SNS COLLEGE OF TECHNOLOGY

COIMBATORE - 35

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING (UG & PG)

19CSE315 - UI & UX DESIGN

User interface design for mobile applications

A mobile user interface (mobile UI) is the graphical and usually touch-sensitive display on a mobile device, such as a smart phone or tablet, that allows the user to interact with the device's apps, features, content and functions.

Shadows in UI Design

Shadows are everywhere in modern UI Designs. They are one of the most essential parts of the UI elements right behind the fill, stroke, and cornder radius

Mental model

A mental model is what a user thinks they know about how to use a website, mobile phone, or other digital product. Mental models are built in a user's brain and people reference them to make their lives easier.

UX design laws

Aesthetic Usability Effect
Consistency
Goal-gradient Effect
IKEA Effect
Recognition over Recall

Characteristics of Persona.

Personas reflect real user patterns, not different user roles. Personas aren't a fictional guesses at what a target user thinks. Every aspect of a persona's description should be tied back to real data. Personas aren't a reflection of roles within a system.
A persona focuses on the current state (how users interact with a product), not the future (how users will interact with a product).
A persona is context-specific (it's focused on the behaviors and goals related to the specific domain of a product).

Grid layouts in UI Design.

UI Grid Layout Design

Good organization and positioning of UI visual elements is key to creating a great web or mobile experience. Designers rely on layouts to introduce structure in design and give users a predictable rhyme as well as a sense of familiarity. Grids work as a framework that helps product teams to arrange UI elements in a way that allows maintaining good visual balance from page to page. It allows designers and developers to create more consistent and appealing UIs.
What is a grid layout design?

When it comes to website or mobile app design, a grid is a set of intersecting horizontal and vertical lines that divide your pages into countless columns and rows. No matter whether these lines are real or imaginary, a grid always serves as a framework or backbone that helps you position, align and arrange content on your page more precisely.

Grid layout types

- Symmetric
- asymmetric

Symmetric grids often follow a center line and enable designers to distribute all content around a center point or axis. Equal columns or rows help designers create a comfortable and aesthetically pleasing layout.

Asymmetric grids, also called broken grids, do not have any center line or point. Asymmetric grid allows designers to create a more interesting yet ordered page layout. It can be a good choice for designers who want to create a distinctive yet personalized design for users.

Responsive grid layout

A responsive grid layout is a grid layout that can scale with different screen sizes. In comparison with the fixed grid layout that can only be viewed on a particular device, the responsive grid layout enables you to view page content on different devices and platforms. It is one of the most critical parts for designers who want to create fully responsive projects.

Why should you use the grid layout?

The main reasons why you should build an effective yet eye-catching grid layout.

1) Better organization of UI elements

Grid layouts offer a clear structure of horizontal and vertical lines that makes it easier for designers to place and align elements on a page. Using a grid it's much easier to keep everything in order.

2) Easier collaboration with designers and developers

When working with designers and developers, a clear grid layout helps to avoid any misunderstanding and mistakes. Grid acts as a guide that allows you and your team to place elements and structure your designs consistently.

3) Keep all page layouts consistent

A clear grid layout can help you and your team to set consistent sizes, spacing, blocks for your projects. It can also help you create a layout template for all your key pages. The visual hierarchy will also be enhanced easily with the aid of the grid.

4) Use broken grids to impress users

Unlike symmetric grids that help designers create comfortable UIs, broken grids help them showcase information on a page differently and create more interesting yet eye-catching visual effects. It is also a

good method to impress users and promote product brands.

How to use grid layouts to improve your UI designs?

After learning the benefits that a clear grid layout can bring, let's see how you can create a grid layout. Here are several tips that you should keep in mind,

1) Customize grids according to your design needs

Grid layouts are often used to manage the relationships and proportions between page elements. That's why you need to customize the grids according to your design needs. Here are several things you should consider

Customize columns and rows

When designing with grids, visual designers typically ask the following questions:

1. How many columns and rows should be used?
2. What column width and row height should I choose?
3. Is it necessary to set the block size or gutter width?

All these questions should be asked before you start to work with the grids. It would be best if you always customized these properties based on your layout needs.

Consider constraints

When it comes to grid layouts, some designers insist that adding constraints can restrict their design creativity. However, it's important to remember the old saying, "No order without rules." Creative constraints not only can give you a different angle of view on your projects but also allow you to find better solutions. Sometimes, they can also help you create a far more distinctive design.

Use a baseline grid to align elements

A baseline grid is a dense grid of equally spaced horizontal lines that can help you align texts, images, videos, cards and other elements on your page. It is a good tool to create clear and near typography and enhance the visual hierarchy of your design.

