The Basics of User Experience Design

BY
INTERACTION DESIGN FOUNDATION



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Preface

If you're looking to gain an introduction into the world of user experience (UX) design—or maybe even freshen up your knowledge of the field—then this UX design book is the ideal place to start.

The sheer number of topics covered in UX design is mind-boggling: there's interaction design (the psychology of motion and feedback), design thinking (an iterative, empathy-based problem-solving process), and usability (how easily a product can be used), just to name a few. That's what makes the field so fascinating to so many people. Whether you are a business manager working on a new product, or an aspiring designer wanting to learn about user-centered design, the field of UX design has something to teach you.

On top of that, UX design is a booming industry worldwide. Job opportunities are increasing for UX designers like never before—an estimated 13% increase from 2010 to 2020. UX designer pays are also moving up, upwards of $110k in cities such as San Francisco and New York.

That's why we, at the Interaction Design Foundation, put together this ebook. In nine highly readable chapters, we'll cover a wide range of topics that everyone starting out in UX design should know. Each chapter acts as a mini crash course, introducing key concepts, best practices, and guidelines. At the end of each chapter, we'll summarize the key learning points in a section called "The Take Away".

If we've done a good job, each chapter should pique your interest in a specific topic under the giant umbrella of UX design. I hope you'll enjoy this short but informative ebook, and that this will be the beginning of a wondrous and never-ending journey of learning.



Mads Soegaard

Founder, Interaction Design Foundation

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CHAPTER 1

A Brief Introduction to User Experience (UX) Design

3 min read

User experience (UX) design can be a complicated and overwhelming field for newcomers, as it encompasses a wide range of topics (from accessibility to wireframing). Some of these topics overlap, while some of them complement one another. Therefore, it's important to come to a common and basic understanding of what the term “user experience” means in a design context.

Complexity and Perception

User experience design, as its name suggests, is about *designing* the ideal *experience* of *using* a service or product. As such, it can involve all types of products and services—think, for instance, about the design involved in a museum exhibition. However, in the main, the term *user experience design* is used in relation to websites, web applications and other software applications.

Since the second half of this century’s first decade, technologies have become increasingly complex, and the functionality of applications and websites has become far broader and far more intricate. Early websites were simple static pages that served up information to feed curious searchers; however, a few decades later, what we can find a wealth of online are sites that are interactive and offer a much richer feel for users.

You can add all the features and functionality that you like to a site or application, but the success of the project rides on a single factor: how the users feel about it.

> *"Humans have always been emotional and have always reacted to the artifacts in their world emotionally."*
> *—Alan Cooper, President of Cooper*

The questions that we as UX designers are concerned with are these:

- Does the site or application give the user value?
- Does the user find the site or application simple to use and navigate?
- Does the user actually enjoy using the site or the application?

A UX designer can say he's or she's doing a good job when the answer is "Yes!" to all of the above.

What is User Experience (UX)?

In general, user experience is simply how people feel when they use a product or service. In most cases, that product will be a website or an application of some form. Every instance of human-object interaction has an associated user experience, but, in general, UX practitioners are interested in the relationship between human users and computers and computer-based products, such as websites, applications and systems.

What is a UX Designer?

A UX designer is someone who investigates and analyzes how users feel about the products he or she offers them. UX designers then apply this knowledge to product development in order to ensure that the user has the best possible experience with a product.

UX designers conduct research, analyze their findings, inform other members of the development team of their findings, monitor development projects to ensure those findings are implemented, and do much more.

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Why Does UX Matter?

In times gone by, product design was simple; designers built stuff they thought was cool and that they hoped their clients would like. Unfortunately, there are two problems with that approach. The first is that, back then, there was far less competition for people's attention online. The second is that there's no consideration for the user of the product at all in that approach—the success or failure of a development project was down to luck as much as it was down to the judgement of the design team.

Focusing on UX enables design to focus on the user. It increases the chances of a project's success when it finally comes to market, not least because it doesn't gamble on the faith of users in taking to a product just because it's a brand name.

Where Can UX Design be Found?

UX Design can be found in a variety of project environments today, including:

- **Complex projects** — the more complicated the project, the more essential UX design is. Too many features handled the wrong way can deter users like nothing else.
- **Startups** — you may not find dedicated UX teams in a startup, but UX is always part of the objective. High-tech startups developing innovative projects need to understand how their users feel even more than established companies do.
- **Projects with decent budgets** — UX tends to get skipped in low-value projects, but any development project team with a decent budget will tend to allocate some of their financial resource to UX so as to ensure that the budget brings a return on investment.
- **Long projects** — the longer the project, the more resources it consumes; thus, UX becomes ever more important to delivering a return on the investment.

What's the Main Methodology for UX?

The main methodology used to guarantee the user experience in most projects is user-centered design. Simply put, user-centered design is all about designing with the users' needs and expected behaviors in mind. It's important for us as UX designers to remember that user-centered design is a

means of achieving good UX—and *not* the *only* methodology or tool that one can use to ensure optimal UX in a project.

The Take Away

UX design is all about guiding product development to shape how users feel when using our products. It's not a perfect method; sometimes, even with all the UX design know-how in the world behind it, a product will still fail. However, the appropriate use of UX design does offer a much higher chance that a product will be successful for our clients than products developed without the application of UX design principles.

Want to avoid the common pitfalls of UX design? Our course "**Become a UX Designer from Scratch**" will guide you—claim your spot now!

Become a UX Designer from Scratch

Beginner course

If you want to join one of the most rapidly growing fields in design, then look no further—**Become a UX Designer from Scratch** is the course for you. You'll learn the skills required to assist companies in delivering the right UX for their products through being taught tried-and-tested, industry standard techniques. You'll also discover how to create various UX deliverables with the help of downloadable templates. From customer journey maps to paper prototypes, this course will show you how to make use of such templates when creating your UX portfolio—something that will truly make an impact on your UX job applications. What's more, you'll gain access to video interviews with senior UX hirers and experts from companies such as Google and SAP—providing you insight into what skills and attributes will give you an advantage over fellow candidates during the UX hiring process. Wait no longer to kick-start your professional UX career!

Learn more about this course >

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How Course Takers Have Benefited



"The lessons are clear and easy to understand. The content in the lessons are thoroughly explained, and there's a good balance between video content vs. text content. This really is an intro or UX 101 course, which I really appreciated."

Seth Lemon, United States



"The strength of this course is its content and the way all the lessons are organized. The experience the instructors possess is also a huge advantage to the course and its members in understanding the design methods effectively."

Prudhvi Raj Midasala, India



"The course has given me a great overview of the foundation of UX design, the processes, players and understanding of the expectations of / on designers."

Barbara-Anne Tane, Australia

View the course curriculum >

About the Interaction Design Foundation

INTERACTION DESIGN FOUNDATION

We thought this would be a good time to properly introduce ourselves, now that you've had a taste of what our ebook has to offer!

Founded in 2002, the Interaction Design Foundation (IDF) is on a mission to provide accessible and affordable design education to people across the world, through open-source educational materials as well as online, self-paced UX Design courses.

By taking our courses, you'll benefit from educational materials developed by leading practitioners and academics from top-tier universities like Stanford and MIT. Our course certificates will therefore help you land your next job in design through being recognized by industry-leading corporations.

We also provide the opportunity to network with fellow designers through our Local Groups initiative — with meet-ups in over 84 countries across the globe! You can **find out more about us** and our mission if you're interested.

Because you've downloaded our ebook, we're going to give you a special offer: **3 months of free membership**. Become a member of the Interaction Design Foundation, receive all the benefits mentioned above, and start advancing your career today!

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CHAPTER 2

What is Design Thinking and Why Is It So Popular?

9 min read

Design thinking is not an exclusive property of designers—all great innovators in literature, art, music, science, engineering, and business have practiced it. So, why call it 'design thinking'? What's special about design thinking is that designers' work processes can help us systematically extract, teach, learn and apply these human-centered techniques to solve problems in a creative and innovative way — in our designs, in our businesses, in our countries, in our lives.

Some of the world's leading brands, such as Apple, Google, Samsung and GE, have rapidly adopted the design thinking approach. What's more, design thinking is being taught at leading universities around the world, including d.school, Stanford, Harvard and MIT. Even so, do you know what design thinking is, and why it's so popular? Here, we'll cut to the chase and tell you what it is and why it's so popular.

What is Design Thinking?

Design thinking is an iterative process in which we seek to understand the user, challenge assumptions, and redefine problems in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. At the same time, design thinking provides a solution-based approach to solving problems. It is a way of thinking and working as well as a collection of hands-on methods.

Design thinking revolves around a deep interest in developing an understanding of the people for whom we're designing the products or services. It helps us observe and develop *empathy* with the target user. Design thinking helps us in the process of questioning: questioning the problem, questioning the assumptions, and questioning the implications. Design thinking is extremely useful in tackling problems that are ill defined or unknown, by re-framing the problem in human-centric ways, creating many *ideas* in brainstorming sessions, and adopting a hands-on approach in *prototyping* and *testing*. Design thinking also involves ongoing experimentation: sketching, *prototyping*, *testing*, and trying out concepts and ideas.

Design Thinking's Phases

There are many variants of the design thinking process in use today, and they have from three to seven phases, stages, or modes. However, all variants of design thinking are very similar—they all embody the same principles, which were first described by Nobel Prize laureate Herbert Simon in *The Sciences of the Artificial* in 1996. Here, we will focus on the five-phase model, which the Hasso-Plattner Institute of Design at Stanford (aka 'd.school') proposed. We've chosen d.school's approach because they're at the forefront of applying and teaching design thinking. The five phases of design thinking, according to d.school, are as follows:

- Empathize – with your users
- Define – your users' needs, their problem, and your insights
- Ideate – by challenging assumptions and creating ideas for innovative solutions
- Prototype – to start creating solutions
- Test – solutions

It is important to note that the five phases, stages, or modes are not always sequential. They do not have to follow any specific order. What's more, they can often occur in parallel and repeat iteratively. As such, you should not envision the phases as a hierarchal or step-by-step process. Instead, you should understand it as an overview of the modes or phases that contribute to an innovative project, rather than sequential steps.

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The Problem with Ingrained Patterns of Thinking

Sometimes, the easiest way to understand something intangible, such as design thinking, is by understanding what it is *not*.

Humans naturally develop patterns of thinking modelled on the repetitive activities and commonly accessed knowledge. These assist us in quickly applying the same actions and knowledge in similar or familiar situations, but they also have the potential to prevent us from quickly and easily accessing or developing new ways of seeing, understanding, and solving problems.

These patterns of thinking are often referred to as schemas, which are organized sets of information and relationships between things, actions, and thoughts that are stimulated and initiated in the human mind when we encounter some environmental stimuli. A single schema can contain a vast amount of information. For example, we have a schema for dogs which encompasses the presence of four legs, fur, sharp teeth, a tail, paws, and a number of other perceptible characteristics. When the environmental stimuli match this schema—even when there is a tenuous link or only a few of the characteristics are present—the same pattern of thought enters the mind.

As these schemas are stimulated automatically, this process can obstruct a more fitting impression of the situation or prevent us from seeing a problem in a way that will enable a new problem-solving strategy. Rising above this 'fog', or—more aptly—floating up and away from this confining compartment, calls for us to be innovative in our approach. Unsurprisingly, innovative problem solving is also known as 'thinking outside of the box'.

An Example of Problem solving: The Encumbered Vs. The Fresh Mind

Thinking outside of the box can provide an innovative solution to a sticky problem. However, thinking outside of the box can be a real challenge as we naturally develop patterns of thinking that are modelled on the repetitive activities and commonly accessed knowledge we surround ourselves with. It takes something to break away from a situation where we're too closely involved

to be able to find better possibilities. Still, that is what we must do.

To illustrate how a fresh way of thinking can create unexpectedly good solutions, let's look at a famous story. Some years ago, an incident occurred where a truck driver had tried to pass under a low bridge. Alas, he failed, and the truck became firmly lodged under the bridge. The driver was unable to continue driving through or reverse out.

The story goes that as the truck became stuck, it caused massive traffic problems, which resulted in emergency personnel, engineers, firefighters, and truck drivers gathering to negotiate various solutions so as to dislodge the truck.

Emergency workers were debating whether to dismantle parts of the truck or chip away at parts of the bridge. Each spoke of a solution which fitted within his or her respective level of expertise. In the heat of the emergency, all parties carried on with their ways of viewing the problem, including the truck driver, whose initial dismay over a scraped roof had turned into a deeper concern.

A boy walking by and witnessing the intense debate looked at the truck, at the bridge, then looked at the road and said nonchalantly, "Why not just let the air out of the tires?" to the absolute amazement of all the specialists and experts trying to unpick the problem.

When the solution was tested, the truck was able to drive free with ease, having suffered only the damage caused by its initial attempt to pass underneath the bridge. Whether or not the story actually happened in real life, it symbolizes the struggles we face where oftentimes the most obvious solutions are the ones hardest to come by because of the self-imposed constraints we work within.

