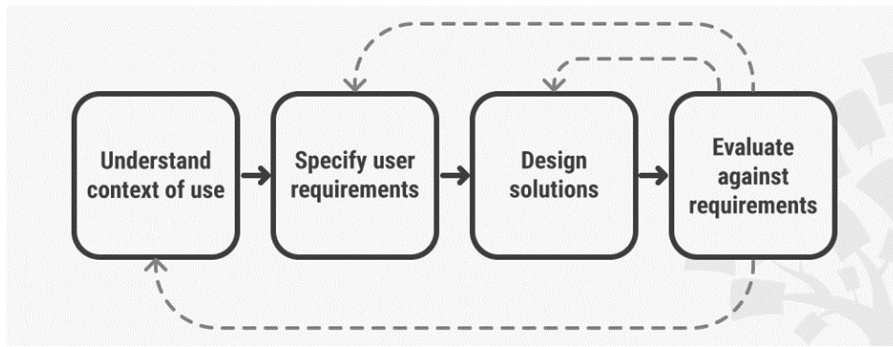
User-centered design is an iterative process that focuses on an understanding of the users and their context in all stages of design and development.

UCD Considers the Whole User Experience

In UCD, you base your projects upon an explicit understanding of the users, tasks and environments. The aim of the process is to capture and address the *whole* user experience. Therefore, your design team should include professionals from across multiple disciplines (e.g., ethnographers, psychologists, software and hardware engineers), as well as domain experts, stakeholders and the users themselves. Experts may carry out evaluations of the produced designs, using design guidelines and criteria. However, you should bear two crucial points in mind. First, to span the entire user experience, you must involve the users for evaluation. Second, you'll need to ensure *long-term* monitoring of use.
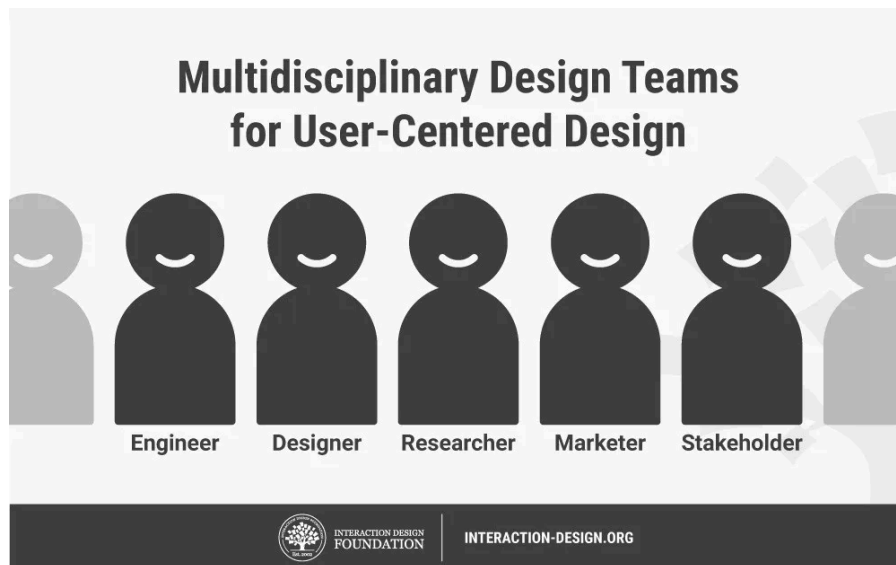
Investment in UCD Pays off

When your design team brings the users into every stage of the design process, you invest your effort and other resources into a powerful way of finding out what works well, what doesn't and why. Your users are an early-warning system you can use to course-correct and fine-tune your design. They can expose many aspects—positive and negative—your team may have overlooked regarding such vital areas as usability and accessibility. That's why it's so important to understand how powerful the benefits of a user-centered design approach are.

> *"Being human-centred is an additional cost to any project, so businesses rightly ask whether taking so much time to talk to people, produce prototype designs and so on is worthwhile. The answer is a fundamental 'yes'."*
>
> — *David Benyon, Professor with over 25 years of experience in the field of HCI*

David Benyon distinguishes four ways in which UCD pays off:

1. With close user involvement, products are more likely to meet users' expectations and requirements. This leads to increased sales and lower costs incurred by customer services.

2. Systems designers tailor products for people in specific contexts and with specific tasks, thereby reducing the chances of situations with a high risk of human error arising. UCD leads to safer products.