Place elements inside a grid field, not in the gutter

To ensure that all elements on the page are properly organized and aligned, place elements inside a grid field.

Pay attention to spacing, margin and other factors

The spacing between elements, the margin outside the grids, and the gutters between grid blocks can also leave a huge impact on how the grid works.

2) Don't forget about responsive design

Responsive design is one of the most popular design trends. When designing with grids, never forget about responsive design. To ensure that your grid layout will also work across different screen

sizes, design using values in percentages and proportions rather than exact pixels.
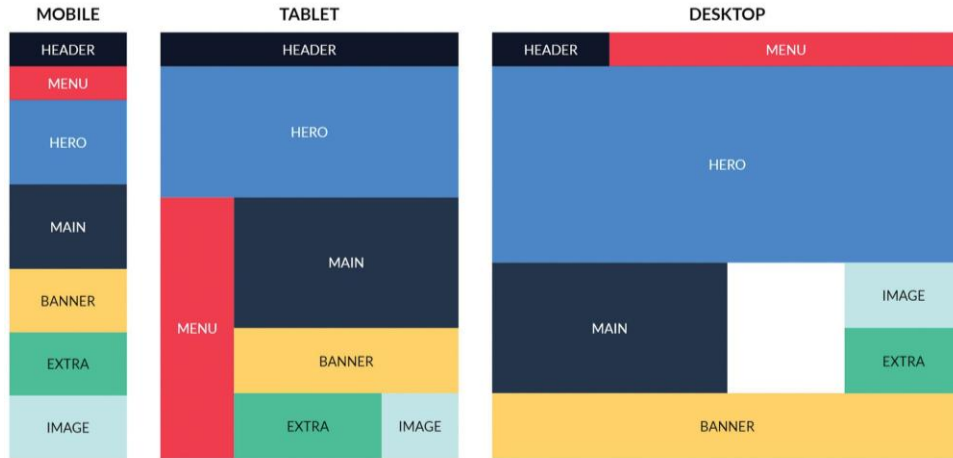

3) Choose the right grid layout tool/generator

Use a grid layout tool to customize a grid layout for your project. Here are several tools that you should consider:

Pen and paper - map out and iterate grid layout ideas as soon as possible

At the very beginning of your design process, you may need to brainstorm your grid layout using a pen and paper. Map out everything that pops in your mind. It helps you save a lot of time and gives you more freedom to iterate your ideas quickly.

Mockplus - provides auto grid layouts to streamline your design workflow

Mockplus, a one-stop online product design platform, offers users an auto grid layout which enables them to customize all the columns, rows, gutters, and blocks with ease. You can show or hide these grid guides based on your needs. The auto responsive layout helps you create a responsive website or mobile app with ease.
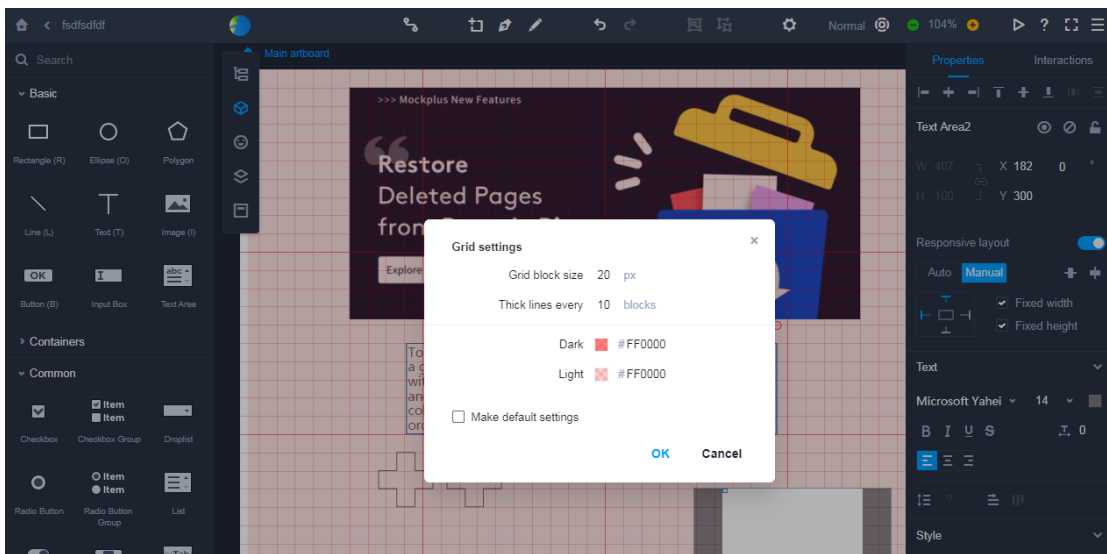

As an all-in-one design platform, Mockplus enables your entire team (designers, developers, product managers, clients, users and stakeholders) to work together on the same project. Your entire design workflow, such as designing, prototyping, commenting, collaborating and design handoff, is connected easily in one place.