Challenging our assumptions and everyday knowledge is often difficult for us humans, as we rely on building patterns of thinking in order not to have to learn everything from scratch every time. We rely on doing everyday processes more or less unconsciously—for example, when we get up in the morning, eat, walk, and read—but also when we assess challenges at work and in our private lives. Especially experts and specialists rely on their solid thought patterns, patterns that serve them well in their respective fields, not to mention the people to whom they deliver their skills. Even so, it can

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be very challenging and difficult for experts to start questioning their knowledge. Pride aside, it can prove more than a little disconcerting to think that many years of education and practical experience can hinder rather than help in dealing with a problem.



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The freshness of a child's perspective, untainted by professional specialization, can save the day when a problem gets as big as the one above. Happily, getting that freshness doesn't involve something as drastic as trying to become a child again.

Design Thinking or 'Outside the Box' Thinking

Design thinking is often referred to as 'outside the box' thinking, as designers are attempting to develop new ways of thinking that do not abide by the dominant or more common problem-solving methods.

At the heart of design thinking is the intention to improve products by analysing and understanding how users interact with products and investigating the conditions in which they operate. At the heart of design thinking lies also the interest and ability to ask significant questions and challenge assumptions. One element of outside the box thinking is to falsify previous assumptions, i.e., to make it possible to prove whether they are valid or not. Once we have questioned and investigated the conditions of a problem, the solution-generation process will help us produce ideas that reflect the genuine constraints and facets of that particular problem. Design thinking offers us a means of

digging that bit deeper; it helps us do the right kind of research and to prototype and test our products and services so as to uncover new ways of improving the product, service, or design.

Grand Old Man of User Experience, Don Norman, who also coined the very term User Experience, explains what Design thinking is and what's so special about it:

> *"…the more I pondered the nature of design and reflected on my recent encounters with engineers, business people and others who blindly solved the problems they thought they were facing without question or further study, I realized that these people could benefit from a good dose of design thinking. Designers have developed a number of techniques to avoid being captured by too facile a solution. They take the original problem as a suggestion, not as a final statement, then think broadly about what the real issues underlying this problem statement might really be (for example by using the 'Five Whys' approach to get at root causes)."*
>
> *– Don Norman, Rethinking Design Thinking*

Design Thinking is an Essential Tool—and A Third Way

The design process often involves a number of different groups of people in different departments; for this reason, developing, categorizing, and organizing ideas and problem solutions can be difficult. One way of keeping a design project on track and organizing the core ideas is with a design thinking approach.

Tim Brown, CEO of the celebrated innovation and design firm IDEO, shows in his successful book, *Change by Design* that design thinking is firmly based on generating a holistic and emphatic understanding of the problems that people face, and that it involves ambiguous or inherently subjective concepts such as emotions, needs, motivations, and drivers of behaviors. This contrasts with a solely scientific approach, where there's more of a distance in the process of understanding and testing the user's needs and emotions—e.g., via quantitative research. Tim Brown sums up that design thinking is a third way: design thinking is essentially a problem-solving approach, crystallized in the field of design, which combines a holistic user-centered perspective with rational

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and analytical research with the goal of creating innovative solutions.

Science and Rationality in Design Thinking

Some of the scientific activities will include analyzing how users interact with products and investigating the conditions in which they operate: researching user needs, pooling experience from previous projects, considering present and future conditions specific to the product, testing the parameters of the problem, and testing the practical application of alternative problem solutions. Unlike a solely scientific approach, where the majority of known qualities, characteristics, etc. of the problem are tested so as to arrive at a problem solution, design thinking investigations include ambiguous elements of the problem to reveal previously unknown parameters and uncover alternative strategies.

After arriving at a number of potential problem solutions, the selection process is underpinned by rationality. Designers are encouraged to analyze and falsify these problem solutions so that they can arrive at the best available option for each problem or obstacle identified during each phase of the design process.

With this in mind, it may be more correct to say that design thinking is not about thinking out of the box, but on its edge, its corner, its flap, and under its bar code, as Clint Runge put it. (Clint Runge is Founder and Managing Director of Archrival, a distinguished youth marketing agency, and adjunct Professor at University of Nebraska-Lincoln.)



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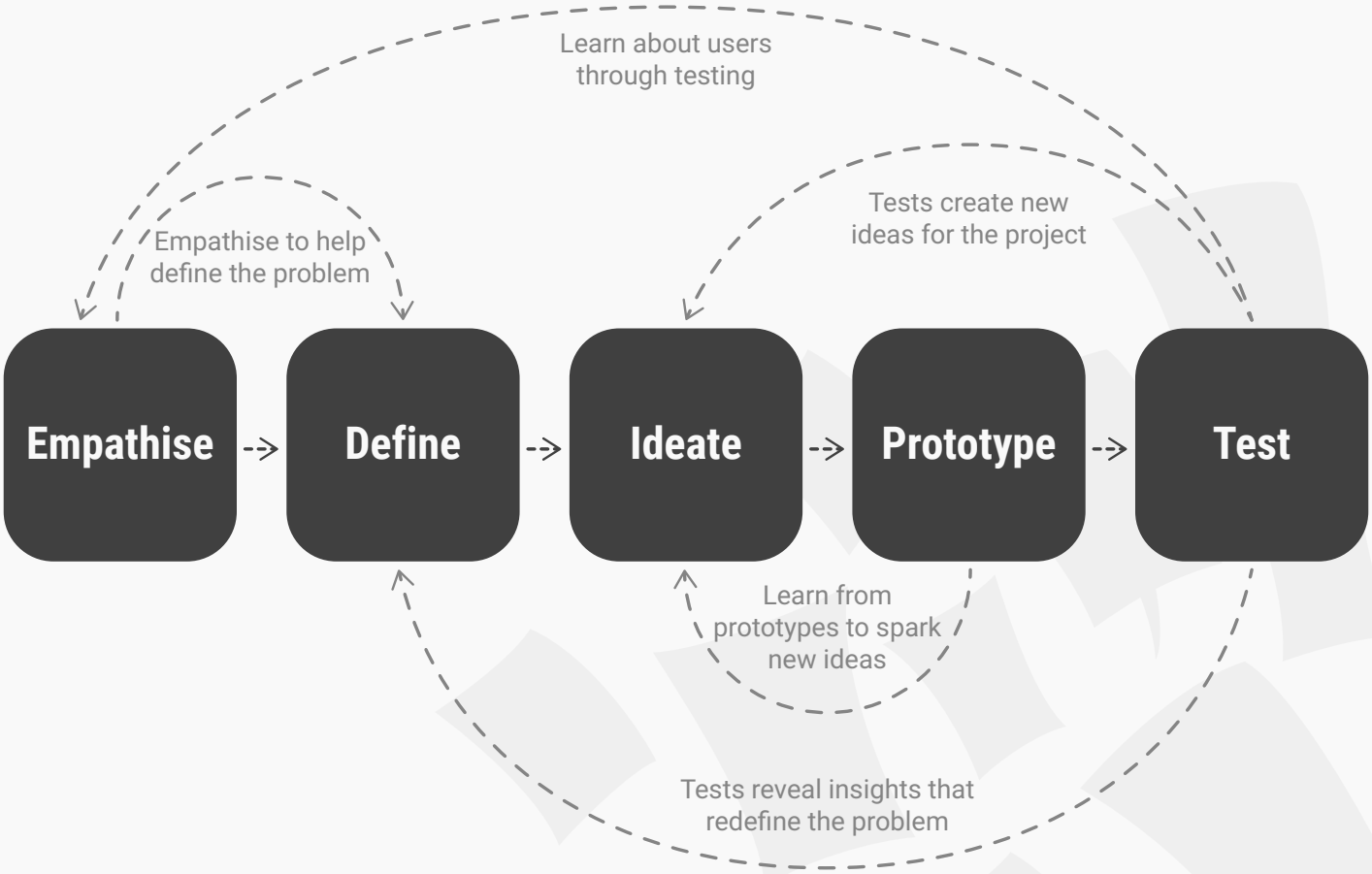
Wise words—whatever helps you gain that needed perspective, assume that position.

Generating Creative Ideas and Solutions by Holistically Understanding Humans

With a solid foundation in science and rationality, design thinking seeks to generate a holistic and emphatic understanding of the problems that people face. Design thinking tries to empathize with human beings. That involves ambiguous or inherently subjective concepts such as emotions, needs, motivations, and drivers of behaviors. The nature of generating ideas and solutions in design thinking means this approach is typically more sensitive to and interested in the context in which users operate and the problems and obstacles they might face when interacting with a product. The creative element of design thinking is found in the methods used to generate problem solutions and insights into the practices, actions, and thoughts of real users.

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Design Thinking is an Iterative and Non-linear Process



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As you can see, there's plenty of flow between the steps.

Design thinking is an iterative and non-linear process. This simply means that the design team continuously use their results to review, question, and improve their initial assumptions, understandings and results. Results from the final stage of the initial work process inform our understanding of the problem, help us determine the parameters of the problem, enable us to redefine the problem, and, perhaps most importantly, provide us with new insights so we can see any alternative solutions that might not have been available with our previous level of understanding.

Design Thinking is for Everybody

Tim Brown believes that design thinking techniques and strategies of design belong at *every* level of business. Design thinking is not only for designers but also for creative employees, freelancers, and leaders who seek to infuse design thinking into every level of an organization, product, or service in order to drive new alternatives for business and society.

Design thinking is essentially a problem-solving approach, crystallized in the field of design, which combines a user-centered perspective with rational and analytical research with the goal of creating innovative solutions.

The Take Away

Design thinking is essentially a problem-solving approach specific to design, which involves assessing known aspects of a problem and identifying the more ambiguous or peripheral factors that contribute to the conditions of a problem. This contrasts with a more scientific approach where the concrete and known aspects are tested in order to arrive at a solution. Design thinking is an iterative process in which knowledge is constantly being questioned and acquired so it can help us redefine a problem in an attempt to identify alternative strategies and solutions that might not be instantly apparent with our initial level of understanding. Design thinking is often referred to as 'outside the box thinking', as designers are attempting to develop new ways of thinking that do not abide by the dominant or more common problem-solving methods – just like artists do. At the heart of design thinking is the intention to improve products by analyzing how users interact with products and investigating the conditions in which they operate. Design thinking offers us a means of digging that bit deeper to uncover ways of improving user experiences.

Companies are facing ill-defined and complex problems every day—and bringing design thinking into your workplace can be a game changer. Our online course "**Design Thinking: The Beginner's Guide**" is one of our most popular (and as a result, gets fully booked *really* quickly!), because the iterative, empathy-based process translates so well into so many problems. Make sure you don't miss out on our next intake!

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Design Thinking: The Beginner's Guide

Beginner course

The world's leading companies, such as Apple, Google and Samsung, are already using the design thinking approach—because they know it's the way forward when it comes to innovation and product success. Through **Design Thinking: The Beginner's Guide**, you will deep dive into the five phases of this paradigm-shifting approach to problem-solving—empathize, define, ideate, prototype, and test. By receiving detailed guidance on problem-solving activities ranging from ideation techniques—such as brainstorming and using analogies—to ways of gathering feedback from your prototypes, you'll be able to download many templates involved and effectively use them in your work. Get ready to unpack, explore, and master design thinking—using it to set yourself apart and unlock the next stage of your professional life.

Learn more about this course >

How Course Takers Have Benefited



"The course is very comprehensive and offers a good balance of mediums to learn from."

Reid Dickson, United States



"I enjoyed all of the tools available for download. It helped me easily share this information with others who were interested in design thinking."

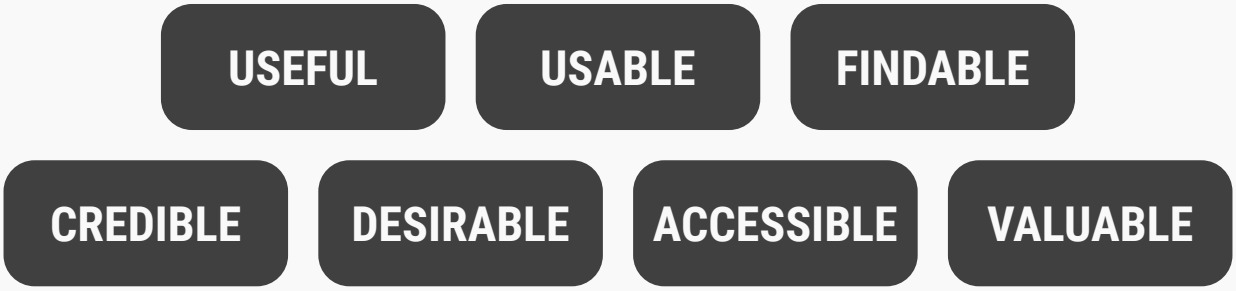
Jenna Franklin, United States



"There were lots of real world examples particularly from the instructors' work."

