User Experience for Consumer Electronics

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DESIGN & USABILITY CENTER
User Experience (UX) Process for CE

- **Specify the context of use**
  Identify the people who will use the product, what they will use it for, and under what conditions they will use it.

- **Specify requirements**
  Identify any business requirements or user goals that must be met for the product to be successful.

- **Create design solutions**
  This part of the process may be done in stages, building from a rough concept to a complete design.

- **Evaluate designs**
  The most important part of this process is that evaluation - ideally through usability testing with actual users - is as integral as quality testing is to good software development.
UX for CE

- Discovery
- Design and Evaluation
- Benchmarking
The UX Toolkit

**Discovery**
- Stakeholder visioning
- Literature review
- Personas
- Surveys
- Interviews and focus groups
- Ethnographic observation
- Open card sorting
- Task flow analysis
- Use case scenarios

**Design & Evaluation**
- Expert UX review
- Competitive assessment
- Paper prototype testing
- Closed card sorting
- Usability testing
- Remote testing
- Eye tracking
- A/B testing
- Wireframe designs

**Benchmarking**
- Establishing UX metrics
- Competitive analysis
- Online surveys
- Trend analysis
- Large-scale usability testing

**Concept Development** ➔ **Early Structural Design** ➔ **Detailed and Visual Design** ➔ **Production** ➔ **Release**
Voice of the Customer (VOC)

- Translate unexpressed needs
- What is the real goal the customer is expressing?
- What is the customer’s environment like?
- What are the terminology they use?
- What is their mental model?
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Concept Development
Early Structural Design
Detailed and Visual Design
Production
Release
Developing User Requirements

- Translate voice of customer to concrete design issues
- Functional issues
- Interaction models
- User Interface Modalities
- Customer needs
User Personas

- User demographics
- Market segments
- User mental model
- User environment and language
- User goals

User Requirements
- Operation specifications
- Workflow specifications
Voice of the Customer: Field Research

- Observation of product usage in natural environment
- Probing questions about usage, goals, motivations, task flows, and requirements
- Validate designs in the real world
- Greater customer insight
- Define user requirements
- Sparks innovation
Discovery: Focus Groups/Group Exercises

- Explore design concepts with a group of targeted customers or prospects
- Compare design alternatives, early prototypes, and wire frames
- Additional activities might include sketching, card sorting, or paired-comparisons
Design & Evaluation: Card Sorting

- Technique to understand users’ mental models about a product or system
- Drives information architecture, navigation, content organization, menu structures, and labeling
- In-person card sorting provides insight into groupings and labels
- Remote card sorting techniques allow for larger sample sizes and geographic dispersion of participants
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Eye tracking technology collects data about where participants are looking in real time.

Answers questions such as:
- How much time is spent looking at different objects?
- What do participants notice first?
- What regions of the display receive the most attention?
- How long does it take a participant to notice an object?

Test with static images, websites, print media, video, or commercials.
Lab, home or field-based studies.
Q Sensor

- Galvanic Skin response tracks emotional engagement
- Provides additional data points for analyzing user experience
Consumer Electronics: Usability Testing

- 1:1 sessions reveal the user experience, including significant usability issues, satisfaction drivers, and impacts on efficiency
- Typically task-based, but also may include open exploration
- Qualitative insights through think-aloud protocol and probing questions
- Collect data on task success, completion times, ease ratings, and overall scorecards
- Testing in lab setting, remote, or in the field
Customer unexpressed and unmet needs

Look at the forest for the trees: what is the big picture, what is the details

What are the goals?

What are their frustrations?
Design & Evaluation: Expert Reviews

- Evaluate the user experience of any product or system based on industry-wide best practices
- Evaluation based on common use scenarios and targeted users
- Focus on navigation, terminology, information hierarchy, and consistency (visual and interaction)
- Major usability issues are identified, with rationale and design recommendations
• Detailed early designs representing core structural elements of design

• Basis for early usability testing of navigation and information architecture

• Allow for quick evaluation of design foundation without requiring significant development effort
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Concept Development → Early Structural Design → Detailed and Visual Design → Production → Release
Benchmarking

- Establishing Metrics, Data analysis
- Online Surveys
- Large Scale unmoderated tests
Integration of UCD—when is it really effective

- The earlier the better

- When you can’t get in the process early, get in whenever you can

- Value add to integrating user needs at any point, since the nature of technology is that it is not as smart as the people that use it
User Experience Design for Consumer Electronics

Q & A

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