The Cure for Bad User Interface Design and Feature Creep

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Disclosure of conflict of interest

1. I receive compensation from Varian Medical Systems for educational training
2. The views expressed in this presentation are my own and do not reflect the official position or policy of the Department of Radiation Oncology at the University of Michigan

Outline

1. The Hawaii false missile alert
2. Designing better user interactions
3. Best practices for interaction design
The Hawaii false missile alert

The political context for the alert system

"The entire United States is within range of our nuclear weapons, a nuclear button is always on my desk."

Kim Jong-un
After 38 minutes, a false alarm was announced.

Any critical system, whether it’s in a hospital or a critical alert system for public safety, should be specifically designed to prevent errors like this.

If a system is designed appropriately, errors should be very hard to do.

Kim Flaherty
User Experience Specialist
Nielsen Norman Group
The aftermath and investigation report

Developers “are given incomplete, myopic, confusing, and sometimes contradictory instructions and are forced to make significant decisions about the user experience with little time or knowledge of how people will actually use their creations.”

Alan Cooper in “About Face” (2014)
Interaction design

Interaction design should come before programming
Interaction design should be done by designers

- Goal-directed design
- User research
- Personas
Best practices for interaction design

Don’t mix harmless functions with deadly ones

Allow users to undo their actions
Prefer data immunity to data integrity

Data integrity
User must clean the data

Data immunity
Software is resilient to bad data

Don’t blindly add features the user asks for

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Recommended reading