

13 “NOT SO FAST”: CENTERING YOUR USERS TO DESIGN THE RIGHT SOLUTION

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Scenario 1: You have a great idea for a new invention: an umbrella that doubles as a portable coffee maker! But before you start creating prototypes and getting startup funding from investors, it is important to think “not so fast. Does this invention solve a problem for real people?” To succeed, new products must solve people’s problems and give them positive experiences.¹

Scenario 2: Your company has an existing app that allows people to find dog sitters, and they want to add a new feature that lets people get take-out food from local restaurants delivered to their dog. Management may be tempted to assign programmers to start developing this feature right away. However, a better approach would be to say “not so fast. Do people actually want this feature? Will they actually use it?” Ideally, new product features are designed based on user research, input, and needs.

Scenario 3: Your manager strolls by your desk and says, “We need a 300-page PDF user manual that documents every feature of our website.” You’ll be tempted to jump in and get started. But if you can, think “not so fast. Does the audience really need a 300-page PDF? Maybe they want web help or a quick start guide instead.” In some cases, your manager will have done the legwork to know that users need the long manual. But too often, technical writing projects are based on assumptions, rather than research, about what users want and need.

User-centered design (often abbreviated as UCD) is a methodology and work process where you do not make assumptions about what your audience or user needs (Lowdermilk; Norman). Instead, you “center”

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the user at the beginning of any design, product development, or writing project to make sure it meets the needs of the person who will ultimately use it: the “end user.” This chapter will introduce you to some examples of strong user-centered design and some guidance on how to center users in your design and writing processes. We clarify how user-centered design differs from usability and end with a case study that will inspire discussion and reflection on how you can use user-centered design principles in the future.

WHAT IS USER-CENTERED DESIGN?

People want products, services, and documents that meet their needs and that they can easily use. This sounds obvious. But designers and writers can lose sight of the people who will actually use their products or documents (people we call “users” in this chapter) when the designers/writers are in the middle of their work. There are many ways to create things that don’t help users. Entrepreneurs or tech startups might create a really cool, slick, and technologically sophisticated product, only to discover that few people actually need it. Designers and companies might get attached to a product feature that users don’t want and struggle to give it up because they have put so much time and energy into developing it. Designers might assume that users think like them, when instead users have totally different knowledge and expectations. Writers might create user help documents or topics that follow a company template instead of finding out how people actually use the help. None of these designers and writers are thinking about what their users actually want and need.

The focus on creating products that users actually need and can actually use is called *user-centered design*. A more formal and detailed definition of a related concept called “human-centred design” comes from the ISO (International Organization for Standardization), which sets standards for businesses around the world. According to *ISO 9241-210: Human-Centred Design for Interactive Systems*, “Human-centred design is an approach to interactive systems development that aims to make systems usable and useful by focusing on users, their needs, and requirements” (International Organization for Standardization vi). Notice that this definition emphasizes that things should be usable and useful. That is, products and documents should have good usability so users can easily and intuitively operate

them (See Chapter 11 for more information on usability). But products and documents should also be useful, allowing people to complete tasks they actually need to complete. For instance, a website is usable if the menus allow users to easily find information, and it is useful if it contains information users want in the first place. User-centered design processes lead to useful products while usability testing leads to products that lack frustration during use.

User-centered design applies to the creation of products, services, and documents. In user-centered design, the needs of users take priority over the ideas and wishes of the designers, writers, and organization. People practicing user-centered design often have to set aside their own plans and egos to make sure that users come first. User-centered design starts with questions about users. Who are they? What do they want? What are their goals for using this product or document? What problems do they have that our product can solve? What experiences do they have with our product and similar products? What do they like and not like about our products or documents? Successful user-centered design requires significant knowledge about how users think, feel, and behave. It also takes a long-term perspective on users, considering their needs and behavior before, during, and after their engagement with the product document. User-centered design also considers users' long-term relationships with products and documents. When you practice user-centered design, you might have to sacrifice a pet project or a really innovative idea if it does not meet the users' needs.

User-centered design develops its perspective on users through a process that is iterative (that is, the process repeats and continues in cycles until the product truly meets user needs). This iterative process involves research and user input throughout design or writing (See Figure 13.1). The user-centered design process should begin with research and engagement with users to find out what they want and need. This research should lead to the development of product or business requirements that drive design decisions. These requirements lead designers to create product prototypes, which usually start simple and get more sophisticated as product development continues. As the business develops prototypes, it should test them with users to make sure its designs are useful and usable. If user research and testing reveal potential problems, designers should reevaluate and redesign to improve the product or document. Eventually, the business will release the product, but even then, they should provide ways to get user feedback through feedback forms or live tech support to make continuous upgrades and improvements based on user needs.

