UX and visualization design: Tips, tricks and best practices

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Designing the Product

Designing the Experience
Agenda

• Introduction
• UI/UX development overview
• Visual design guidelines
Design direction for effective and usable solutions

When starting a project, we need to start with as much information as possible

What problem are we solving?

How does it affect the user?

What are the requirements?

Is the delivery mechanism browser, mobile, on-premise, or all of these?

...
User experience

We want the user to experience consistency and predictability across the solution

What and Why

• Design guidelines are a set of principles and recommendations that are used to ensure consistency and best practices in the design of a solution.

• It is a common language used to communicate cohesively across different teams with the goal of building well-designed intuitive products.

• It’s important to apply design principles that ensure clarity, consistency, and ease of use.

Benefits

• Eliminate inconsistencies.

• Save time

• UI and visual consistency

• Behavioral consistency

• Increased design and development efficiency

• Reduced effort in maintaining multiple applications
Operational systems development can be divided into 4 key components.
Project development overview

Collaboration

• The team collate the data gathering and resource handling as the very first task

• Once data handling has been confirmed, work can start on interpreting the findings by gathering User Personas, Information Architecture, product expectations, potential pain points, inspiration, and feedback.

• Development Team assess the feasibility of proposed ideas in alignment with both Information Architecture and UX.

• When alignment is achieved, the creation of style design and data visualization can be developed.

The role of UX is to be the bridge between all production streams as well as the customer
UX encompasses UI

**User Experience (UX)**
Provides the users’ overall experience with the brand, product or service

**User Interface (UI)**
Provides interaction between users and computer systems, software and applications.
UX and UI

What is the difference
Design principles

Fundamental ideas about the practice of visual design

- Give context
- Keep it simple
- Don’t lead users to a dead end.
- Spend your time solving business problems.
- Use the smallest number of user flows.
- Enable users to anticipate the system.
- Rely on existing User Experience and User Interface conventions.
Foundations

Common concepts to all design practices

- Personas
- Information architecture
- Layout
- Data visualization
- Elevation
- Color
- Iconography
- Accessibility
- Typography
- Writing style
- Internationalization
UI/UX development overview
Create additional value in the solution by reducing user fatigue, by reducing clutter, creating consistency, building alignment and balance in the displays and making things easy to find.
Project development process

4 main streams of productions
UX process

3 fundamental steps

1. Understand
   To align with the customers' needs and establish the challenges
   Discovery

2. Formulate
   To interpret the data integration type and form into visuals
   Visual Development

3. Validate
   To initiate a design that addresses all requirements from the customer
   Implementation
UX process

Understand

Method

- Gather Stakeholder requirements
- Interview End Users
- (Voting sessions / Surveys)
- Inspiration for Data Visualisation Types
- Establish constraints

Tools

- Figma
- Mural
- Power Point
UX process

Method
- Analyse findings
- Outline Work Domain
- Develop User Personas
- Devise User Flows
- Discuss concepts

Tools
- Mural
- Figma
- Adobe Photoshop
- Adobe XD
UX process

Method
• Present options
• Share prototypes
• Gather feedback
• Input realistic data
• Revisit steps as necessary

Tools
• Mural
• Figma
• Adobe Photoshop
• Adobe XD
UX process

Example
User modelling

Feedback from the end user through the 3 key processes

1. User Personas
2. User Journeys
3. User Testing
User modelling

A User Persona is a semi-fictional character based on the current (or ideal) customer.
The navigational model must be created before the navigation can be implemented

- The asset model is key to defining the navigation hierarchy for the solution and presenting KPIs and Visualizations at the appropriate level of the model in context.

