HDCC208N

Design and Users

People open these incorrectly! Why?

https://medium.muz.li/a-design-lesson-from-a-sugar-stick-9ef86f756412
What has made good design hard and/or infrequent in the past?

Some institutional thoughts…

- No one on the team is charged with making sure the UI is user-friendly or the person in charge has little overall power to effect change.
- It’s not given consideration until too late in the process.
- Team biases/"engineering" culture.
- Things falls behind schedule and the UI is seen as least critical to fine-tune.
  - In general, seen as costly in terms of time and money.
- Non-tech designers might not be connected enough to technical realities.
Broader Challenges

• Too many people/preferences.
• New technologies can make old approaches obsolete quickly.

Current State of Design

Think of software/hardware that you like a lot or dislike in some way and write each one down on a sticky note (indicating L or D on top) so we can look for patterns…
User-Centered Design

We could design the product with a simple point-and-click interface...

Or we could require the user to choose among thousands of poorly documented commands, each of which must be typed exactly right on the first try.

Bear in mind, we'll never meet a customer ourselves.

Make it so they have to reboot after every typo.


Your user requirements include four hundred features.

Do you realize that no human would be able to use a product with that level of complexity?

Good point. I'd better add "easy to use" to the list.

There are several ways to think about design other than system/tech-centered.

Commonly used phrases:
• User-Centered
• Task-Centered

Less commonly used, but worth considering:
• Coolness-Centered
• Joy-Centered
“The Cool Project”
User-centered project that looked to learn what users thought made products “cool” to use (that then turned into a business service it seems).


Needs, Activities, and Relationships

- Maslow’s Needs Pyramid
- Shneiderman’s Stages of Human Activities and Circles of Relationships
User-Centered Design
The user should always be in your thoughts.

• Remember, part of generating real tasks was finding real potential users…
• Good design will consider the user’s:
  – Abilities
  – Needs
  – Context
  – Tasks

Golden rule of interface design:
“Know The User”

Idea Generation: “Ideation”
The process of “idea generation” can include a fairly rapid cycle of

• Brainstorming ideas, even at a “blue sky” level.
• Prototyping and developing the ones that jump out as having potential for immediate (could be innovative new approaches).

until you are ready to lock in on a final design to implement.

NOTE: Even after “finalizing” your user needs assessment and design, you should still do iterative development, confirming you are on the right path as you go.
Involving the User

There tend to be four levels of user involvement discussed for software/hardware design/interaction, codified by Allison Druin around the year 2000.

- User (things are created, distributed, used, then complaints and suggestions, etc. come in)
- Tester (commonly the “beta test” stage where an almost-completed system is used by actual users before it goes into full release, sometimes at the “alpha” stage – this has shifted to “live beta” which is really just “User” above)
- Informant (example users are consulted on a regular basis for design ideas and feedback)
- Design Partner (example users are brought in as members of the design team)

New ideas need new techniques…

Saying “let’s involve the user” might sound easier than it actually is.

- Different levels of involvement lead to different outcomes.
- Need techniques to provide ways for the user to express their ideas and opinions.
  - Different techniques for different types of users.
- Cultural shifts might be needed to have “buy-in” on both sides (and to see it as all one big side).
Involve the Users

- Talk to potential users (seems obvious but isn’t).
- Interview users more formally (find out more about their culture, expectations, abilities, surroundings).
- Explain what you are planning and welcome comments, criticisms, suggestions for change.
- Have them try “beta” versions early enough that changes can still be made (not simply shaking out the coding bugs).
- Can even have them be part of the design team!

User Diversity

It is important to note that the users that you think will benefit form what you are creating might only be a subset of the actual set of users that will benefit from, or make use of, your technology.

Some assistive technologies that were “meant” for users with hearing or vision impairments are used by “everyday” users today.
User-Centered System Design

... is based on understanding the domain of work or play in which people are engaged and in which they interact with computers, and programming computers to facilitate human action...

Three assumptions

• The result of a good design is a satisfied customer.
• The process of design is a collaboration between designers and customers. The design evolves and adapts to their changing concerns, and the process produces a specification as an important byproduct.
• The customer and designer are in constant communication during the entire process.

From Denning and Dargan, p111 in Winograd, Ed., Bringing Design to Software, Addison Wesley

Why not “get rid of” the UI?

While these don’t get rid of the user interface, they do change it in significant ways.

– Voice control
– Predictive AI

In theory, such approaches could require less technical knowledge on the part of the user.

– What’s the potential downside?