Gillian Tyler, Australia

View the course curriculum >



CHAPTER 3

The 7 Factors that Influence User Experience

4 min read

User Experience (UX) is critical to the success or failure of a product in the market, but what do we mean by UX? All too often, UX is confused with usability, which describes *how easy* a product is to use. While it is true that UX as a discipline began with usability, UX has grown to accommodate much more than usability, and paying attention to *all* facets of UX in order to deliver successful products to market is vital.

> *"To be a great designer, you need to look a little deeper into how people think and act."*
> *— Paul Boag, Co-Founder of Headscape Limited*

There are seven factors that describe user experience, according to Peter Morville, a pioneer in the UX field who has written several best-selling books and advises many Fortune 500 companies on UX. Morville arranged the seven factors into the 'User Experience Honeycomb', which became a famous tool from which to understand UX design.

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The 7 factors are:

1. Useful
2. Usable
3. Findable
4. Credible
5. Desirable
6. Accessible
7. Valuable

Let's take a look at each factor in turn and what it means for the overall user experience:

1. Useful

If a product isn't useful to someone, why would you want to bring it to market? If it has no purpose, it is unlikely to be able to compete for attention alongside a market full of purposeful and useful products. It's worth noting that 'useful' is in the eye of the beholder, and things can be deemed 'useful' if they deliver non-practical benefits such as fun or aesthetic appeal.

Thus, a computer game or sculpture may be deemed useful even if neither enables a user to accomplish a goal that others find meaningful. In the former case, a teenager may be using the game to vent angst after a hard exam at college; in the latter, an art gallery visitor may 'use' the sculpture to educate herself on the artist's technique or tradition, gaining spiritual pleasure at the same time from viewing it.

2. Usable

Usability is concerned with enabling users to achieve their end objective with a product effectively and efficiently. A computer game which requires three sets of control pads is unlikely to be usable as people, for the time being at least, only tend to have two hands.

Products can succeed if they are not usable, but they are less likely to do so. Poor usability is often associated with the very first generation of a product—think the first generation of MP3 players,

which have since lost their market share to the more usable iPod. The iPod wasn't the first MP3 player, but it was the first—in a UX sense, at least—*truly usable* MP3 player.

3. Findable

Findable refers to the idea that the product must be easy to find, and in the instance of digital and information products, the content within them must be easy to find, too. The reason is quite simple: if you cannot find the content you want in a website, you're going to stop browsing it.

If you picked up a newspaper and all the stories within it were allocated page space at random, rather than being organized into sections such as Sport, Entertainment, Business, etc., you would probably find reading the newspaper a very frustrating experience. The same is true of hunting down LPs in a vintage music store—while some may find rifling through randomly stocked racks of assorted artists' offerings part of the fun and ritual, many of us would rather scan through alphabetically arranged sections, buy what we want, get out and get on with our day. Time tends to be precious for most humans, thanks largely to a little factor called a 'limited lifespan'. Findability is thus vital to the user experience of many products.

4. Credible

Twenty-first-century users aren't going to give you a second chance to fool them—there are plenty of alternatives in nearly every field for them to choose a credible product provider. They can and will leave in a matter of seconds and clicks unless you give them reason to stay.

Credibility relates to the ability of the user to trust in the product that you've provided—not just that it does the job it is supposed to do, but also that it will last for a reasonable amount of time and that the information provided with it is accurate and fit-for-purpose.

It is nearly impossible to deliver a user experience if the users think the product creator is a lying clown with bad intentions—they'll take their business elsewhere instead, very quickly and with very clear memories of the impression that creator left in them. Incidentally, they may well tell others, either in passing or more intentionally, in the form of feedback, so as to warn would-be customers, or 'victims' as they would view them.

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5. Desirable

Skoda and Porsche both make cars. Both brands are, to some extent, useful, usable, findable, accessible, credible and valuable—but Porsche is much more desirable than Skoda. This is not to say that Skoda is undesirable; they have sold a lot of cars. However, given a choice of a new Porsche or Skoda for free, most people will opt for the Porsche.

Desirability is conveyed in design through branding, image, identity, aesthetics, and emotional design. The more desirable a product is, the more likely it is that the user who has it will brag about it and create desire in other users. Yes, we're talking about envy here; whilst we can salute Skoda's indomitable spirit—not least for having made very innovative strides and made the most of resources behind the Iron Curtain—we'll tend to yearn after the other car here, the one that screams 'Look at me!' and is pure power and affluence on four wheels.



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Porsche, founded in 1931, is synonymous with power and style. As a brand, it embodies opulence and glamour, commanding heads to turn on chic, urban streets. Skoda, despite having a nearly 40-year head start in the business, doesn't pluck the same chord in the popular psyche.

6. Accessible

Sadly, accessibility often gets lost in the mix when creating user experiences. Accessibility is about providing an experience which can be accessed by users with a full range of abilities—this includes those who are disabled in some respect, such as the hearing, vision, motion, or learning impaired.

Designing for accessibility is often seen by companies as a waste of money—the reason being the enduring misconception that people with disabilities make up a small segment of the population. In fact, according to the census data in the United States, at least 19% of people had a disability in 2010, and it is likely that this number is higher in less developed nations.

That's one in five people in the audience for your product who may not be able to use it if it's not accessible—or 20% of your total market!

It's also worth remembering that when you design for accessibility, you will often find that you create products that are easier for everyone to use, not just those with disabilities. Don't neglect accessibility in the user experience; it's not just about showing courtesy and decency—it's about heeding common sense, too!

Finally, accessible design is now a legal obligation in many jurisdictions, such as the EU. Failure to deliver accessibility in designs may result in fines. Sadly, this obligation is not being enforced as often as it should be; all the same, the road of progress lies before us.

7. Valuable

Finally, the product must deliver value. It must deliver value to the business which creates it and to the user who buys or uses it. Without value, it is likely that any initial success of a product will eventually corrode as the realities of natural economics start to undermine it.

As designers, we should bear in mind that value is one of the key influences on purchasing decisions. A $100 product that solves a $10,000 problem is one that is likely to succeed; a $10,000 product that solves a $100 problem is far less likely to do so.

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The Take Away

The success of a product depends on more than utility and usability alone. Products which are usable, useful, findable, accessible, credible, valuable, and desirable are much more likely to succeed in the market place.

Now that you know the 7 factors that influence user experience, how do you then optimise your product or service to create the best user experience? Learn how to offer a competition-beating user experience by taking our course "**User Experience: The Beginner's Guide**".

User Experience: The Beginner's Guide

Beginner course

User experience, or UX, has been a buzzword since about 2005—and customer intelligence agency Walker predicts that it will overtake price and product as the key brand differentiator by 2020. Chances are, you've heard of the term, or even have it written somewhere on your portfolio. But there's also a good chance that you occasionally feel unsure of what the term "user experience" actually encompasses. Through **User Experience: The Beginner's Guide**, you will gain a thorough understanding of the various design principles that come together to create a user's experience when using a product or service. You'll learn the value UX design brings to a project, and what areas you must consider when you want to design outstanding user experiences. This course is a great introduction to the ever-evolving and growing field of user experience, and a fantastic way to start the next chapter of your career progression.

Learn more about this course >

How Course Takers Have Benefited



"I learnt a good deal from various lesson items and design examples. I also appreciate how repeating key topics helped me memorise them and kept me well involved. Thank you."

Veena Sankaranarayanan, Australia



"Perfect balance between knowledge, capacity to transmit the knowledge and sense of humor."

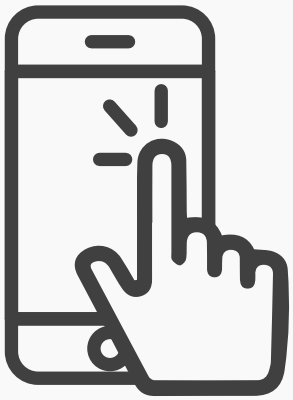
Juan Xabier Monjas Campandegui, Spain



"I liked how the instructors were able to link what they are saying to real life scenarios, it helped to consolidate learning for me."

Prince Onyeabor, Nigeria

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CHAPTER 4

An Introduction to Usability

5 min read

Usability and user experience (UX) are not the same thing: the usability of a product is a crucial part that shapes its UX, and hence it falls under the umbrella of UX. While many might think that usability is solely about the 'ease of use' of a product, it's actually more than that.

The **ISO 9421-11 standard on usability** describes it as: "The extent to which a product can be used by specified users to achieve specified goals, with effectiveness, efficiency and satisfaction in a specified context of use." Usability is hence more than just about whether users can perform tasks easily (ease of use); it's also concerned with user satisfaction—for a website to be usable, it has to be engaging and aesthetically pleasing, too.

Why Does Usability Matter?

Before we delve deeper into what usability entails, addressing the importance of usability is vital. Usability matters because if users cannot achieve their goals efficiently, effectively and in a satisfactory manner, they are likely to seek an alternative solution to reach their goals. Moreover, for websites and apps, alternative solutions are abundant and easy to find. Quite simply: if your product is not usable, its UX will be bad, and users will leave you for your competitors. As designers who are looking to develop products with longevity, we need to ensure that those products are usable; otherwise, we'll risk losing users to our competitors.

In fact, a **2015 joint research by Huff Industrial Marketing, KoMarketing and BuyerZone** on B2B

web users showed that 46% of users leave a website because they can't tell what the company does (i.e., a lack of effective messaging), 44% of users leave due to lack of contact information, and 37% of users leave due to poor design or navigation. This goes to show the potential harm bad usability can bring to your website.

> *"We tend to be distracted by the voices in our own heads telling us what the design should look like."*
> *— Michael Bierut, Partner at Pentagram Design*

Usability is the outcome of a user-centered design process. That is a process which examines how and why a user will adopt a product and seeks to evaluate that use. That process is an iterative one and seeks to improve following each evaluation cycle continuously.

The 5 Characteristics of Usable Products

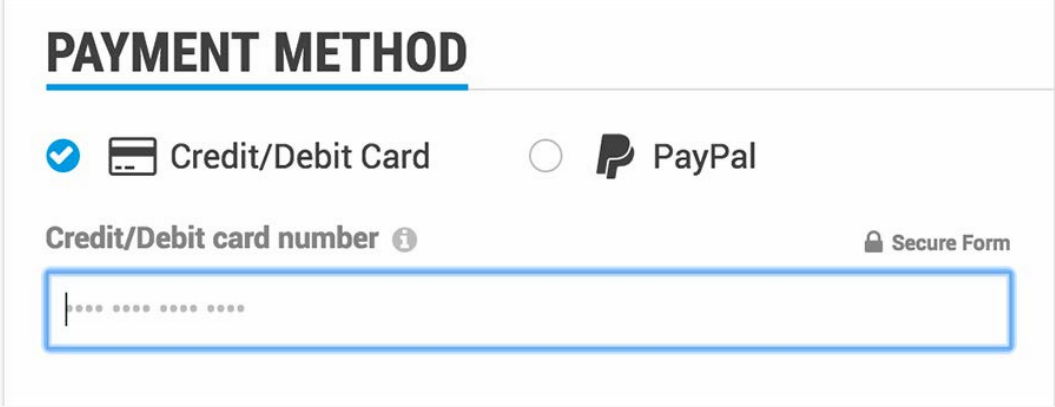
Whitney Quesenberry, the UX and Usability Expert and former President of the Usability Professional's Association (UXPA), offers 5 criteria that a product must meet so as to be usable:

1. Effectiveness
2. Efficiency
3. Engagement
4. Error Tolerance
5. Ease of Learning

1. Effectiveness

Effectiveness is about whether users can complete their goals with a high degree of accuracy. Much of the effectiveness of a product comes from the support provided to users when they work with the product; for example, fixing a credit card field so that it only accepts a valid credit card number entry can reduce data entry errors and help users perform their task correctly. There are many different ways to provide support—the key is to be as informative as possible in a meaningful way to the user.

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In our payment form, we restrict the number of digits you can enter into the credit card number field so as to reduce data entry errors.

You might also want to examine the language used in your product—the clearer and simpler that language is (ideally 6th-grade level), the more likely that your information will have the right impact on the user. This doesn't mean dumbing down your language gratuitously so as to patronize your users; it just means keeping an appropriate style that errs on the simpler side for clarity's sake. Using the right level of technicality—for example, reducing the number of technical coding terms for a design-focused website—also helps make your messages clearer and meaningful to users. Want to know how simple your copy is? Check out **Hemingway App**, a useful tool that analyzes your text and assesses its readability. If in doubt, keep it simple and direct; unless you're actually selling a ghost-writing service, you will not win over users with 'impressive' prose.

Redundancy in navigation can sometimes be beneficial; if users have multiple paths to their objective, they are more likely to get there. This may reduce the overall efficiency of the process, however. So, always consider the frustration of a user who can't find the way forward, and strike a balance between that and the 'overkill' of several alternatives.

2. Efficiency

Effectiveness and efficiency have come to be blurred in the mind. They are, however, quite different from a usability perspective. Efficiency is all about speed. How fast can the user get the job done?