Example Grid Set

The examples

The following examples include an image of how the example should look in a supporting browser, they each link to a page with more information about the technique being shown, code and a CodePen of the example. Unless otherwise noted these examples work in any browser supporting the up to date Grid Specification. *They will not work in IE10 or 11.*

For page layout examples see a collection of page layouts here.
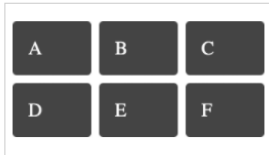
Defining a Grid

To define a grid use new values of the display property `grid` or `inline-grid`. You can then create column and row tracks.

View example | Read specification

Line-based placement

Positioning items on the grid using line numbers
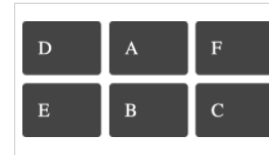
View example | Read specification

Line-based placement shorthand - grid-row and grid-column

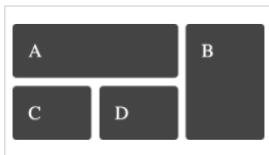Positioning items on the grid using the shorthand properties.
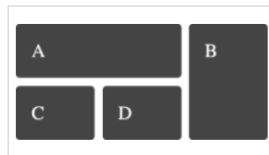
View example | Read specification

Line-based placement shorthand - grid-area

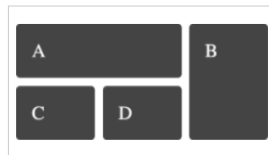Positioning items on the grid using the shorthand properties.
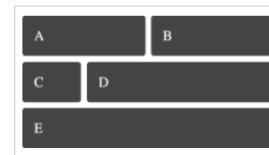
View example | Read specification

Line-based placement spanning tracks

Line-based placement spanning tracks with the span keyword

Line-based placement named lines

Line-based placement named lines with spans

UX design with Mood boards

What is a mood board?

Mood boards are visual panels that bring together different sensory references that create an emotional environment that works as a guiding thread for creative decisions.

Why use a mood board?

These panels are used to connect ideas in an abstract way, unifying the vision from stakeholders, users, and the design team. They work as a centralized asset repository and can be accessed at any time by the team. Mood boards are useful for:

Research documentation. Several research steps can be taken in the form of mood boards such as benchmarking research, definition of personas, and ideation of user interfaces.

Exploration and guidance for designers. At the beginning of the project, a mood board is a space where designers can explore their ideas freely, without judgment. When a board is concluded, it becomes a reference for the team throughout the project.

Unifying visions. An idea is, by definition abstract, and outlining thoughts is one of the most important roles of a digital or physical board. Different stakeholders can contribute with their visions and reach a common ground, making everyone more confident about the direction of the project.

Types of mood boards

A mood board can be physical or digital, and both have their values: Digital boards are quicker to assemble, format, and accept natively digital references such as animations and GIFs. Physical boards require greater effort to be formatted and can be exposed in physical environments such as on the wall of a working space.

In the physical version, it is possible to explore objects such as paints, fabrics, papers, metals, and perfumes more completely in addition to organic materials such as plants. Some of these elements, when reproduced digitally, lose parts of their meaning, such as those associated with touch or smell.

Digital boards, on the other hand, can take advantage of their native environment and aggregate an immense amount of information that becomes accessible in a much more practical way. This type of board favors remote teams and the media catalog, such as videos and animations.

What does in a mood board include?

It can include any reference, but the most important thing is the correlation and balance between all the elements that compose the mood board. Some common elements are:

Colors – Register the colors of the brand or competitors; try new palettes related to the emotions you want to explore within new concepts.

Images – There are many image options. It is possible to explore photographs that translate the desired concepts or even build a gallery of logos, icons, and illustrations for future reference.

Animations – Easily recorded on digital mood boards, animations contain emotional elements that make up a complete experience, such as easy curve references, progress bars, animated loading icons, interactions on scroll, or micro-interactions.

Fonts – Look for type families that can help you to compose your visual paths, reinforcing, or contrasting ideas present on the board.

Textures and Patterns – These are great ways to evoke affectional memories and can indirectly indicate established concepts.

Text – Organize your notes, insights, keywords, or quotes, along with other elements of the board, to emphasize your ideas.

How to make a mood board

There are many techniques for creating mood boards; it's important to understand which one best suits your project and creative team. In web or app design projects, a digital board is recommended to collect references from animations, micro-interactions, and typography; however, having a physical board in the office can be a constant reminder to everyone who sees it.