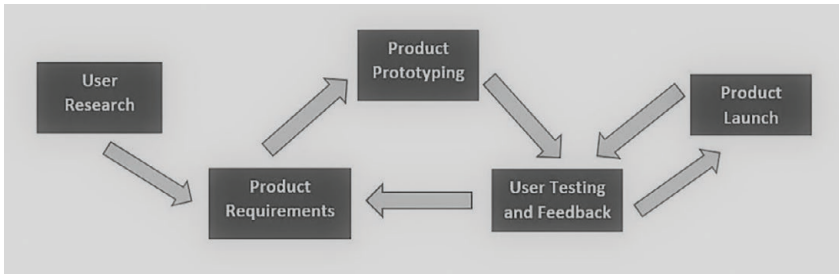


Figure 13.1: Iterative User-Centered Design Process

Often, user-centered design gets referred to by related names, like “design thinking” or “user experience” (UX). User-centered design can involve expertise from a variety of disciplines, including human-computer interaction (HCI), psychology, human factors (the study of how people perform tasks), ergonomics (the study of risk and discomfort during work), cognitive science, marketing, and technical communication. User-centered design will also involve input from many different kinds of professionals, including programmers, project managers, researchers, quality assurance professionals, graphic designers, sales people, and customer support. Because technical writers serve as user advocates who constantly remind organizations to consider and meet user needs, technical writers can be integrally involved in user-centered design.

Of course, to understand what users want, you have to engage with them in some way. A common acronym in user-centered design is GOOB, which stands for “Get Out Of The Building!” You have to leave your desk or workspace and find current or potential users so you can learn about them and let that knowledge drive your design. You want to design specifically for your users instead of for a generic user or an imagined user. Understanding users requires more than just knowing their demographics. For instance, knowing that your users tend to be 30 to 40-year-old American mothers will not give you specific enough information to design successfully for them, because you still do not know the goals, tasks, and emotions of this group. Because each product is different, you cannot always apply insights from user research about one product to another. For instance, PC and Mac users tend to be very different, even though they both use laptops. Remember too that the user for a product or document is rarely “everyone.” Some products, services, and documents have a very specific, narrow set of users with specialized goals or technical knowledge, so you will need to really get to know them. Even extremely popular products and documents with large user bases (like Facebook or TikTok and their

associated user help) usually have several subgroups of users with specific goals and purposes.

To truly design and write for your users, you need to learn at least the following things about them:

Goals: User goals matter most. What goal do users fulfill by using your product, service, or document? If your product or document does not help users fulfill their goals, they won't use it, simple as that. And users rarely see using your product as an end goal. For instance, few users have the goal to use TikTok. Instead, people use TikTok to achieve other goals, such as connecting with friends, building their social status, having fun, or selling products. TikTok provides a tool for them to achieve these goals. Similarly, few users have the goal of reading the white paper you wrote. Instead, that white paper gives them knowledge they can use to achieve their actual goal.

Context of Use: Find out where and when people are using your product. They may use it in a noisy, chaotic, or dangerous environment very different from the office or lab where it was designed. Products must fit their environment. For instance, if people will use your technical instructions outside, you will need to make them weather-proof. Also consider how often people use your product. Some products, like cars and Instagram, get used every day and become second nature to users. Some products, such as tax software or wedding registries, are used only in specific circumstances. And some products, such as fire extinguishers or inflatable life rafts, are used only in emergencies. To design a product well, you have to know where and when people will use it.

Emotions: Users come to products and documents with complex emotions, and they have complex emotions about products and documents. Different user goals will likely arouse different emotions. People may already be in a good mood when they get to use an Amazon gift card, and they may already be stressed or worried when they have to complete an incident report at work. People are usually already annoyed by the time they have to crack open a manual to solve their technical problem. A company's products and services may also elicit various emotions in users, like joy, relief, frustration, and anger. Part of designing for people means designing for their emotions.

Vocabulary: Designers and users don't always have the same vocabulary. When designing product interfaces and writing instructions for users, you need to know the words that users prefer so you can speak to them in their language. For instance, software developers may refer to errors by specific numbers or jargon terms that will not make sense to users. A technical writer would need to find a term that will work for the audience of a document.