You'll want to examine the number of steps (or indeed clicks/keystrokes) needed to achieve the objective; can they be reduced? This will help develop efficient processes. Clearly labeled navigation buttons with obvious uses will also help, as will the development of meaningful

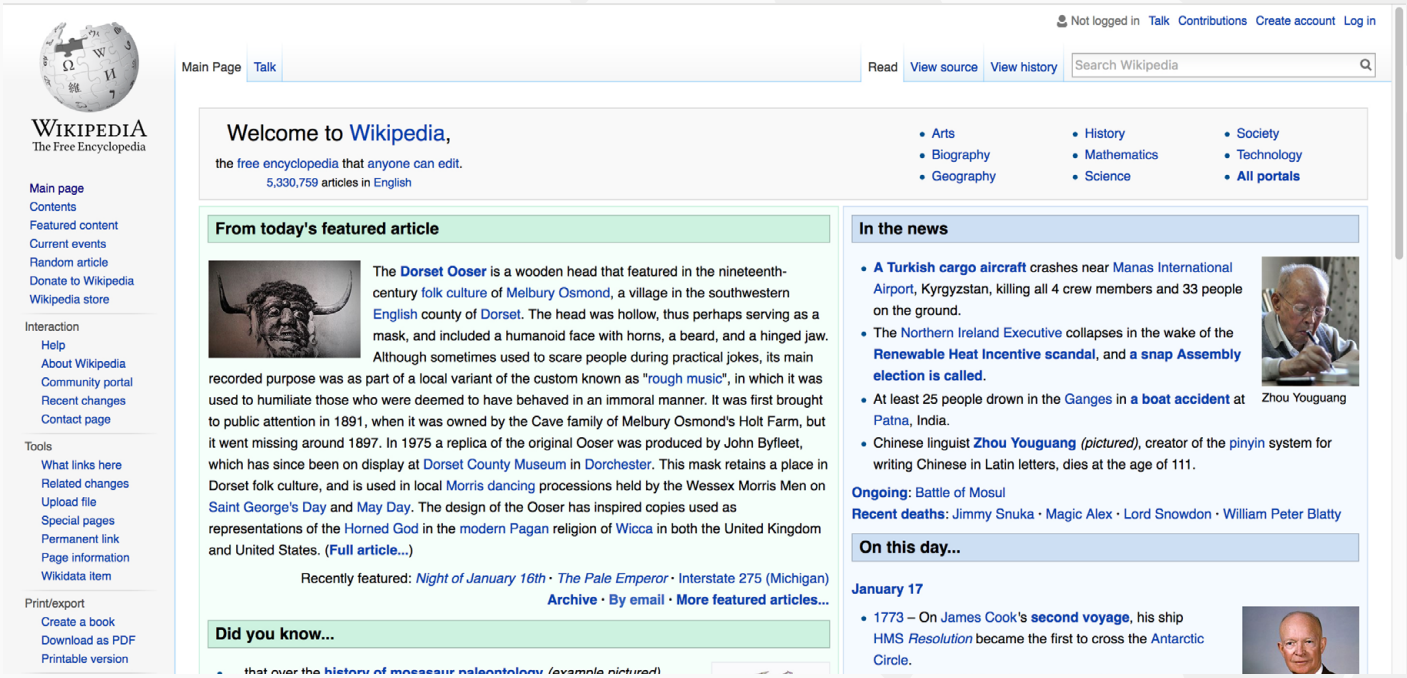
shortcuts (for instance, think about the number of hours you've saved using Ctrl+C and Ctrl+V to copy and paste text).

So as to maximize efficiency, you need to examine how your users prefer to work—are they interacting via a smartphone or a desktop computer with a large keyboard and mouse? The two require very different approaches to navigation.

3. Engagement

Engagement is a bit of a buzzword, but if you cut through the fluff, you'll find that engagement occurs when the user finds the product pleasant and gratifying to use. Aesthetics matter here, and it's why many companies invest a small fortune in graphic design elements—but they're *not* the *only* factors in engagement.

Engagement is not only about looking nice but also about looking *right*. Proper layouts, readable typography and ease of navigation all come together to deliver the right interaction for the user and make it engaging. Looking nice isn't everything, as Wikipedia (famous for its ultra-basic design) proves.



Wikipedia's iconic layout may not win over some aesthetics, but one reason for its success is its readability, thus satisfying curious e-navigators who want to get the lowdown on a subject without being slowed down by art-saturated, scenic 'detours'.

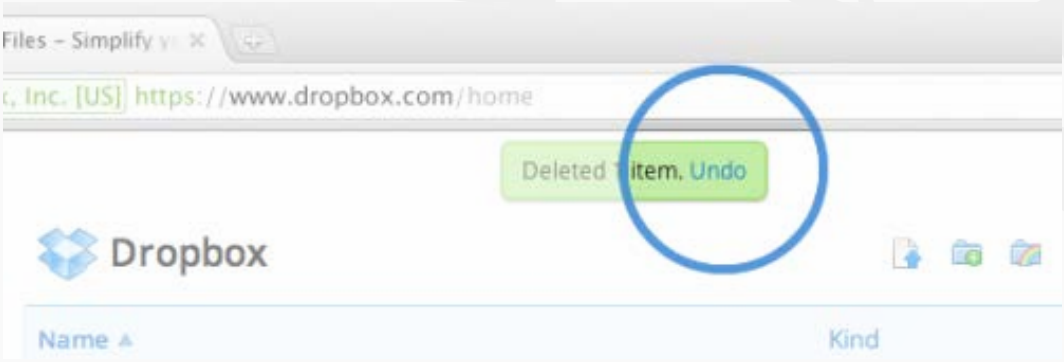
4. Error Tolerance

It seems unlikely that, given the need to gain any degree of sophistication or complexity, you can completely eliminate errors in products; in particular, digital products may be error prone because of the ecosystem in which they dwell—an ecosystem which is beyond the designer's control.

However, the next best thing is to minimize errors from occurring and to ensure that your users can easily recover from an error and get back to what they are doing. This is what we call 'error tolerance'.

Promoting error tolerance, according to Whitney Quesenberry, requires:

- Restricting opportunities to do the wrong thing. Make links/buttons clear and distinct; keep language clear and simple; don't use jargon unless absolutely necessary, and keep dependencies in forms or actions together. Also, limit options to correct choices if you can, and give examples and support when asking people to provide data.
- Offering the opportunity to 'redo'. Give users a way to reset what they've just done and go back and start again. Similarly, provide a clearly visible 'undo' function. Consider the amount of data a user stands to lose by inadvertently deleting items. That 'railing' or 'safety ledge' will keep users from panicking.
- Assuming everyone is going to do things you don't expect them to do. Then, either facilitate that or offer advice/support to get back on the right path. This sort of recovery measure also makes your site appear more human and trustworthy in that it shows you appreciate the human tendency to make mistakes and empathize with your users.



Dropbox has an undo function, in case users accidentally delete items in their folders. This is the sort of safety ledge that catches human nature just in time before users go into panic mode.

5. Ease of learning

If you want a product to be used regularly, then you want users to be able to learn their way around that product easily—to the extent that it comes as second nature when they use it again.

You also need to accommodate ease of learning when releasing new functionality and features; otherwise, a familiar and happy user may quickly become frustrated with your latest release. This is something that tends to happen a lot on social networks; whenever a new set of features is released, they tend to be greeted with howls of outrage from comfortable users. And this is true even when the new features are easy to learn. A classic case occurred in early 2012, when Facebook's Timeline format became the new standard for user profiles. Although hordes of users bemoaned the change—which to many of them seemed needless—Facebook wisely phased in the introduction so that users had plenty of time to switch over.

The best way to support ease of learning is to design systems that match a user's *existing* mental models. A mental model is simply a representation of something in the real world and how it is done from the user's perspective. It's why virtual buttons look a lot like real buttons – we know that we push buttons; therefore, we tap virtual ones on touchscreens or mouse-click them. The form elicits the appropriate action in the user, hence making it easy to learn.

Utility + Usability = Usefulness

When you're designing for usability, thinking about utility is important, too. While usability is concerned with making functions easy and pleasant to use, utility is about providing functions that users need in the first place.

Only when usability is combined with utility do products become *useful* to users. A mobile payment app could provide the most usable feature of adding the people around you on Facebook; nevertheless, because most users of that app wouldn't need that feature, it's going to be useless to them. All your effort towards building the most user-friendly feature could go to waste if that feature isn't needed.

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The Take Away

Usability is more than just ease of use. You need to ensure designs are efficient, effective, engaging, easy to learn and error tolerant if you want them to succeed. Of course, there are limitations on the value of usability. For example, sometimes you will have to make trade-offs so as to ensure economic viability. However, when there is no such conflict, usability should be the priority. Combining usability with utility will make your offering useful, in theory; all the same, you should pay careful attention to what the users actually need, as opposed to what you think might be an attractive feature for them to enjoy.

Want to learn the best practices in usability? You won't want to miss our course "**The Practical Guide to Usability**"—enroll now before it closes!

The Practical Guide to Usability

Beginner course

We all know that every product or website should be simple and pleasurable to use… but this is easier said than done—designing an effective, efficient, and enjoyable product is unfortunately not achieved by good intentions alone. In our course, **The Practical Guide to Usability**, you will learn some of the most important concepts, methods, best practices and theories from successful designers in our industry. By immersing yourself in the "how" of designing products with good usability, you'll come out the other side being able to design products that blend your good intentions with awesome usability, helping you to unlock greater user growth, retention and satisfaction.

Learn more about this course >

How Course Takers Have Benefited



"Enjoyed the rigorous of this course and it showed more bridging of ideas and theories than I expected to see which was great."

Matthew Worner, Malta



"The whole concept of integrating testing with production, and, in particular, the idea of testing early, is a key insight. Specifically calling out the techniques of agile development, and the use of prototypes, is also good exposure for the methods used in day-to-day product production."

David Calabrese, United States



"Amazing experience while taking the course , great learning and wish that I will get to implement all of these in my future projects."

Sarang Sudhir Pitale, India

View the course curriculum >



CHAPTER 5

How to Conduct User Interviews

5 min read

User interviews can be a great way to extract information from users so as to understand their user experience as well as the product's usability and the design ideation. They are cheap and easy to conduct. Better still, anyone who is able to ask questions and record the answers can conduct them.

Before we look at how to conduct user interviews, we need to examine some of the drawbacks of interviewing:

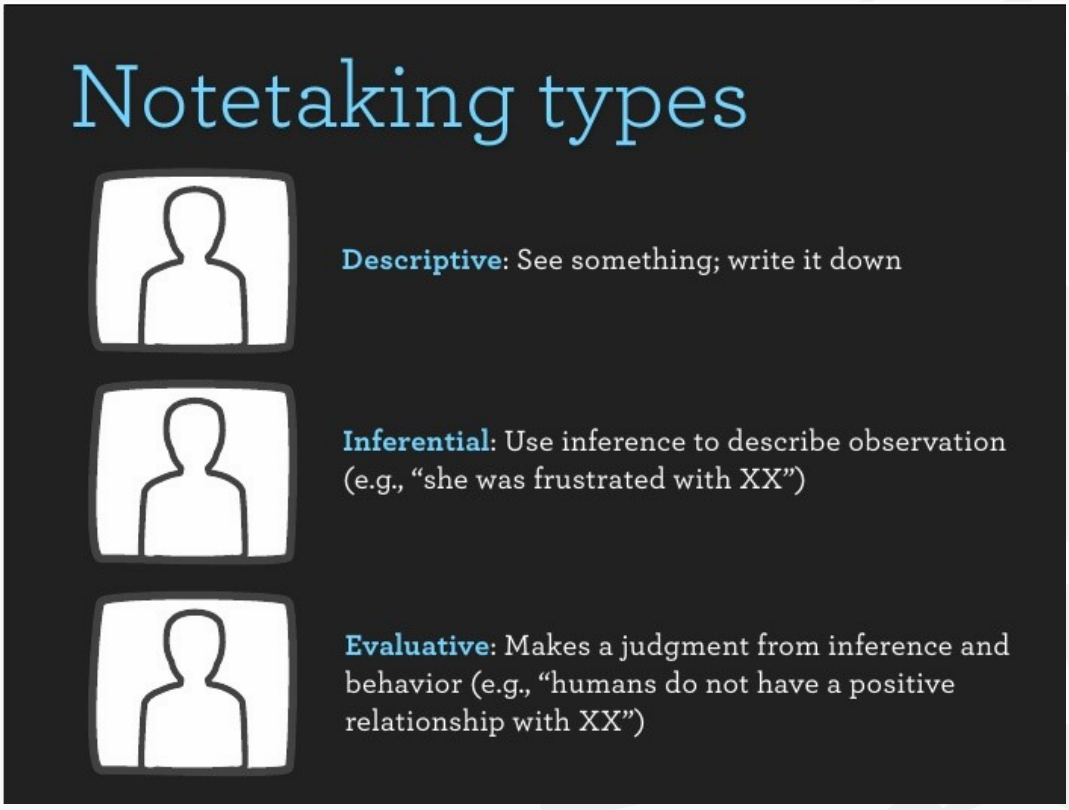
- Interviews, even if they are contextual (i.e., based on observing the interviewee using the product prior to interview), tend to give insights into what people say they will do, and this is sometimes (often even) not the same as what they actually do.
- Human beings have memory issues and can often not recall details as clearly as they would like. Unfortunately, it is a human tendency to try and create these details (this is not even a conscious process) and to tell a story the way we *think* something happened rather than how it happened.
- Users aren't designers. Interviewers should stick to concrete examination of what is happening and how the users feel. We should not try and get them to create their ideal product or to suggest improvements.