Follow these key steps for creating effective and user-centered mood boards,

Understand your purpose
Before you start collecting the pieces of the puzzle, choose the main path. Create a clear statement that spells out what emotion should be activated in a persona when they contact your solution:

"When Edith installs our app, she must be motivated to start exercising."

Find your tone
Setting the tone of the brand helps to prepare an effective mood board. A simple exercise is to choose some keywords that represent the team vision. The tone words can be registered on the board itself so that they are always accessible to everyone.

Gather data on the topic
Do a little more research on the topic before you start looking for visual references. Gather notes taken during meetings, survey data from users, and interviews with customers to try to extract insights for the project.

Define your values
When starting with a mood board, set clear values from the beginning, such as modern, fun, childish, colorful, or sporty. To facilitate the reference selection process, define three or four adjectives for your board.

Think big, then small
Start by defining large groups within the main theme and go deeper into each one, which will organize the discovery process.

Be selective
Don't simply put something on your mood board. Choose only what will make a difference in the direction of the project. If in doubt about very similar pieces, choose only one to represent that idea.

Visually organize your references
Use the size of each element to enhance its importance in the composition. Larger photos and larger phrases naturally function as prominent points during this organized chaos.

Where can you create your mood board?

There is no shortage of tool options to help designers gather references. These are some great options to start,

   Niice – This is one of the most complete solutions for creating mood boards. It allows several levels of customization, including support for video embeds and 3D models, as well as a convenient extension for browsers that facilitates the inclusion of any item on your boards.

   Savee – This gets straight to the point so you can create and share mood boards without complications. It also has options for synchronizing with Dropbox, with optimized printing and importing images from Instagram and Pinterest.

   Behance – You can save any project published on Behance on private or public mood boards within your profile. This is very useful when you need to collect many references without having to browse the web.

   Adobe XD – This is good option if you need to create a personalized experience without predefined templates. If you want to take it a step further, you can create interactive boards and custom flows in addition to plugins like Mimic that help you capture styles from any website.

Moodboard – This is a good choice if you need to create express mood boards.

Photoshop – If you want to have total creative control, this is the most powerful and versatile tool to build a board.

Key elements used in UX Design

What are the five elements of UX design?

The five elements of UX design is one of the most common frameworks used by UX designers to create successful designs.

The five elements (in order of abstract to concrete) consist of strategy, scope, structure, skeleton, and surface. Each layer depends and builds upon the layer below it.
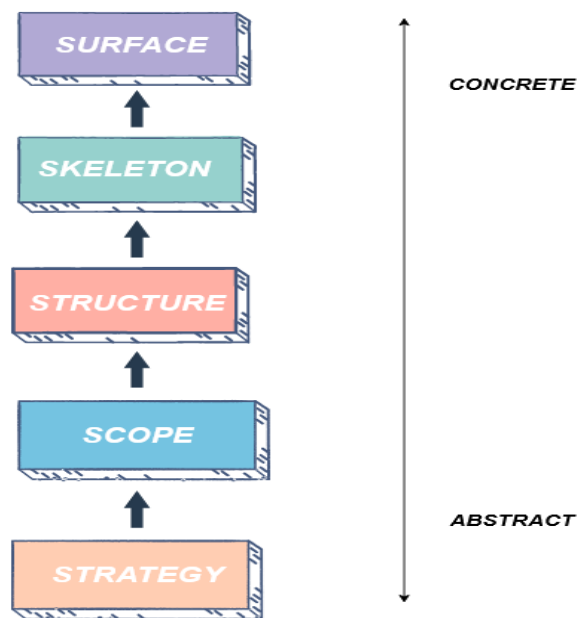
Strategy

The first layer is strategy. In this phase, the designer gathers information and lays the foundation while keeping in view the needs of the users and business objectives. The designer researches who the users and the end-users are, as well as their needs, pain points, etc.

Scope

In the next layer, the designer decides on the idea and type of content they are designing. They set their requirements and goals.

Functional requirements include functions and features that need to be added.
Content requirements, delineate the theme, images audio, videos that will help in creating value and fulfilling requirements.

Structure

The third layer is structure. Here the designer decides the organization of the design, and how the system will behave when the user interacts with the product.

Interaction design builds upon the functional requirements to define the function of the product and user interaction.

Information architecture builds upon the content requirements to define how the content will be structured and arranged.

Skeleton

This is the fourth layer. The designer puts together the previous pieces to determine the visual form of the design. Here, the designer decides the flow of information and movement from one screen to the next. The designer makes sure that navigation is smooth and the presentation of information facilitates user understanding.

Surface

This is the final layer. It is the amalgamation of the layers below. The designer decides on the layout of the visuals, typography, styling, and colors. The designer finalizes the final 'surface' that the user is going to interact with to make it easy to use and navigate.