- The model could be Geographic, asset based, or process based. There are multiple types of Navigation models

1 - Asset model
2 - Action-based model
3 - Process model

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  1. Asset model
  2. Action-based model
  3. Process model

...
Visual design guidelines
Type of Displays

Command Center

Remote Operations Center

Casual User

Large Structured Team

Subject Matter Experts

Desktop

Tablet

Mobile

Individual Contributor
Different Layout Structure

1. Header
2. Navigation Bar
3. Body
4. Footer
5. Side Panels
6. Navigation Footer (Mobile only)
Different Layout Structure

1. Header
2. Navigation Bar
3. Body
4. Footer
5. Side Panels
6. Navigation Footer (Mobile only)
Different Layout Structure

1. Header
2. Navigation Bar
3. Body
4. Footer
5. Side Panels
6. Navigation Footer (Mobile only)
Different Layout Structure

1. Header
2. Navigation Bar
3. Body
4. Footer
5. Side Panels
6. Navigation Footer (Mobile only)
Screen profiles and layouts (video demo)
Form factors

The design was always to focus on supporting all form factors:

- Mobile
- Tablet
- Laptop
- Dual
- Video Wall
Use a design for each form factor.....

Typically there are three formats: Phone (portrait), Tablet (landscape) (optional), Desktop (Landscape) Single Screen.

- If you are familiar with website design - every website has this.
Understanding pixel density

In general, phones compensate for different screens - so you design in one size, the phone then uses a multiplication factor to use pixels.
How to accomplish...

Create design frames

**1920/1080**
- **Top bar:** 1920 / 44 px
- **Awareness bar:** 1920 / 70 px
- **Navigation bar:** 1920 / 60 px
- **Block:** 336 / 262 px
- **Gutters:** 45 px
- **Gutter height:** 30 px

**1080/720**
- **Top bar:** 1080 / 24 px
- **Awareness bar:** 1080 / 55 px
- **Navigation bar:** 1080 / 55 px
- **Block:** 336 / 262 px
- **Gutters:** 20 px
- **Gutter height:** 20 px

**375/667**
- **Top bar:** 375 / 23 px
- **Awareness bar:** in the menu
- **Navigation bar:** 375 / 105 px
- **Block:** 336 / 262 px
- **Gutters:** 20 px
- **Gutter height:** 20 + 19 px
Design grid

Layout size
1920 (W) x 1080 (H)

1. Header: 1920 x 50
2. Navigation Bar: 1920 x 50
3. Body: 1920 x 930
4. Footer: 1920 x 50

20 column x 12 row grid system with 10 px breathing white space

White space 13px height
White space 14px Width
White space 15px height
White space 14px Width
Body grid layouts (examples)
Single screen examples
Reusability & standardization
Using components
Themes

Light Theme

Dark Theme
## Color palette & typography

### Accent Color

<table>
<thead>
<tr>
<th>Default</th>
<th>Intensity5</th>
<th>Intensity4</th>
<th>Intensity3</th>
<th>Intensity2</th>
<th>Intensity1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Alerts

- **Warning**
- **Alert**

### General

- **Background**
- **Surface**

### Interaction

- **Selected**
- **Button**

### Chart

- **Filled**
- **Unfilled**
- **Axis**
- **Limits**
- **Target**

### Text

- **Heading**: Roboto 14px Regular
- **Title**: Roboto 12px Regular
- **Descriptor**: Roboto 10px Regular
- **Actual Value**: Roboto 18px Bold
- **Tagname**: Roboto 12px Bold
- **Setpoint**: Roboto 18px Regular
Contrast

Make sure that elements and images have sufficient contrast to differentiate between them, regardless of the accent color or theme.

When considering what colors to use in your application, accessibility should be a primary concern. Use the guidance below to make sure your application is accessible to as many users as possible.

Note: Every Contrast should pass AAA or AA accessibility test
Color blindness

Some examples what colorblind user view
Color blindness

Extra alerts for the Colorblind user
Themes in action
The User Experience Design team

The UX team can support other teams as they adopt the process, with context, materials and resources

The team has a wide range and mix of skills in many of the following areas:

- Psychology
- Research
- Problem solving
- Observation and attention to detail
- Prototype and design
- Inquisitiveness and empathy
- Understanding user needs and wants
- Analytical thinking
- Perceptiveness
Questions?
Please wait for the microphone.
State your name and company.

Please remember to...
Navigate to this session in the mobile app to complete the survey.

Thank you!
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