It's important to keep these drawbacks in mind when designing your interview questions (or when making up interview questions on the spot while examining what you have observed the user doing). You should also take them into account when evaluating a group of user interviews — interview data gives you a starting point to examine problems but rarely a finishing point which delivers 100% certainty as to what to do next.

> *"Know thy user, and you are not the user."*
> *— Arnie Lund, the author of User Experience Management*

What is a User Interview?

User interviews are where a researcher asks questions of, and records responses from, users. We can use these to examine the user experience, the usability of the product or to flesh out demographic or ethnographic data (for input into user personas), among many other things.



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These three components make up effective notetaking. Deducing the reasons behind a user's actions involves such a process.

The ideal interview takes place with two UX researchers and one user. The first UX researcher focuses on asking questions and guiding the interviewee through the interview. The second takes notes. If a second researcher is unavailable for this, then videoing or audio recording an interview can be a good way to record the information elicited. If the researcher asking questions takes notes, there's a good chance that the interview will be derailed and become hard to manage. So, if you are working alone, don't look on reviewing the recording of the interview as double-handling; it's really the only way to capture and condense what you need into a workable format.

Typical topics covered within user interviews include:

- Background (such as ethnographic data)
- The use of technology in general
- The use of the product
- The user's main objectives and motivations
- The user's pain points

Don't feel limited to these topics. If there's something you need to know that you can learn by asking your users (as long as it's not offensive or threatening), you can ask a question about it.

There is also a special type of user interview known as 'the contextual interview'. This is an interview which is conducted after (or during) the observation of a user using the actual product. It's an interview 'in context' with usage. These are very common in usability testing and assessment of products and even in information visualization. Unsurprisingly, the insights you can gain from first-hand, 'live' user experience can prove very valuable, not least because you can almost guarantee responses that are totally accurate and earnest.

Preparing for User Interviews

Preparation for user interviews begins with recruitment. In order to capture an accurate picture of your usership, you will want to ensure that you recruit a representative sample of users for your interviews.

Then you will need to create a script from which to ask questions (unless you are doing a

contextual interview, in which case you may still create a script but are likely to wander off-piste from that script a lot during the interview).

Some tips for your script include:

- Make sure you begin by explaining the purpose of the interview – what are you trying to achieve?
- Also explain how the person's data and any data you collect will be used from the interview.
- Try to keep leading questions to a minimum. A good question is "Do you use instant messaging?" rather than "How often do you use Snapchat?"— The former lets you explore what users actually do. The latter presupposes that users *are* using Snapchat and that's the extent of their instant messaging activity.
- Keep it reasonably short. If you read the script aloud and it takes more than 10 minutes to read… it's probably too long. Interviews should, ideally, be less than one hour long, and the majority of the time spent should involve the interviewee talking while you listen.

Don't forget that scripts are a guide, *not* a bible. If you find something interesting takes place in an interview and there are no questions, on the script, to explore that idea… explore it anyway. Similarly, if an unforeseen topic has arisen that you need to explore, do so before you lose track of its relevance. Feel free to amend the script for future uses.

When scheduling your interviews, leaving 30 minutes or so between each interview is a good idea. That way, you'll have time to make additional notes and compile your thoughts while everything is still fresh in your mind.

How to Conduct a User Interview

Conducting an interview is simply a question of running through your script or asking the questions you have. However, there are some tips to make this more useful as a process:

- **Make your interviewees comfortable** – dress in a manner similar to them (your being in a suit while they've dressed in tracksuits is going to make it feel like a job interview rather than a user test); make sure they understand you are testing a product or an idea and *not* them as users (apart from anything else, people tend to act differently if they feel they're under a microscope);

offer them a drink (non-alcoholic), conduct a little small talk (but only a little) before you start, etc.

- **Try to keep the interview on time and heading in the right direction** – the reason scripts are useful is because you can reference them for this. Remember, though, that while they provide a good framework or conduit, many key points can still come up spontaneously; so, keep an eye on how you ration your time, especially because users tend to get irritated if they're kept longer than you had agreed.
- **Try to focus on the interviewee and not on making notes** – it's just plain rude to bury your head in your notes. Maintain eye contact, keep a conversation flowing, and record the interview instead of getting lost in notetaking. Keep the users engaged in a living process; if they feel they're giving descriptions to a clerk at a lost property office, they'll almost certainly switch off.
- **Thank the interviewees at the end of the process** – not only is this polite, but you can offer a chance for the interviewees to ask any questions of their own at this point, too.

Reporting on User Interviews

User interviews tend to provide qualitative rather than quantitative data. Compiling the results of many interviews can be challenging. Word clouds (graphical representations of word frequency) and mind maps (hierarchical diagrams that show the relationships between the components) are two good ways of presenting qualitative data in an interesting but easy-to-understand format. Written reports are fine, but try to contain them to the key data and leave all the minor stuff in appendices.

The Take Away

User interviews are a cheap and easy way to get data 'straight from the horse's mouth'. However, it's important to bear in mind that there are limitations to this technique and you may discover what people say they do rather than what they actually do. Contextual interviews are especially useful in exposing accurate user-experience situations. Whichever style you choose, conducting interviews is simple. Write a script, and go through it with the user. However, be prepared to tap unforeseen subjects that arise spontaneously. Remember to abide by the time parameters in which your

interviewee has agreed to speak to you. Above all, make sure you keep the user informed and comfortable as you proceed. The insights you gain from doing so can pay huge dividends later.

Conducting user interviews is a crucial part of any UX designer's job, but it's *not enough* if you want to be a great designer. After all, it is crucial to understand how people interact (sometimes frustratingly) with computers to achieve their tasks. Our course "**Human-Computer Interaction**" covers just this—and will allow you to gain a deep understanding on how to design better.

Human-Computer Interaction

Beginner course

By now, you'd have thought that interactions between computers and humans would be as intuitive as conversations between two people, right? Wrong—many products and services actually still fail to achieve this. So, what do you need to know in order to create such an intuitive user experience? Human psychology? Emotional design? Specialized design processes? The answer is all of the above, and our course on **Human-Computer Interaction** will cover them all. You'll master the essential skill of being able to understand how a user should interact with a computer, enabling you to design products that work more efficiently and sell better than your competitors in the market. Get ready to re-examine what it means to design great user experiences, and start edging yourself ahead of the pack.

Learn more about this course >

How Course Takers Have Benefited



"The course covered a large breadth of essential knowledge in order to start a research or practice in HCI. I liked how he used the same example or cases for some of the exercises to ensure coherence between the chapters."

Briane Paul Samson, Japan



"I believe the content of the course its an must have knowledge for every person who works with technology, either if working with design or coding."

Walter Darcie Neto, Brazil



"One of the most comprehensive online lessons about designing a product for the user, thanks!"

Francesco Manciocchi, Italy

View the course curriculum >



CHAPTER 6

7 Great, Tried and Tested UX Research Techniques

5 min read

Thinking about conducting some user research? Wondering which techniques are most likely to provide useful results? Then look no further.

> *"Good design is about process, not product."*
> *—Jared Sinclair, Designer and Developer at Bloglovin*

1. Card Sorting

Card sorting was originally a technique used in psychological research long before 'UX research' was a thing. It's a simple concept: you write words or phrases on cards; then you ask the user to categorize them. You might also ask the user to label the categories.

The words or phrases you write on the cards depend on what you're trying to find out from your users. For instance, if you want to find out whether your Information Architecture, or the way your website is arranged, is easy to understand, you could write the different pages of your website down and ask a user to sort them into categories. If, on the other hand, you're interested to examine how users think about financial planning, you could write down different activities ("save money in a bank", "travel once every year", "look out for offers", etc.) and ask your users to sort them by priority.

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There are all sorts of card-sorting techniques, and choosing the right one is important. Better still, there are a bunch of online tools that let you do card sorting remotely, allowing you to use the technique globally and not just locally.



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Card sorting, an approach that UX research inherited from psychological research, is an excellent, and wonderfully simple, way of assessing what users' priorities are and how their sense of order processes the existing nature of an item in question.

Why is Card Sorting a Good Technique?

- It's a very cheap form of research, since face-to-face online tools may be more expensive.
- It's also a very easy technique for users to understand and for clients to understand, too.
- It's a very easy method to get user input (or even to get user validation) for ideas early on in a UX project.
- Preparing a card-sorting study requires next to no effort.

2. Expert Review

Expert reviews involve a single 'expert' walking through a product via the User Interface (UI) and looking for issues with the design, accessibility, and usability of the product. There's no fixed process to follow, and the expert review can vary from professional to professional as well as from product to product. The more expertise the reviewer has in usability and UX design, the more valuable the input of that person will be (in most cases).

Why is an Expert Review a Good Technique?

- It's quick, easy and cheap. This is doubly so when you compare it to more formal usability-testing methods.
- It only takes a single professional to conduct an expert review.
- It is a great way to inform further UX research; however, you should be careful when taking an expert review at face value—don't let it preclude further user testing; instead, dig deeper and see how you might gain more thorough insights.

3. Eye Movement Tracking

Knowing where your users are looking when they're using your system can tell you a great deal about where your design's effectiveness stands. Eye movement tracking helps with UI design, and it helps with knowing how to prioritize certain kinds of content. This technique was developed for academic research. Used extensively in medical research, it has become popular and cost-effective enough to be deployed by UX teams, too.

Why is Eye Movement Tracking a Good Technique?

- Given the ever-improving state of the art in technology, the advancements have long since left bulky and invasive eye movement tracking systems behind. Consequently, EMT has become so sophisticated and discreet that modern systems do not interfere with the results of usability tests.
- Hand in hand with those developments, the technology has become increasingly affordable. EMT may not suit every project budget, but it often won't break the bank, either.

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- The technology has become sufficiently reliable for results to be easy to reproduce and for us as researchers to be able to rely on the outputs we get.
- UX design clients love eye movement tracking. It's a great way to demonstrate why they might want to invest in further usability testing.

4. Field Studies

This is actually a number of techniques under a broad heading. It's all about going out and observing users 'in the wild' so that we can measure behavior in the context where users actually use a product. Field studies include ethnographic research, interviews, observations, and contextual enquiry.

Why are Field Studies a Good Technique?

- There's no stronger form of research than observing users behaving as they will when they use your product. Researchers love these techniques and are often passionate about persuading their clients to take them on board.
- When conducted well, the outputs of field studies provide the deepest insights into user issues and light up pathways towards possible solutions.

5. Usability Testing

A firm favorite that has a long and prestigious history in UX research, usability testing is the observation of users trying to carry out tasks with a product. Such testing can focus on a single process, or be much wider in range.



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Usability testing gives a very clear lens for observing users as they attempt to carry out tasks with a system—not for nothing does it remain extremely popular among researchers.

Why is Usability Testing a Good Technique?

- Can you think of a better way to understand what users do than watching them do stuff? Of course, you have to pick the *right* users—they need to be a good representation of the user base as a whole, but that's pretty much the only constraint.
- Usability tests produce specific results that lead to specific actions. Better still, it's very hard for people to contradict decisions based on these tests; it's nearly impossible to refute evidence of user behavior.
- You can bring clients into usability testing easily as observers. This increases their enthusiasm for such testing and shows clearly why such testing adds value.

6. Remote Usability Testing

This is usability testing, but without the need to drag users into your laboratory environment. It was once complex and expensive, but technology has moved on, and now it's fairly simple to set up and reasonable value for money, too.

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Why is Remote Usability Testing a Good Technique?

- It often saves time and money when compared to lab testing, and allows for a wider range of participants when you don't have to get them in the lab.
- It is closer to field testing in some respects in that the tests are conducted in the user's environment and not an artificial lab environment. This delivers better results in many cases than a lab environment.

7. User Personas

User personas are a fictional representation of the ideal user. They focus on the goals of the user, that individual's characteristics and the attitudes he/she displays. They also examine what the user expects from the product.

We created user personas from other forms of user research; thus, they offer an in-depth, real-life vivid portrait that is easy for the whole team to keep in mind when designing products. Each user persona has a name and a backstory. Moreover, personas inspire the imagination and keep the focus on the user.

Why are User Personas a Good Technique?

- They are a step above the old user profile and give a more in-depth and specific look at a user.
- They are easy for people to relate to, and they become part of the team as team members constantly speak about them during a project.
- They are a lot of fun, and they tend to be interesting, easy for people to engage with and more memorable than many other research outputs.

The Take Away

There are many user research techniques, but these seven techniques have been used over the years, in many UX projects, with great results. Each technique provides a different output; so, you should use each one only to serve a distinct purpose.