Challenges: Users often face unnecessary challenges and frustrations when using products. Many of us have had the experience of a website that requires too many clicks to complete a simple task or an app that does not let you do a task you wish you could do. User-centered design professionals often call these frustrations “pain points,” and by finding out where products cause users challenges, designers can improve products to make them less frustrating. Users may face challenges due to the lack of a product or document, and understanding these challenges can help you innovate new solutions. Users may also experience challenges from their own situations. Some users may experience challenges based on differences in ability, culture, language, or literacy. By knowing where your users struggle, you can create products that best meet their needs and cause them the least amount of frustration.

Again, these seem like obvious considerations, but it is easy to lose sight of users, especially in big, complex businesses where product development takes months or even years and involves hundreds of people. User-centered design is challenging. Researching users takes time and resources that companies might be reluctant to spend (even though it pays off to say “not so fast” in the long run). Not everyone knows how to do user-centered design well. Further, when a company creates a product for millions or billions of users, like Facebook or TikTok, the company needs to understand not just one user group but many.

Despite these challenges, user-centered design has many benefits. Designing products and documents that users actually want and like using increases their chances of success. User-centered design research methods also help companies avoid the costly and time-wasting process of designing products and features that people don’t want. Applying user-centered design processes to technical documentation can help users better solve their problems with products and get more out of them, resulting in greater product satisfaction and fewer returns. It’s no wonder that companies such as Microsoft, Apple, Facebook, Netflix, Google, Disney, Sony, and many more emphasize user-centered design. Beyond chances for increased profits and product success, user-centered design provides an ethical approach to product design that considers users as people, enhancing their satisfaction, safety, and well-being. User-centered design can also increase empathy for users within the organization.

To be truly ethical, however, user-centered design needs to consider the full range of product users. Often, companies treat white, male, cisgender, and/or able-bodied users as representatives for everyone, meaning their products do not actually meet the needs of all users. For instance, cameras

are often calibrated to highlight Caucasian skin, resulting in an inferior product for non-white users. Technical instructions often rely on color for meaning without realizing that colorblind users struggle to distinguish between some colors. And many webpages present problems for users with disabilities, such as vision or hearing impairments (See Chapter 14 for more information on accessibility best practices). Accessible design accounts for the range of physical, mental, and emotional abilities of the full spectrum of users for a product, service, or written document (Dhoundiyal). Make sure your user-centered design process is also inclusive enough to meet the needs of BIPOC, LGBTQ+, and intercultural users, among others.

HOW DO YOU DO USER-CENTERED DESIGN?

Now that we have covered what user-centered design is, let’s jump into how you can implement user-centered design in your own projects. There are many opinions on how to successfully do user-centered design. At the end of the day, however, the “right” way to do user-centered design depends on your organization and specific user group. We encourage you to adopt any of the following methods that work within your context. As long as you remember to “center the user” at all times and think “not so fast” when asked to design/write something, you can’t go wrong. Here are some of the questions that you will need to focus on during your initial user research (see Chapter 12 for more information on user experience research).

QUESTIONS ABOUT USERS

The process begins by identifying central goals of the overall project (i.e., the item you are creating). Determining what these goals are is a matter of answering certain user-centered questions in a particular order.

Goals: Who is your user?

Identify the audience for your document. Try to capture information about them that goes beyond marketing or demographic categories. What are their needs and expectations?

Make sure not to overlook the full range of users. We don’t want a homogenous population.

Context of Use: Where is your user?

Explore the context where your user is going to be using the product or document that you create. Is it a noisy outdoor space with many distractions? Is it a quiet library room?

Write out the different tasks your user will need to complete.

Emotions are also an important aspect. Will the user be stressed or in crunch time while trying to use your product?

Tasks: How is your user going to use the product or document?

Make sure to GOOB (Get Out Of the Building) and shadow your users. You will learn so much more by watching people work and picking up on subtle things they do, both consciously and subconsciously. By watching people, you can learn the tasks they need to accomplish and the specific ways that they get work done.

Keep track of the language they are using in the natural environment; this will be the foundation for the vocabulary you use in your document.

Monitor the user for any “pain points” or frustrations where they are unable to do a task the way they expected. You may also see that users create workarounds and creative solutions to solve problems caused by your product or document.

Answering these questions involves using different approaches—or methods—for collecting information on your users in the context where they would use the item you will create for them.