Heuristic Evaluation process in UX design.

What is Heuristic Evaluation?

Heuristic evaluation is a process where experts use rules of thumb to measure the usability of user interfaces in independent walkthroughs and report issues. Evaluators use established heuristics (e.g., Nielsen-Molich's) and reveal insights that can help design teams enhance product usability from early in development.

Heuristic evaluation is a widely accepted discount evaluation method for diagnosing potential usability problems in user interfaces, in which a small number of usability experts systematically inspect a user interface and judge its compliance with a set of heuristics.

Heuristic Evaluation: Ten Commandments for Helpful Expert Analysis

In 1990, web usability pioneers Jakob Nielsen and Rolf Molich published the landmark article "Improving a Human-Computer Dialogue". It contained a set of principles—or heuristics—which industry specialists soon began to adopt to assess interfaces in human-computer interaction. A heuristic is a fast and practical way to solve problems or make decisions. In user experience (UX) design, professional evaluators use heuristic evaluation to systematically determine a design's/product's usability. As experts, they go through a checklist of criteria to find flaws which design teams overlooked. The Nielsen-Molich heuristics state that a system should:

1. Keep users informed about its status appropriately and promptly.
2. Show information in ways users understand from how the real world operates, and in the users'

language.
3. Offer users control and let them undo errors easily.
4. Be consistent so users aren't confused over what different words, icons, etc. mean.
5. Prevent errors – a system should either avoid conditions where errors arise or warn users before they take risky actions (e.g., "Are you sure you want to do this?" messages).
6. Have visible information, instructions, etc. to let users recognize options, actions, etc. instead of forcing them to rely on memory.
7. Be flexible so experienced users find faster ways to attain goals.
8. Have no clutter, containing only relevant information for current tasks.
9. Provide plain-language help regarding errors and solutions.
10. List concise steps in lean, searchable documentation for overcoming problems.

1. Keep users informed about its status appropriately and promptly : visibility of system status

The design should always keep users informed about what is going on, through appropriate feedback within a reasonable amount of time. When users know the current system status, they learn the outcome of their prior interactions and determine next steps. Predictable interactions create trust in the product as well as the brand.

2. Show information in ways users understand from how the real world operates, and in the users' language : Match between the system and the real world

The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order.
The way you should design depends very much on your specific users. Terms, concepts, icons, and images that seem perfectly clear to you and your colleagues may be unfamiliar or confusing to your users.
When a design's controls follow real-world conventions and correspond to desired outcomes (called natural mapping), it's easier for users to learn and remember how the interface works. This helps to build an experience that feels intuitive.

3. Offer users control and let them undo errors easily : user control and freedom

Users often perform actions by mistake. They need a clearly marked "emergency exit" to leave the unwanted action without having to go through an extended process.
When it's easy for people to back out of a process or undo an action, it fosters a sense of freedom and confidence. Exits allow users to remain in control of the system and avoid getting stuck and feeling frustrated.

4. Be consistent : consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions. Jakob's Law states that people spend most of their time using digital products other than yours. Users' experiences with those other products set their expectations. Failing to maintain consistency may increase the users' cognitive load by forcing them to learn something new.

5. Prevent errors: error prevention

Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Either eliminate error-prone conditions, or check for them and present users with a confirmation option before they commit to the action.

There are two types of errors: slips and mistakes. Slips are unconscious errors caused by inattention. Mistakes are conscious errors based on a mismatch between the user's mental model and the design.

6. *Have visible information, instructions : recognition rather than recall*

Minimize the user's memory load by making elements, actions, and options visible. The user should not have to remember information from one part of the interface to another. Information required to use the design (e.g. field labels or menu items) should be visible or easily retrievable when needed.

Humans have limited short-term memories. Interfaces that promote recognition reduce the amount of cognitive effort required from users.

7. *Be flexible so experienced users find faster ways to attain goals: flexibility and efficiency of use*

Shortcuts — hidden from novice users — may speed up the interaction for the expert user such that the design can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Flexible processes can be carried out in different ways, so that people can pick whichever method works for them.

8. *Have no clutter: aesthetic and minimalist design*

Interfaces should not contain information which is irrelevant or rarely needed. Every extra unit of information in an interface competes with the relevant units of information and diminishes their relative visibility. Ensure that the visual elements of the interface support the user's primary goals.

9. *Provide plain-language help regarding errors and solutions: help users recognize, diagnose, and recover from errors*

Error messages should be expressed in plain language (no error codes), precisely indicate the problem, and constructively suggest a solution.These error messages should also be presented with visual treatments that will help users notice and recognize them.