To recap, the techniques are:

1. Card sorting
2. Expert review
3. Eye movement tracking
4. Field studies
5. Usability testing
6. Remote usability testing
7. User personas

As designers who can double as researchers, we have a wealth of options at our command in the twenty-first century, options that hail from traditional, or unrelated, fields and ones that have grown with the technologies we have always concerned ourselves with. As the state of the art has lent power to the tools available to us, the price of these has dropped. Consequently, there's no excuse not to use a combination of these techniques in the pursuit of the best design.

You now have 7 new UX research techniques in your toolkit. But which ones should you use in your projects? When does card sorting make sense, and when does it become unproductive? To help you navigate the various ways you ought to be conducting user research, we have created the course "**User Research - Methods and Best Practices**". Filled with actionable insights, the course ensures you'll never be a novice in user research again.

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User Research – Methods and Best Practices

Intermediate course

User experience (UX) design requires you to understand the pains and pleasures of your users—and user research is the way in which to do just that. In that sense, it's actually the largest part of the field… meaning it's essential for you to have the relevant skills and knowledge if you want to be competing with the best. In our course **User Research – Methods and Best Practices**, you'll learn the best practices for getting first-hand knowledge of your users, this enabling you to design the optimal product—one that's truly relevant for your users and, subsequently, outperforms your competitors'. In the course you'll be equipped with templates that will give you pointers on how to effectively interview your users, conduct observations, and best present your findings to stakeholders. You've already downloaded this ebook, now take the next step and master the full range of user research techniques!

Learn more about this course >

How Course Takers Have Benefited



"I enjoyed the mix between video and text very much and I am sure that it improved my learning experience. In general the content of the course was very interesting to me and I consider it very useful for improving in doing user research. I really like the possibility to download templates about different methods because they enable me to easily look up the most important information."

Ulrike Bruckenberger, Austria



"A strength of the course was the instructors' knowledge and examples from their own experience. I find it very useful when someone tells you stories, in this case about situations when they did research. The lessons where very easy to follow and understand."

Laura Gleco, Australia



"The course instructor has a lot of knowledge and experience, and can explain the topics without a problem."

Juan Esteban Arango Florez, Colombia

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CHAPTER 7

What is Interaction Design?

4 min read

Interaction design is an important component within the giant umbrella of user experience (UX) design. In this article, we'll explain what interaction design is, discuss some useful models of interaction design, as well as briefly describe what an interaction designer usually does.

A Simple and Useful Understanding of Interaction Design

Interaction design can be understood in simple (but not *simplified*) terms: it is the design of the interaction between users and products. Most often when people talk about interaction design, the products tend to be software products such as apps or websites. The goal of interaction design is to create products that enable users to achieve their objective(s) in the best way possible.

If this definition sounds broad, that's because the field *is* rather broad: the interaction between a user and a product often involves elements such as aesthetics, motion, sound, space, and many more. Also, of course, each of these elements can involve even more specialized fields—for instance, sound design for the crafting of sounds used in user interactions.

As you might already realize, there's a huge overlap between interaction design and UX design. After all, UX design is about shaping the experience of using a product—for the most part, that experience involves some interaction between the user and the product. However, UX design is more than interaction design: it also involves user research (finding out *who* the users are in the

first place), creating user personas (*why*, and under *what* conditions, would they use the product), performing user testing and usability testing, etc.

> *"When creating content, be empathetic above all else. Try to live the lives of your audience."*
> *—Rand Fishkin, Founder at Moz*

The 5 Dimensions of Interaction Design

The five dimensions of interaction design is a useful model for understanding what interaction design involves. Gillian Crampton Smith, an interaction design academic, first introduced the concept of four dimensions of an interaction design language, to which Kevin Silver, senior interaction designer at IDEXX Laboratories, added the fifth.

1D: Words

Words—especially those used in interactions, such as button labels—should be meaningful and simple to understand. They should communicate information to users, but not so much information that they end up overwhelming users or slowing them down.

2D: Visual Representations

This concerns graphical elements such as images, typography and icons that users interact with. These usually supplement the words we use to communicate information to users. As an extremely visual-oriented species, humans value images immensely: not only because well thought-out, picture-rich designs make for more pleasing, calming user experience, but also because an image carries many words—a story, in fact—and that's precious, given users' tendency to lack patience.

3D: Physical Objects or Space

Through what physical objects do users interact with the product: is it a laptop, with a mouse or touchpad? Or is it a smartphone, with the user's fingers? Also, within what kind of physical space does the user do so? For instance, is the user standing in a crowded train while using the app on a smartphone, or sitting at a desk in the office while surfing the website? These all affect the interaction between the user and the product. Space is all about context and goes a *very* long way

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to deciding what a product *must* look like, in much the same way as the average size of a human hand will.

4D: Time

While this dimension sounds a little abstract, it mostly refers to media that changes with time (animation, videos, sounds). Motion and sounds play a crucial role in giving visual and audio feedback to users' interactions. Also of concern is the amount of time a user spends interacting with the product: can users track their progress, or resume their interaction some time later? In an era saturated with information and where users can feel as time-starved as they can data-drowned, understanding how much time they spend in their user experiences is absolutely vital.

5D: Behavior

This includes the mechanism of a product and involves two pivotal questions—namely, "How do users perform actions on the website?" and "How do users operate the product?". In other words, this dimension is all about how the previous dimensions define the interactions a user should be having with a product. It also includes the reactions—for instance, emotional responses or feedback—of users and the product. While the first four dimensions are vital in their own right, the fifth sheds light on a deeper aspect of the human realm in UX and can expose serious strengths as well as any flaws.

Important Questions Interaction Designers Ask

How do interaction designers work with the five dimensions above so as to create meaningful interactions? To get an understanding of that, we can look at some important questions interaction designers ask when designing for users, as provided by Usability.gov:

- **What can users do with their mice, fingers, or styluses to interact with the interface directly?** This helps us define the possible user interactions with the product.
- **What about the appearance (color, shape, size, etc.) gives the user a clue about how it may function?** This helps us give users clues about what behaviors are possible.
- **Do error messages provide a way for the user to correct the problem or explain why the error occurred?** This lets us anticipate and mitigate errors.

- **What feedback does a user get once an action is performed?** This allows us to ensure that the system provides feedback in a reasonable time after user actions.
- **Are the interface elements a reasonable size to interact with?** Questions such as these help us think strategically about each element used in the product.
- **Are familiar or standard formats used?** Standard elements and formats are used to simplify and enhance the learnability of a product.

So, What do Interaction Designers do?

Well, it depends...

For instance, if the company is large enough and has huge resources, it might have separate jobs for UX designers and interaction designers. In a large design team, there might be a UX researcher, an information architect, an interaction designer, and a visual designer, for instance. For smaller companies and teams, it's a different story—most of the UX design job might be done by one or two people, who might or might not have the title of 'Interaction Designer'. In any case, here are some of the tasks we as interaction designers would expect to handle in a day's work:

Design Strategy

This is concerned with what the goal(s) of a user is or are, and—in turn—what interactions are necessary so as to achieve this or these. Depending on the company, interaction designers might have to conduct user research in order to find out what the goals of the users are before creating a strategy that translates that into interactions.

Wireframes and Prototypes

This again depends on the job description of the company, but most interaction designers are tasked with creating wireframes that lay out the interactions in the product. Sometimes, interaction designers might also create interactive prototypes and/or high-fidelity prototypes that look exactly like the actual app or website.

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The Take Away

Interaction design is all about the interface between users and a product or service. It encompasses a large range of elements, such as aesthetics, motion, and sound, but we can categorize it into the five dimensions of interaction design.

Those 5 dimensions are:

1. Words
2. Visual representations
3. Physical objects or space
4. Time
5. Behavior

As interaction designers, we are generally concerned with the feedback and usability of a product; nevertheless, we might also be in charge of the overall UX design of the product. Our job scope depends largely on the needs of the company, and it can range from design strategy to wireframing and prototyping. Attuning a sound understanding of these dimensions to the exact needs of the organizations we serve will help us create output that latches consistently with the different groups of users we will encounter as we progress in our careers.

Creating a world-class interaction design requires *matching* the 5 dimensions of interactions to the *psychology* of your users. When you tune the timing of your animations to the cognitive capabilities of our brains, you'll produce an effective design. Off by a few milliseconds? Your design might instead induce friction and frustration. Learn more about the intricate overlap between usability and interaction design, and how to create interactions that just work, in our course "**Interaction Design for Usability**".

Interaction Design for Usability

Beginner course

Usability is a key consideration whenever designing a product or service—after all, nobody will buy your product if they can't use it! Infusing usability into your interactive or visual designs, however, will often require the cooperation and participation of your entire team, from the project managers to developers. Through **Interaction Design for Usability**, you will therefore not only learn fundamental usability concepts and methods that will augment your design skills, but also how to adopt lean and agile processes that will allow your whole team to become design-centric. That way, you (and your team) will be well-equipped to reduce the costs, risks and time required to create products—thus gaining an advantage over the competition.

Learn more about this course >

What Industry Experts Say About Us

"Ivy League level education in UX, Product Design or Human-Computer Interaction."

Forbes.com

"Top-grade educational materials by the world's technology elite... on how to make technology more people-oriented and easy-to-use."

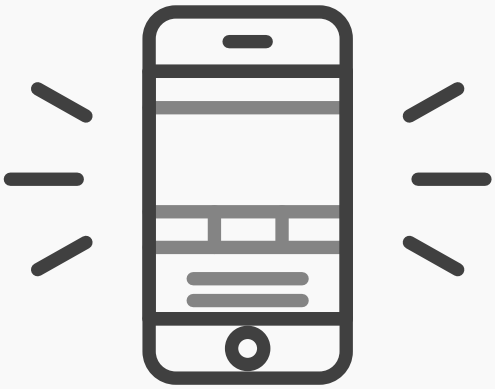
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CHAPTER 8

Mobile Web UX Design: Some Simple Guidelines

4 min read

If you're going to design for mobile, then it's likely you're going to need to consider the way that the device is used and the specifics of the device itself. There are some general principles that can help you begin designing for mobile, but don't forget that these don't replace the need for user research. They are guidelines, not hard and fast rules.

There are many things to consider when designing for mobile. On top of standard UX considerations, there are also going to be mobile-specific design considerations. For instance, are you going to integrate your mobile offering with your current offering? Will you use responsive design or adaptive design?

A lot of this will boil down to context—that is, the context in which users will use their mobile devices to do whatever tasks we have in mind. If your users access the mobile web from their desks, that's awesome, but many users don't. They're going to be trying to use them in the supermarket, on their daily commute, on the walk to the coffee shop, etc.

> *"If your business isn't mobile friendly, your business is dead."*
> *— Jonathan Stark, Best-selling mobile technology author*

Space and occasion (i.e., context) should be foremost in your mind. As the era has freed people from having to anchor themselves to desks in order to get online, the places in which they interact with their devices are virtually limitless. That means you're going to have to consider how to reduce distractions and make it easy for the user to focus on the task in hand, too.

Josh Clark, the author of *Tapworthy - Designing Great iPhone Apps*, offers three categories for mobile web access:

1. Microtasking: When users interact with their devices for brief but frenzied periods of activity
2. Local: When the users want to know what's going on around them
3. Bored: When the users have nothing better to do and are looking to be entertained or otherwise diverted

Basic Design Considerations for the Mobile Web

Small Screens

You don't have as much screen real estate for mobile devices as you do for PCs and laptops. That means, normally, you'll be designing for multiple screen sizes. You need to make a decision early as to whether to use responsive design (where the device handles the changes in display) or adaptive design (where your servers handle the changes).

You want to focus on a 'mobile first' approach, which means designing for the smallest mobile platforms and increasing complexity from there.

A good process to follow would be:

- Group device types based on similar screen sizes, and try to keep this to a manageable number of groups.
- Define content rules and design adaption rules that enable you to display things well on each group of devices.
- Try to adhere as closely to web standards as possible when implementing flexible layouts.

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Don't forget that there are many different browser types available for the mobile web and the wider Internet, too. You want to ensure that you support as many of these as possible.

Keep Navigation Simple

Keypads and touch screens don't make for precise navigation like mice do, so try to:

- Prioritize navigation based on the way users work with functionality—the most popular go at the top
- Minimize the levels of navigation involved
- Ensure labelling is clear and concise for navigation
- Offer short-key access to different features
- Remember to offer a 30x30 pixel space for touch screen tap points
- Ensure that links are visually distinct, and make it clear when they have been activated, too
- Make it easy to swap between the mobile and full site (if you choose to implement separate versions)

Keep Content to a Minimum

Don't overwhelm your users—respect the small screen space. Keep content to a minimum; save the deluxe treatment for the desktop platform (while being careful not to make the mobile user feel short-changed if the desktop version seems vastly superior).

Make sure that content is universally supported on all devices or avoid it. Think Flash and then don't use it, for example.

Make page descriptions short and to the point—for relevant bookmarks.