METHODS

Initial user research is accomplished using three types of methods. The first method, **contextual inquiry**, involves visiting users where they will be using the product or service to gain first-hand experience. This method involves shadowing your users and even actively participating in their activity or “workflow” to deeply understand the process. For example, if you wanted to build an umbrella with a portable coffee maker described in scenario 1 of the introduction, you need to find your potential users and see how they handle their daily caffeine fix and weather mitigation. Only by going to the field, in this case their workplace or an outdoor park, can you directly see how they enjoy their coffee. By doing direct observation, you will probably find that the need to keep an umbrella directly overhead or held upside down by the handle when not in use makes it a poor candidate for doubling as a coffee maker.

The second method involves conducting **surveys** of your target user group. The questionnaire should have a mixture of closed ended questions (for standard comparisons across the group) and open-ended questions (for rich detail about problem areas). Surveys are helpful when you are unable to travel to see your users in person or you want to get input from a larger group of users (more than 20). Let’s look at how this applies to scenario 2 where the dog sitting company wants to add a restaurant delivery service with food catered to dogs. While contextual inquiry may get you a few

very passionate dog lovers, surveying your user group will reveal if this service is something that would be valuable for most dog owners of the app. Closed ended questions, like “How often have you wanted food delivery for your dog? Answer: Never, Sometimes, Often, Always,” and open-ended questions, like “Do you have any concerns about your dog’s current nutrition?” will show if implementing this service is a good idea.

The final user research method involves conducting **interviews** with individuals or hosting **focus groups** of users. The participants answer a series of open-ended questions designed to get their attitudes and opinions on a product or service. Interviews are useful for testing assumptions about what the product should even be or engaging users when it is not possible to visit them on site. For scenario 3, where you are asked to write a 300-page user manual, it could be valuable to bring users to your company where managers can directly observe the focus group and hear the truth: web help or a quick start guide work better for the user experience than a 300-page treatise. Interviews and focus groups can be very convincing proof that supports a wiser and more strategic approach to design and writing. One way to understand how all of these different elements come together and are used would be to examine an instance, or a case, involving such practices.

CASE STUDY: SEE IT! CLICK IT! FIX IT!

The following case study uses a service provider for municipal governments to illustrate the previous aspects of user-centered design principles and methods. “See It! Click It! Fix It!” or “SeeClickFix” was founded in 2009 as a non-emergency communication service between citizens and their local government (See <https://seeclickfix.com>). There are multiple ways for citizens to submit issues to their local government, including a webpage, smart phone application, or direct phone number. To submit their service request, local citizens chose one of these three options. Once they are connected, they verify their location, then select from a preset list of potential issues. If they are reporting using the website or application, they can also include a photo of the issue, title, and brief description. After the details are provided, the request is submitted to an internal system that routes the request to the appropriate local department (such as the Mayor’s office or Sanitation). The department then “acknowledges,” “opens,” “comments,” and “closes” the request. The multitude of ways that citizens are empowered to communicate with their local government on SeeClickFix showcases user-centered design

principles. The company takes a user-centered design approach in several additional ways through localization (the customization of a product or service to a specific location).

First, SeeClickFix customizes their service for each city that uses the product. Customization includes branding, with things like the city logo, icons, and color schemes (See Figure 13.2). Branding creates a sense of identity and trust between the local citizens and their government, likely leading to more positive emotions about the product.

A second user-centered design principle exhibited in the customization of the SeeClickFix applications is the inclusion of request categories that match the location. Sioux Falls, for example, has lots of snow fall so their service requests reflect that reality with a “Snow Alert Information” category. St. Petersburg, on the other hand, experiences strong tropical storms, so their categories include “Hurricane Center” and “Evacuation Zones.” The product considers the user’s context of use. Having categories that match each location makes it easier for users to find their specific issue, but beyond that it makes the application useful as a communication tool. If users from Sioux Falls, SD logged onto the application and saw hurricane-related requests, they would think “this tool was not designed for me.” Each town has categories that match their citizen’s needs, wants, and desires.