10. *List concise steps in lean, searchable documentation for overcoming problems: Help and documentation*

It's best if the system doesn't need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks.Help and documentation content should be easy to search and focused on the user's task. Keep it concise, and list concrete steps that need to be carried out.

How to Conduct a Heuristic Evaluation?

To conduct a heuristic evaluation, you can follow these steps:

1. Know what to test and how – Whether it's the entire product or one procedure, clearly define the parameters of what to test and the objective.
2. Know your users and have clear definitions of the target audience's goals, contexts, etc. User personas can help evaluators see things from the users' perspectives.
3. Select 3–5 evaluators, ensuring their expertise in usability and the relevant industry.
4. Define the heuristics (around 5–10) – This will depend on the nature of the system/product/design. Consider adopting/adapting the Nielsen-Molich heuristics and/or using/defining others.

5. Brief evaluators on what to cover in a selection of tasks, suggesting a scale of severity codes (e.g., critical) to flag issues.
6. 1st Walkthrough – Have evaluators use the product freely so they can identify elements to analyze.
7. 2nd Walkthrough – Evaluators scrutinize individual elements according to the heuristics. They also examine how these fit into the overall design, clearly recording all issues encountered.
8. Debrief evaluators in a session so they can collate results for analysis and suggest fixes.

What's the difference between heuristic evaluation and user testing?

A heuristic evaluation can be used at any stage of a site's development, including in the early stages when developing paper prototypes. Nielsen recommends using it in conjunction with user testing. Administering the heuristic evaluation before user testing allows many of the 'obvious' errors to be caught before engaging in time-consuming and expensive user testing. Both will largely uncover different insights and errors to be corrected. Ideally, you would want to do both at several different stages of development. As the more obvious problems are discovered and solved the less-odious ones will be easier to spot and correct.

The Stages of UX Design Process

What is UX design?

Let's talk about UX design first. In 1988 cognitive psychologist and designer Don Norman first introduced the term UX. UX design or UXD forms the digital face of a product — leading users around its features and offering them something that influences how they feel. Content, structure, and navigation all work together to give someone a meaningful experience.

It's a process that defines the interaction between the user and the product. UX extends traditional human-computer interaction (HCI) by addressing the user's goal, journey, and pain point and proposing an effective solution.

The purpose and benefits of UXD

The primary purpose of UXD is to design such an experience that helps users to complete a particular product goal efficiently.

A well-developed UXD can significantly improve the satisfaction of the users. That leads to higher conversion rates, growing business and revenue.

Here are some key benefits of good UXD.

- It increases user acquisition and loyalty.
- It maximizes opportunities to generate more traffic and business.
- It optimizes resources. Also helps to reduce time and costs for development.
- It helps to design features that are more optimized for the product goals.
- It helps to reduce error resolving and maintenance cost.

What is UX Design Process

It is an iterative process that explores the design solutions for a specific set of UX problems.

On each stage, we iterate through different design decisions and solutions. Also, we evaluate existing design decisions and propose improvements.

Each move involves relevant stakeholders of the product. So that every design made is efficient and accessible.

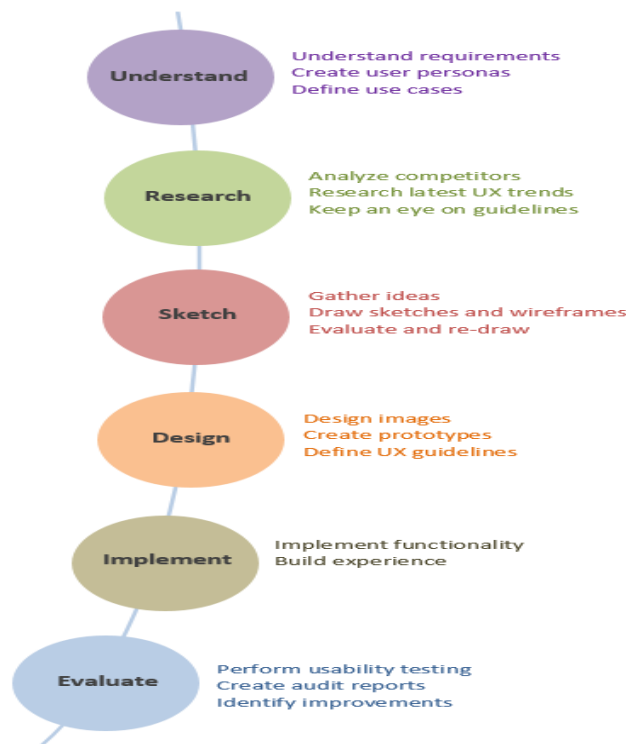Importance of UX Design Process

Here is some important aspect of UX Design Process:

- By following a standard design process, we can be more efficient and transparent. Therefore, we have a tested and refined design solution.
- With each iteration, we can revalidate our decisions from different perspectives. And make them more refined.
- It also reduces risk because we use a tested solution — no guesswork is necessary.
- It also helps to track and cooperate easily with team members and stakeholders.
- It helps us to find solutions for issues we might not even know that exist.
- Ultimately, we will have a well-worked product that is easy to use and that the customer wants to use.

