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Study Notes on Usability, Agile, Heuristic ,User Centered Design

WHAT IS USABILITY?

Usability is a quality attribute that assesses how easy user interfaces are to use. The word "usability" also refers to methods for improving ease-of-use during the design process.

The Five Components of Usability

- **Efficiency: Speed of task execution post-learning.**
- **Memorability: Ease of reestablishing proficiency after inactivity.**
- **Errors: Frequency, severity, and recovery ease.**
- **Satisfaction: Overall pleasantness of the experience.**

Types of Disabilities

Visual Impairments

Range from low-vision to complete blindness.

Issues arise from poor text size/color choices and hand-eye coordination tasks.

Movement Impairments

Difficulty using standard keyboards/mice due to poor muscle control.

Challenges include simultaneous key pressing and accidental key strikes.

Hearing Impairments

Range from partial to profound deafness.

Sound-only information in applications poses usability challenges.

Cognitive and Language Impairments

From dyslexia to difficulty in comprehension and problem-solving.

Complex displays or language choices can hinder computer usage.

AGILE MANIFESTO

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan

Agile Frameworks

Kanban: Real-time capacity communication and work transparency.

Scrum: Encourages teamwork, learning, and continuous improvement.

WHAT IS USER-CENTERED DESIGN ?

The 7 Factors that Influence User Experience

1. **Useful: Products must serve a purpose and provide value.**
2. **Usable: Users should efficiently achieve their goals with ease.**
3. **Findable: Content should be easily located and structured.**
4. **Credible: Users must trust the product and its information.**
5. **Desirable: Emotional appeal and brand perception matter.**
6. **Accessible: All users, including those with disabilities, should access the product.**
7. **Valuable: Products must deliver value to both business and users.**

USER-CENTERED DESIGN PRINCIPLES

- Users are involved in the design process from the very beginning. Critical design decisions are evaluated based on how they work for end-users.
- Importance of requirement clarification. The product team always tries to align business requirements with user's needs.
- Introducing user feedback loop in the product life cycle. The product team collects and analyzes feedback from users regularly. This information helps the team to make more user-focused decisions.
- Iterative design process. The product team constantly works on improving user experience; it introduces changes gradually as it gains more understanding about their target audience.

Modeling Techniques

Descriptive Modelling:

Utilizes tools such as storyboards and user journeys to depict user interactions and experiences with the product or system.

Task-Oriented Modelling:

Focuses on breaking down user activities into goal-directed tasks, allowing for a more granular understanding of user interactions.

Process-Oriented Modelling:

Links individual tasks together to achieve broader, longer-term goals, providing a holistic view of the user's journey and overall system functionality.

Usability Heuristics

Visibility of System Status

Example of Usability Heuristic #1
You Are Here indicators on mall maps show people where they currently are, to help them understand where to go next.

Match Between System and Real World

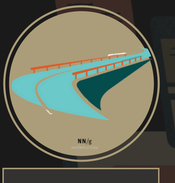
Example of Usability Heuristic #2:
When stovetop controls match the layout of heating elements, users can quickly understand which control maps to which heating element.

User Control and Freedom

Example of Usability Heuristic #3
Digital spaces need quick emergency exits, just like physical spaces do.

Consistency and standards

Example of Usability Heuristic #4:
Check-in counters are usually located at the front of hotels. This consistency meets customers' expectations.

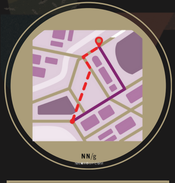


Error prevention

Example of Usability Heuristic #5
Guard rails on curvy mountain roads prevent drivers from falling off cliffs.

Recognition rather than recall

Example of Usability Heuristic #6
Recognizing capitals is easier than recalling them. Most would answer "Is Lisbon Portugal's capital?" over "What's the capital of Portugal?"



Flexibility and efficiency of use

Example of Usability Heuristic #7
Regular routes are listed on maps, but locals with knowledge of the area can take shortcuts.

Aesthetic and minimalist design

Example of Usability Heuristic #8
An ornate teapot may have excessive decorative elements, like an uncomfortable handle or hard-to-wash nozzle, that can interfere with usability.

Help users recognize, diagnose, and recover from errors

Example of Usability Heuristic #9
Wrong way signs on the road remind drivers that they are heading in the wrong direction and ask them to stop.

Help and documentation

Example of Usability Heuristic #10
Information kiosks at airports are easily recognizable and solve customers' problems in context and immediately.