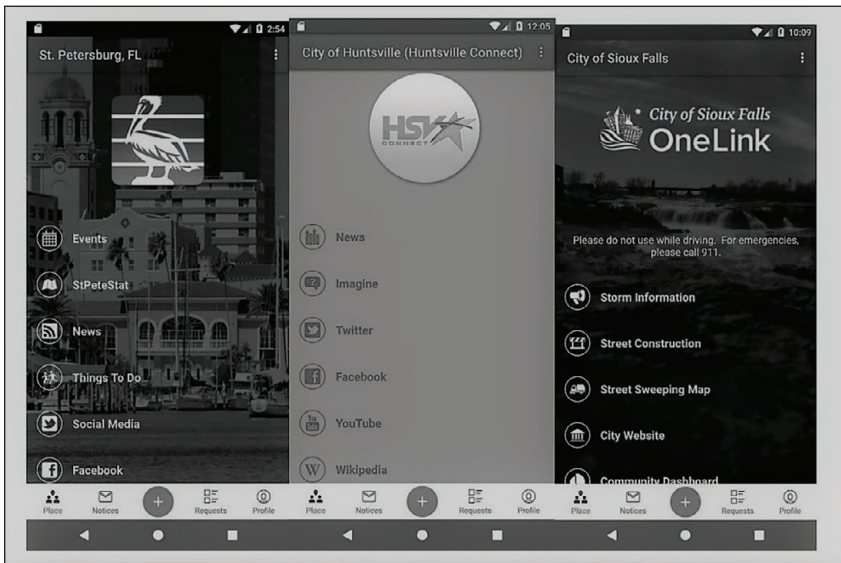


Figure 13.2: Customization for St. Petersburg, Florida, Huntsville, Alabama, and Sioux Falls, South Dakota on the SeeClickFix App. Source: Google Play. Accessed June 29, 2021.

SeeClickFix began as a product designed to meet a user need. Founder Ben Berkowitz created the product after his own frustrating experience getting graffiti removed in his neighborhood (Berkowitz & Gagnon), and the product retains that focus on helping users. Users can review the service and application directly in Google Play or the Apple Store. Based on these reviews, the SeeClickFix blog shares how they have updated their application.² For instance, in 2017 the product improved its color accessibility for the “7% of men and .4% of women” who “have difficulty distinguishing red from green” (Severson). SeeClickFix has also conducted user testing to “improve the functionality and SeeClickFix experience for all future iOS users” (Artsem). The web version updated its help centers in 2021 to improve usability and allow users to more quickly access information (“Changes to the CivicPlus help centers”). In this way, the product and services are focused on user needs, accessibility, and ease of use, making this an interesting case of user-centered design principles in action.

CONCLUSION

User-centered design can help avoid assumptions about what audiences need and help avoid creating products, such as documents, websites, infographics, etc., that individuals cannot use. By placing the user of a product at the center of the design process, user-centered design makes the processes of design, product development, or writing documents more effective and more successful. The ideas presented in this chapter introduced you to the core concepts and practices of user-centered design. By applying these ideas, you can gain a better understanding of your audience and create documents, designs, and even technologies they can more successfully use.

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² Since the time of writing, SeeClickFix has been updated by its parent company CivicPlus, and this blog is no longer available.

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TEACHER RESOURCES

OVERVIEW AND TEACHING STRATEGIES

User-centered design helps people create better products and technical documents. Starting product designs and the writing process with a focus on users helps ensure that you will meet their needs with your finished product. Consider these ideas when implementing user-centered design:

- Prioritize the needs of users over the ideas of the designer or writer.
- Learn information about user goals, context of use, emotions, vocabulary, and challenges.
- Conduct user research using methods like contextual inquiry, interviews, focus groups, and surveys to learn about your users.
- Remember that user-centered design is an iterative process that involves users from the beginning of design and throughout the design process.

While user-centered design research can be complex and time-consuming, students can take on basic user-centered design projects and processes in the technical writing classroom. For instance, they may conduct

interviews or a short survey about why users need a particular document that they are assigned to write. They might observe users complete work using a technical document (or without one, to find out how a document might help users complete their tasks). They might complete iterative document design projects that involve bringing in potential users at several stages of the writing process to help guide revision. Additionally, students might conduct user research and write a report about their findings as a written deliverable in the class.

DISCUSSION QUESTIONS

These discussion questions are designed to accompany the SeeClickFix case study presented earlier.

1. Using the SeeClickFix website, try and find a version of the application that is close to your hometown. Based on the branding and available categories, do you think the SeeClickFix team has used user-centered design principles while localizing their service for this community?
2. Thinking about this local community, who are the target user groups of the SeeClickFix system? Make sure not to overlook anyone!
3. As a group, think of a product or service that you are all familiar with. If you were tasked with creating a list of potential user issues for this product or service, which user-centered design methods would you use?