Stages of UX Design Process

A successful UX design process might be different for you from what we have outlined here. It entirely depends on your team, product or existing processes.

Typically the design process consists of six stages.

Understand
Understand requirements
Create user personas
Define use cases

Research
Analyze competitors
Research latest UX trends
Keep an eye on guidelines

Sketch
Gather ideas
Draw sketches and wireframes
Evaluate and re-draw

Design
Design images
Create prototypes
Define UX guidelines

Implement
Implement functionality
Build experience

Evaluate
Perform usability testing
Create audit reports
Identify improvements

1. Understanding the problem

Before you even start to look for a solution first, you need to understand the problem. We need a clear idea about the user goals, pain points and what is blocking them to perform a specific task. We can

not find a solution unless we know what problem we are solving.

2. Conducting Researches

After we successfully pinned down the problems, the next thing we do is the research. It is the heart of product development. The knowledge and information we gather in this step will be responsible for the product fundamentals and functionalities. We also define relevant user personas and journeys in this step. User interviews, surveys, workshops are some widely used research methods.

3. Sketching and prototyping the decision

This stage involves the visual definition of a proposed design solution. It includes sketches, drawing, paper mockup, and interactive prototyping, to name but a few. Testing and evaluation of design decisions are part of this stage. Design team builds mockups and shares with stakeholders and users to get their input.

4.Building Design

In this step, we build the actual design. Turn the mockups and wireframes to a visual design with themes and styles. We also build a design system that will act as a source of truth for all visual implementation. Here are some primary things we build in the design step.

- Product Navigation
- User journey
- Mockups and wireframes
- Visual assets including, images, illustrations and icons.

5. Implementation of the design

The technical team can start implementation while the design phase is in progress. Since they are participating in every stage and iteration through the process, they have a clear idea about the design.

It is a standard practice that the design team is involved in the implementation step. So that they can help developers to explain various aspects of the designs. Also, designers can make some minor changes that might be required.

6. Validate designs

So we finished developing the first version of the product. It's time to roll it out to production. An important part of the job comes here for the design team, validating the design. We need to monitor how our users use our product, how they are communicating, can they reach the goal that they desire? If not, what is wrong?

After this last stage, the process will restart again depending on required changes. The whole process goes on during the entire lifecycle of the product.

Competitor in UX design

What are a UX Competitor Analysis and How do You do One?

UX competitor analysis is one of many UX research.There is a lot that goes into doing a thorough UX competitor analysis, but at its heart, a competitor analysis consists of two basic phases:

- Knowing how to research properly and understand exactly what information you are looking for.
- Synthesizing that information before acting on your findings.

A competitor analysis means knowing your product or service like the back of your hand and stacking that up against the competition out there. There are standard principles (aka heuristics and heuristic evaluation) for user interface design which can be used when conducting a competitor analysis. These principles are a general guide and are not set in stone, so you are free to create your own set of standards. These can include anything from specific UI patterns to interaction models.

Daniel Newman at Forbes points out that "if you don't look at the data showing what you're doing wrong in CX and UX, customers will leave your site, store, or app. It's no longer a question. There are simply too many other options available to accept a less-than-stellar experience"

Why do a UX Competitor Analysis?

There is a multitude of reasons why you would want to carry out a UX competitor analysis. One simple reason is that you have not done one before. It is always beneficial for UX designers to acquaint themselves with research methods to better inform their design practice. Aside from that, however, there are some other important reasons why you would want to do a UX competitor analysis:

- To help you solve usability problems, as per this definition of usability
- To understand where your product or service stands in the market
- To inform the design process
- To know the strengths and weaknesses of your competition
- To have reliable evidence when making product changes
- To focus your efforts in a target market

The Benefits of Carrying out a UX Competitor Analysis

Carrying out a UX competitor analysis will empower your business choices. But how? Through researching the competition, you can glean insights from the data you collect and make informed UX design decisions.

1. Market Gaps

A competitor analysis allows UX designers to find out if there are any gaps in the market. For example, through your research, you may discover a feature that your competitors' products do not have. Imagine you identify a feature that would help an underserved market, let us say students in this case. By understanding the gap (that is, students' likes and dislikes, interests, values, budget etc.) you will be able to plan for this feature better and make sure of its popularity among target users.