Reduce the Inputs Required from Users

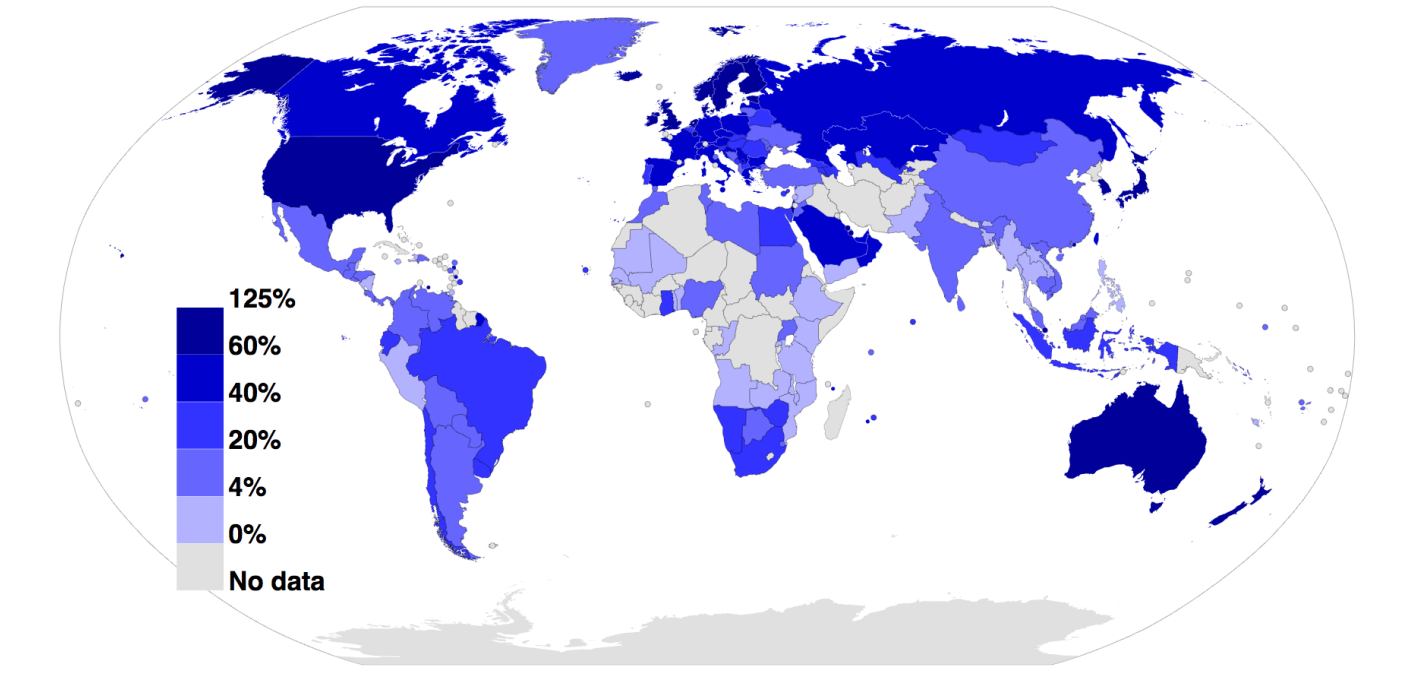
The less the users have to fiddle with their phones, the more they're going to enjoy using your mobile web offering.

Consider:

- Keeping URLs short
- Offering alternative input mechanisms (video, voice, etc.)
- Minimizing inputs in forms (You can always ask for more data when the user logs on to the desktop.)
- Allowing permanent sign in (Most smartphones are password or fingerprint protected – the risks of staying logged in are less hazardous than on the desktop.)
- Keeping scrolling to a minimum and only allowing scrolling in one direction

Remember Mobile Connections Are Not Stable

Mobile connections can be a colossal pain in the ass in areas with patchy service. Don't make things hard on your users. As the global mobile broadband internet penetration map below shows, not all areas around the world have readily accessible mobile connections.



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Try:

- Retaining data so that it's not lost in a connection break
- Minimizing page size for rapid loading
- Killing off ad-networks, etc. on mobile sites which consume huge amounts of bandwidth and data
- Keeping images to a minimum and reducing the size of those images
- Reducing the numbers of embedded images to a minimum (speeding up load times)

Continuous Integrated Experiences

As users move between mobile and the desktop, they're going to expect similar experiences. Remember to:

- Maintain continuity. If they log into your webstore on mobile, they should be able to track orders and make purchases just like they would on the desktop.
- Maintain consistency. Offer the option to switch between mobile and desktop offerings at will.
- Maintain brand. The look and feel of each version should be similar. Any deviations between the logo and such can have disastrous repercussions due to loss of trust.

The Take Away

Mobile is different from the traditional desktop environment. Moreover, while standard UX and usability considerations are needed in a mobile context, the mobile environment also demands design considerations of its own. This will frequently involve a balancing act as you try to condense needed features from the desktop version while shaving down on data demands, and all the while being careful to maintain the organization's presence through a credible presentation so as to win and keep users' trust. Get it right, though, and you will be another step closer to impactful designs that can catch users anywhere, anytime.

When we see the next billion smartphone users on the horizon, we know that mobile is *the* big thing now. You cannot take any chances when it comes to mobile design—the good thing is you don't have to... sign up for our course "**Mobile User Experience (UX) Design**" now!

Mobile User Experience (UX) Design

Intermediate course

Mobile devices have taken over the world and changed what it means to design a website or application. They're also full of unique constraints and considerations that, when understood and mastered, can allow you to create impactful solutions that are easy to use. Through our course on **Mobile User Experience (UX) Design**, you will learn about the evidence-based approaches and best practices of designing for mobile, distilled from decades of research and practice. You will be taught by CEO of ExperienceDynamics.com, Frank Spillers, who is a distinguished speaker, author, and internationally respected Senior Usability practitioner. Designing for mobile means taking the rough with the smooth—the risk with the profit potential, for example—and your need to learn the skills involved is nothing less than vital.

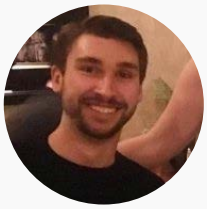
Learn more about this course >

How Course Takers Have Benefited



"The course covers all the major aspects of mobile user experience design. It has definitely equipped me with a great knowledge to build great mobile experiences. I would say this course is crucial if your users are mobile users."

Hemant Panchabhai, India



"Great content, I loved how much the instructor sets practical design tasks for you to do. I also loved the feedback on open question answers."

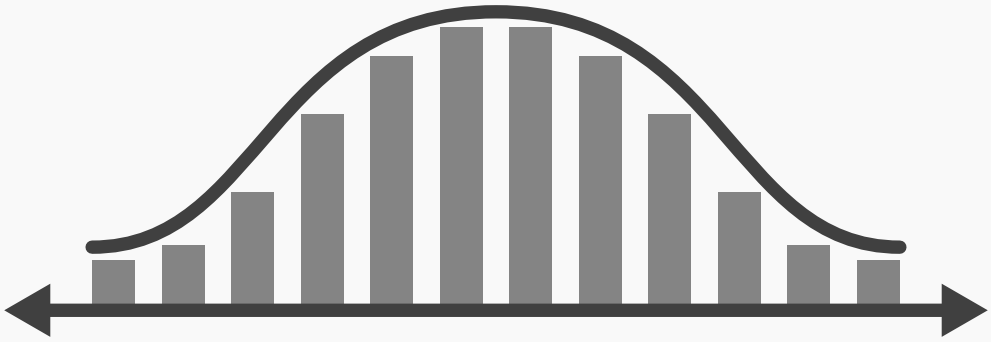
Matthew Shenton, United States



“The overall organization of this course was great. I really liked the overview and wrap-up included in each module that introduced and summarized the information that was presented. The overall material was in-depth and very relevant to current trends and best practices."

Jennifer Steiner-Kotch, United States

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CHAPTER 9

Information Visualization – A Brief Introduction

4 min read

Have you ever thought about how much data flows past each of us in an ordinary day? From the newspaper you read at breakfast, to the e-mails you receive throughout the day, to the bank statements generated whenever you withdraw money or spend it, to the conversations we have, and so on?

In case you weren't sure of the exact situation on the average, there is a tidal wave of data associated with each aspect of our lives. What's more interesting, and probably more frustrating in some regards, in addition to that personal data, there is data available on nearly every aspect of life.

Over the last few decades, computing and the Internet have revolutionized our ability to create, store and retrieve information on a whim. A global economy and instant communication have created an explosion in the volumes of data to which we are exposed. At the same time, the amount of data leads to a large amount of possible confusion and decision paralysis. There's more data available than we can comfortably process.

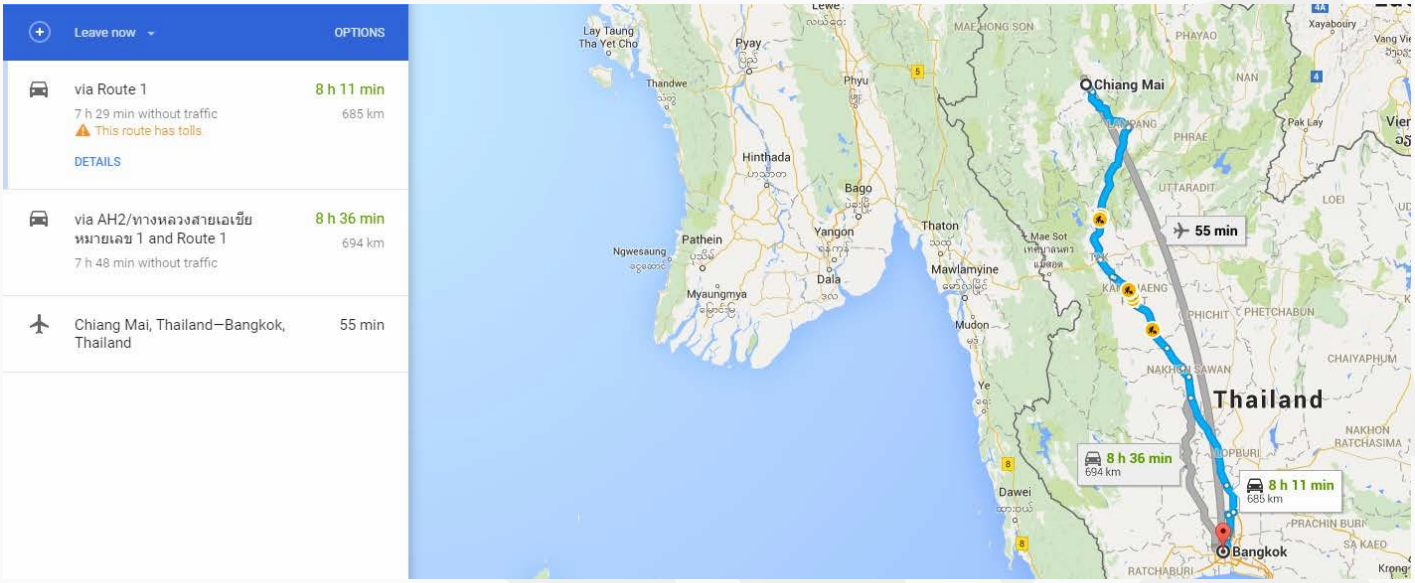
Information visualization, the art of representing data in a way that makes it easy to understand and to manipulate, can help us make sense of information and thus make it useful in our lives.

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From business decision making to simple route navigation, there's a huge (and growing) need for us as designers to present data so that it delivers value.

An Example of Everyday Information Visualization

This map, generated in Google maps, offers two simple ways of representing the route from Chiang Mai in Northern Thailand to the capital of Thailand, Bangkok, in the center of the country.



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A map in word and picture form—one will hold greater value to a certain kind of user, while another user will treasure the other one more. It's mostly down to purpose.

The first representation consists of written instructions on how to go from Chiang Mai to Bangkok (as you can see, it's a pretty simple drive – though, it's worth noting that it would be more complex if we were to be moving between specific points within each city). The second representation is an image of the route itself imposed on a map.

Both representations represent value to different people. The first, the written instructions, is highly useful to people who need to get from Chiang Mai to Bangkok directly (for example, a businessman going to a meeting).

The second, the map data, on the other hand, could be really useful to a tourist who intends not to drive straight from A to B but rather wants to know "What's on the way?". This lets the tourist look for potential break points in the journey and start to research what their options are in those places.

Both of these representations are examples of information visualization. The first relies on clear simple instructions and the minimum of graphical content – it conveys a simple set of useful instructions. It is as fast and to-the-point as that businessman's demands. The second conveys rather more data and in a visual form that allows for rapid cognitive processing to enable us to digest the information we see quickly. At the same time, it invites the imagination to dip in and process the information more leisurely.

