COMS W4170
UI Background

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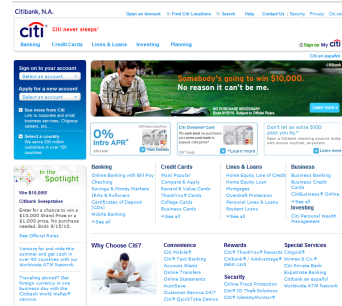September 4, 2018

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UI Concerns

Economist Vilfredo Pareto noted in 1906 that 20% of the people owned 80% of the wealth; generalized by management consultant Joseph Juran to "principle of the vital few and trivial many." (Later, "trivial" changed to "useful" to be politically correct.)

- Functionality
  - What is necessary?
    - Pareto Principle (80/20 "rule"): "20% of the X does 80% of the Y"
  - Too little vs. too much
- Reliability
  - Does it do what it's supposed to do?
  - Unreliability → user becomes unconfident, modifies behavior

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UI Concerns

(Phishing Site)

- Availability
  - How often is it up?
- Privacy and security
  - Who else sees this?
  - How safe is it?
- Standardization
  - "Standards are wonderful. That's why there are so many of them."
- Integration

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UI Concerns

- Consistency
  - {Intra/inter} {application/OS}
- Portability
  - Of programs
  - Of programmers
- On schedule
- Within budget
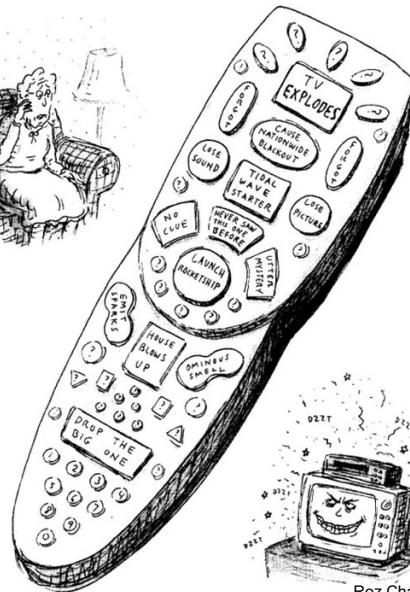
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UI Concerns

- Aesthetics

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UI Concerns

- Usability

HOW GRANDMA SEES THE REMOTE

Roz Chast 6

Quantifiable Usability Measures

- Time to learn
- Time to use

> Imply benchmark task(s)

- Errors
  - How many?
  - What kind?
    - Goal: *Italic* vs. roman
    - Result: *Italic* vs. roman   *Italic vs. roman*
    - Cause(?):   <mark>*Itali*</mark>c vs. roman   `<I>Italic vs. roman…`
  - How important?

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Quantifiable Usability Measures

- Skill retention
  - For how long?
  - Frequent vs. casual user
    - "-" vs. "–" vs. "—"
- User impressions
  - Does user like the system?
  - User's subjective impressions of objective measures

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Other Quantifiable Human Factors

- Behavioral measures
  - Facial expressions
  - Vocalizations
  - Posture
  - Gaze
- Physiological measures
  - Temperature
  - Pulse
  - Respiration
  - Skin conductance
  - Tremor
  - BCI
- Can be used to evaluate systems by inferring user's internal state
  - Measures of "presence" in virtual environments

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Why are good UIs important?

- "Chess is like life."
    — Boris Spassky
- "Chess is life."
    — Bobby Fischer

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