2. Developing Products or Services

As UXers, we iterate products and services countless times. But these iterations must be backed up with evidence and research. When you identify market gaps, like in the previous example, you can fill them by developing your product or service accordingly.

To illustrate, say you offer a monthly and annual subscription for a non-descript music service. After carrying out your competitor research, you have found out that these are the two most common payment methods. But you also discovered through your research that many of your users are students who signed up to the free version and then disappeared. You could use these insights to develop a new subscription at a discounted student price.

That is just one way of using what you learn from competitor analysis to improve your product.

3. Are there any Limitations to a Competitor Analysis?

Unfortunately, a competitor analysis is not the solution to all your UX woes. While it is preferable to conduct a UX competitor analysis and it makes sound business sense, there are some pitfalls to the method.

James R Lucas in his book Fatal Illusions: Shedding a Dozen Unrealities That Can Keep Your Organization from Success says, "as long as we appear to be doing better than someone else, we can feel that we must be doing well, so we don't need to change."

Lucas perfectly highlights one of the limitations of the UX competitor analysis: that you can be on the same level, if not higher than your competitor, but this does not give you information to really innovate and lead. If you spend too much time looking at a competitive analysis, you may be missing the mark when it comes to creating truly innovative solutions. You can use your insights to create a strategy that will generate an asset or skill that competitors do not have, but that is down to your ability, not the competitor analysis.

Likewise, another limitation to the UX competitor analysis is that the insights gleaned from the information are only as good as the person understanding and interpreting them. Jennifer Cardello points out that the biggest issues with analytics is that it can become a "distracting black hole of "interesting" data without actionable insights." Depending on how well you can evaluate the information will determine how valuable that information is.

How to do a UX Competitor Analysis?

1. Understand your goals

Why are you doing this competitor analysis? What do you hope to achieve? Will this research impact UX decisions? Your goals should ideally be as specific as possible and hopefully assessable so consider the issues you're trying to address with the competitor analysis.

Keep your goals at the front of your mind when carrying out your analysis so you can always refer to them without losing sight.

2. 'Really' know your competition

At this point, you might want to open a Google spreadsheet or chart and start creating a table of information. Jaime Levy has a comprehensive outline for creating a competitive analysis matrix. A good number at the beginning stage is around 5-10 direct and indirect competitors, so you can easily maintain and track what your competition is doing.

- Direct competition consists of those people and companies who are doing what you do already. You share the same customers (or better still, you want their customers to become yours) and

they offer the same product or service that you do.

- Indirect competition is composed of those who offer something similar to what you offer. Maybe it is not the first part of their product or service but the second or third.

The nature of business means that competition can pop up at anytime, anywhere. Keep a note of your competitors as they arise, so you do not forget them.

3. Look for commonalities among competitors

When looking for commonalities, it is a good idea to write down the actions users can perform, as well as the user journey of competitor products and services, and see if they match with what you are offering. Things to consider:

- The tone and copy of the competitor
- Good and bad features
- User reviews
- Wait/load times
- Customer service
- Design

Do not forget about the set of standards mentioned earlier which you can refer to. All of this can be put into your spreadsheet for reference.

4. Analyze and summarise

When analysing your UX research, create a small summary of what you have found out as well as what impact the information will have. This stage is perfect for identifying design opportunities because you understand your competitors' flaws (as well as your own).

Your analysis and summary can be used to convince team members, and stakeholders of any design changes you think would be beneficial or to argue for innovation.

5. Present your UX competitor analysis

After you have compiled your research, analysed it and synthesised the information into actionable insights, it is time to prepare a presentation of your findings for clients or stakeholders. This is your opportunity to act on those findings. You can even calculate the ROI of your UX activities to add weight to your findings.

Create a PowerPoint presentation containing the interesting information, backed up with evidence. It is vital that you discuss the impact of your research, more than the general findings: the impact is what can be transformed into actions which can transform business.

Focus on any surprises that came out of your research as this will be more engaging for your audience. Dharmesh Mistry has a few tips on just how to present your research effectively.

Common UX Research Pitfalls

Susan Farrell over at NNG has created a UX research cheat sheet to save you from falling foul of common UX research pitfalls.

A common error when carrying out a UX competitor analysis is the never-ending list. The last

thing you want is to be drowning in information without any insights. That is why knowing your goals from the outset can help prevent this and give you focus.

Since the data is only as good as the person analysing it, to save yourself from misinterpreting the information you have compiled, it is advisable that you share your findings with a few other people (preferably someone who handles and interprets data regularly).

It can be tempting to reach preposterous conclusions from the data, especially when you factor in a generous dose of wishful thinking. Asking for advice means you can make sure the data and findings you present are accurate. UX designers should brush up on their analytical skills before attempting to do any analysis.