3. Putting designers in close contact with users means a deeper sense of empathy emerges. This is essential in creating ethical designs that respect privacy and the quality of life.

4. By focusing on all users of a product, designers can recognize the diversity of cultures and human values through UCD – a step in the right direction towards creating sustainable businesses.

Learn More about User-Centered Design

Take our 21st Century Design course with Don Norman to study areas of UCD.
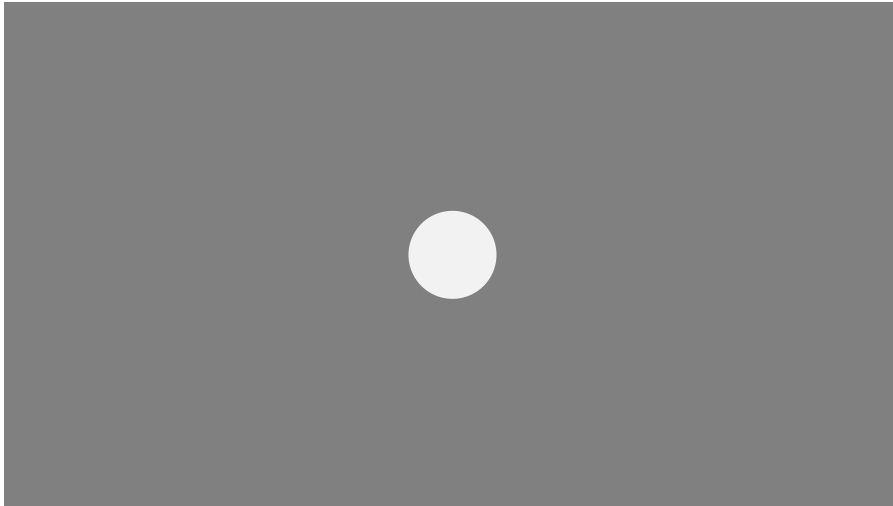
Read Don Norman and Stephen W. Draper's User Centered System Design: New Perspectives on Human-computer Interaction for a wealth of insights into this fascinating subject.

Don Norman's legendary book The Design of Everyday Things covers a wide array of UCD aspects.

You can read more about user-centered design from Professor David Benyon in his book *Designing Interactive Systems – A Comprehensive Guide to HCI, UX and Interaction Design.*

UXmastery.com has created a list of techniques that you can use in a UX design process. Many of them will help you put the user center stage in your project. Browse the techniques here.

Questions related to User Centered Design

What is a persona in the context of user-centered design?   ∧

In the context of user-centered design, a persona is a detailed and semi-fictional representation of an ideal user of a system. It is a tool used by designers to maintain focus on the user's needs throughout the design process. A persona typically includes demographics, needs, goals, and behavioral patterns.

HCI expert Prof Alan Dix explains how a persona, such as 'Betty', can be created with details like age, education, job role, and challenges faced to help designers understand and address the specific needs of similar users.
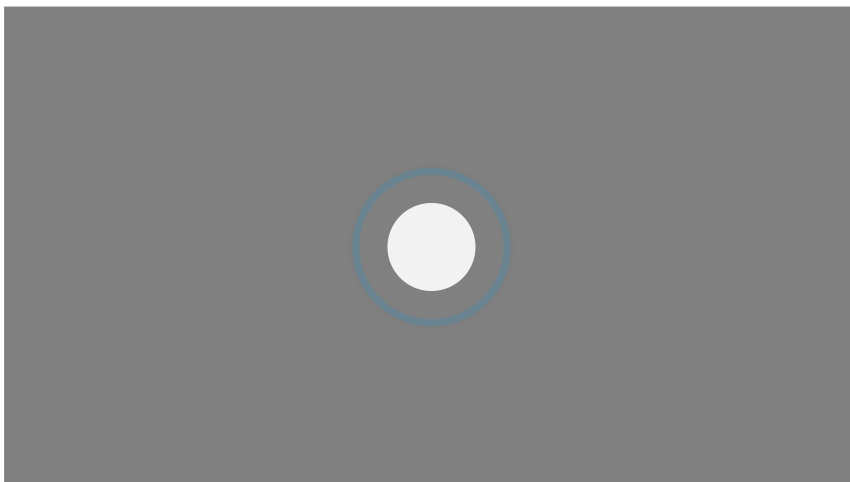
This detailed description helps seed the imagination of designers and enables them to ask critical questions like "Would Betty understand this feature?" or "How would Betty feel about using this aspect of the system?". This approach ultimately leads to a more user-centered and effective design.