Common Uses for Information Visualization

There are some very common uses for information visualization, and these include:

Presentation (for Understanding or Persuasion)

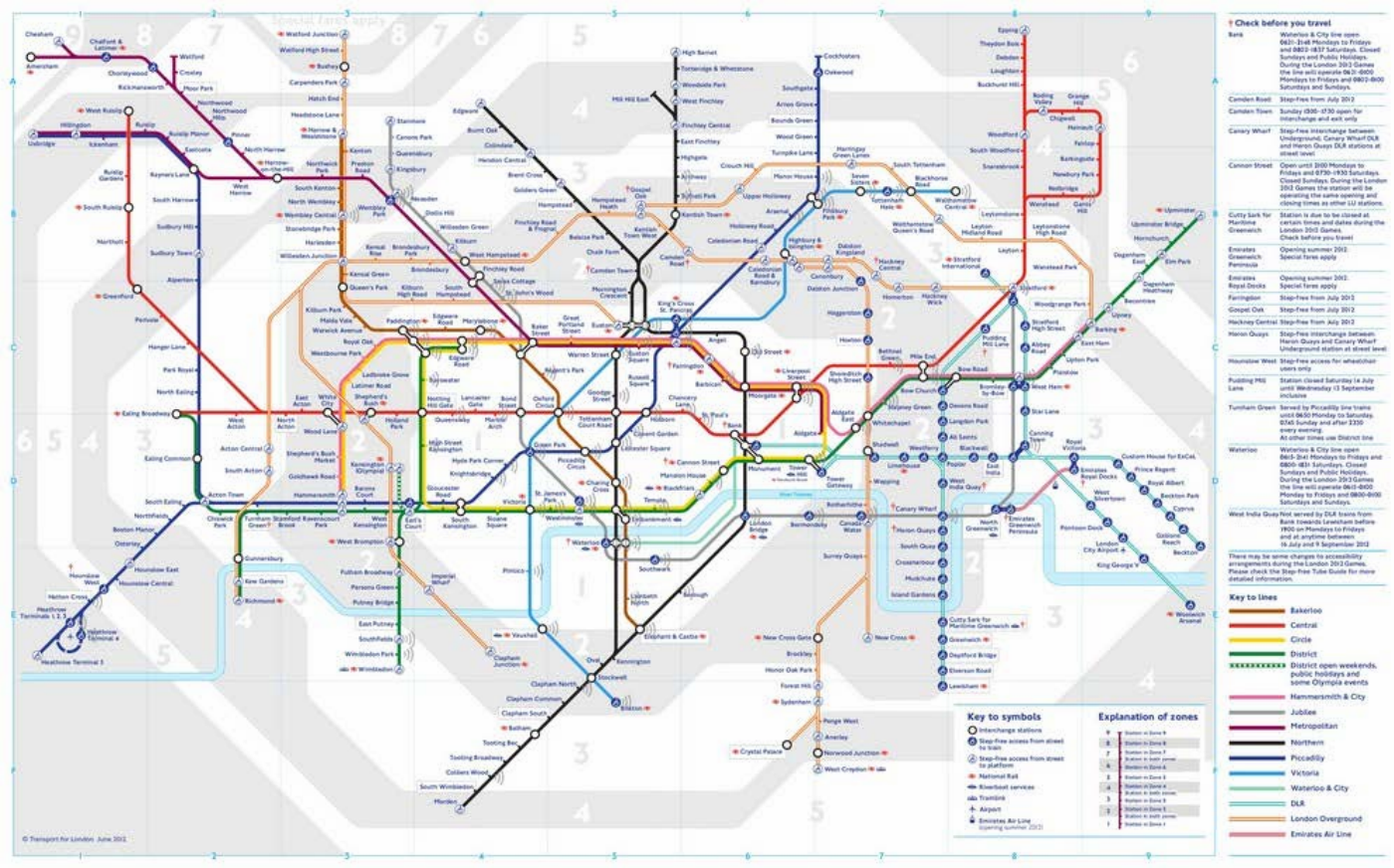
> *"Use a picture. It's worth a thousand words."*
> *—Tess Flanders, Journalist and Editor, Syracuse Post Standard, 1911*

Journalists have known for a very long time that some ideas are simply too awkward to communicate in words and that a visual representation can help someone understand concepts that might otherwise be impossible to explain.

One of the most famous information visualizations in the world is the map of the London Underground. It is only a 'map' in the loosest sense of the word, in that the geography above ground is very different to the way it appears on the underground map. However, it enables pretty much anyone to understand in the quickest possible way how to get from one point in London to any other using the underground system.

In simple terms, the underground map presents complex data for the purposes of understanding that data so as to make it useful. It doesn't have to matter that the Thames looks like an impossibly geometric river; users aren't using the subterranean trains to explore the riverbank, after all.

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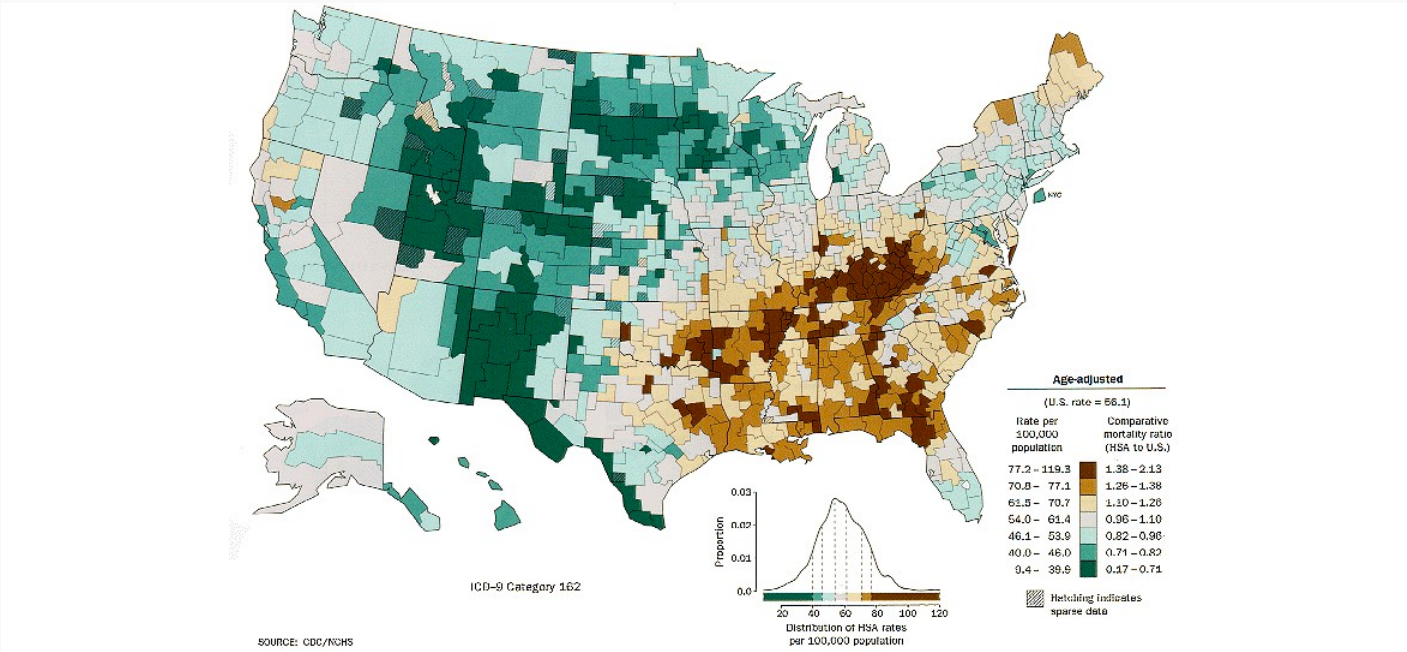
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At a glance, one might find it hard to imagine this map—of the London Underground system—to be able to capture the essence of the ancient capital in such a neat way. However, it does just that—users want to know how to get to sites that have unique, organic features; they don't want those features showing and slowing them up on a map.

There is a 'dark side' to the presentation of information for understanding—the presentation of information to persuade. There are "lies, damned lies and statistics", as the saying (usually attributed to Mark Twain) goes. By choosing what information to represent and what information to leave out, there are now "lies, damned lies and information visualizations".

It is up to the presenter to decide where the ethical boundaries are in persuading people through information visualization. For example, you could show a graph that states "70% of people who use homeopathy feel better than those who don't" but omit the fact that "70% of people who take a placebo feel better than those who don't". Being economical with the truth does not automatically make you a distorter of reality (or 'liar' in old money). The main thing is knowing the difference and how moving close to the boundaries can benefit your organization and usership.

Explorative Analysis



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A geographical image can capture powerful data regarding the incidence of disease. At a glance, we can see clusters of high frequency and work out the significance as regards likely causes, contributing factors, etc.

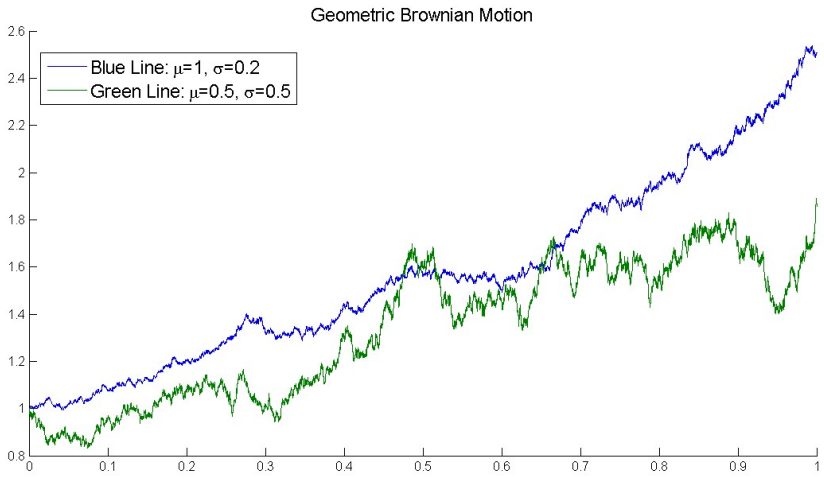
The image above portrays the frequency of lung cancer within the United States by geographic region. Mapping disease data like this enables researchers to explore the relationship between a disease and geography. It's important to note that this data doesn't explain why there is a spike in cancer rates in the South East of the United States, but it does indicate that there is a spike which is worthy of further investigation.

Explorative analysis through information visualization allows you to see where relationships in data may exist. From there, you can proceed to work on discovering the factors, links and reasons underlying the reality.

Confirmation Analysis

We can also use information visualization to help confirm our understanding and analysis of data. For example, if you perceive a relationship between two stock prices, you can plot the data and see if the two are related.

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For confirmation analysis, we use information visualization by tracking a couple of items' behaviors and comparing them so as to establish a link.

We might use this graph (above) to show the similarities in Brownian motion between sets of particles, or we might use it to question the break in the relationship towards the end of the graph. For instance, we might envision two experiments; in each, a group of dust particles are run through a cylinder containing methane in two different concentrations. Both voyages of the dust particles involve their colliding with a large set of smaller methane particles, all moving at different speeds and in seemingly random directions. The dust particles will move erratically (as shown in the jagged lines). In the first experiment (the green line), they have less methane to deal with—nevertheless, in both experiments, the dust particles more or less conform to the proportions of gas around them, at least until the end. We might want to investigate what happened in the second experiment so as to see why the dust particles ended up moving so differently at the far side of the cylinder.

The Take Away

Information visualization is designed to help us make sense out of data and swiftly so. We can use it to explore relationships between data, to confirm ideas we hold about data, or to explain data in an easy-to-digest manner. We may also use it, as long as we stay mindful of our ethical duties, to help persuade someone with data.

As the volume of data available to us increases exponentially in every field of endeavor, information visualization is becoming increasingly important as a skill in the workplace and in academia. With this in mind, you should weave such representations carefully into your designs, balancing convenience for users so as to help their decision-making processes against considerations of purpose, namely what are they seeking to achieve and how your images can help them.

Want to harness the power of information visualization and apply it to your designs and your workflow as a designer? Don't miss our course "**Information Visualization**" (each course intake has limited spots available — make sure to book yours today)!

Information Visualization

Beginner course

Whether or not you're involved in the rising field of big data, information visualization skills are in high demand. Information visualization can help with many of your design processes—by allowing you to collate and present data, and turn raw data into meaningful patterns and actionable insights. From designing meaningful interfaces, to processing your own UX research, information visualization is an indispensable tool in your UX design kit, and one you can learn from Alan Dix, a former professor at Lancaster University, UK, in our course **Information Visualization**. A world-renowned authority in the field of human-computer interaction, Alan will guide you through both practical lessons and the theory behind how to distill rich information into meaningful visuals.

Learn more about this course >

What Our Members Say About Us



"I wanted to thank you! IDF is just the best thing ever. Just ever! Making this information accessible and available at the high level of quality. Just awesome!"

Phillip Dodson, United States



"The course covers a lot of the fundamentals, particularly the history of data visualization and how people actually comprehend data."

Reid Dickson, United States



"I am happy with the content of this course and other contents in IDF's site. This is helping me to reinforce my knowledge and define the concepts, discovering I knew more things about UX that I expected!"

Julia Maroto Romero De Ávila, Spain

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Learn UX Design from Industry Experts

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