

# mobile usability testing

variations on a theme

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*designing the mobile user experience*

**people are still people**

**now they are mobile**

- standard research techniques
- context more important
- software testing adds challenges
- video capture rigs
- beta tests more powerful



- Wizard of Oz (paper prototyping) particularly useful
  - voice input applications
  - location
  - events (incoming message, call, out of network)
- front end research (e.g., personas) need to incorporate context



**context**

# sources of context

- device vs. computer emulation
- laboratory vs. field
- outdoors vs. indoors
- task-focused vs. other-focused
- environmental input (e.g., camera)

# emulators & simulators

- on-computer use of the application
  - emulators use actual code
  - simulators simulate - avoid!
  - neither match true interaction
- computer testing good for information architecture
- interaction, aesthetic, function need to be tested on device

# laboratory vs. field

- laboratory test - standard
- field test
  - can't capture all context
  - what background tasks / environment?
  - **may** capture more issues
- hybrid (e.g., shopping mall, park)
  - aesthetic issues can be better captured (glare?)

# laboratory vs. field

- typical: laboratory test
- hybrids great for design phase testing
- use field test when
  - late in design cycle; most obvious issues addressed
  - environmental interaction critical
    - ex. mobile payments

# software testing

# device matching

- device selection impacts
  - user interface paradigm
  - how Java, web content rendered
  - screen size, input mechanisms
  - how OS works



# more device matching

- carrier (operator) selection impacts
  - home screen arrangement & content
  - whether SMS links work
  - technologies (GPS, Java, Flash, ...)
  - connectivity at test site
  - expectation for certain device behaviors
  - available devices (e.g., Sprint != Nokia)

# tips for device matching

- use one carrier only
  - restricts device pool
  - avoids carrier problems
- develop device clusters
  - each cluster has mostly same UX
  - Nokias largely the same (S40 varies from S60)
  - Asian manufacturers tend to match carrier UI

# capture equipment

- capture screen, face, body language
- using actual device
- as realistic an experience as possible
- ease of use
- price

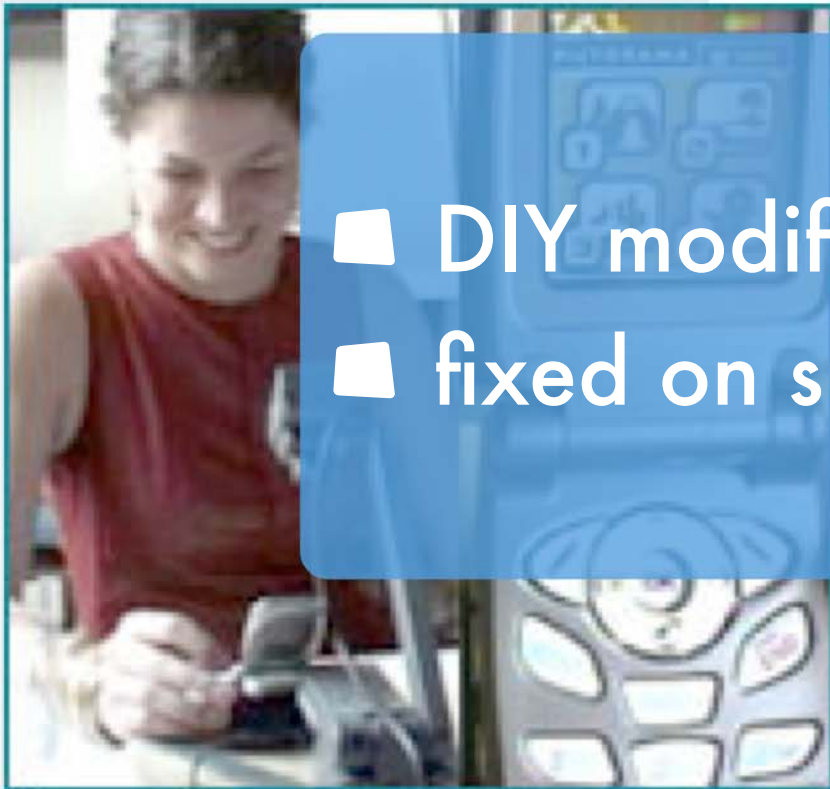
# lamp-cam

- DIY
- fragile
- separate face capture
- must be clipped



# ELMO-cam

- DIY modifications
- fixed on surface



# sled

- DIY or purchase
- enables body language capture

# body language



beta testing

# basic concept

- deploy service with server-detected events
- create surveys
  - VoiceXML, SMS, or web
  - customized for task
- elicit user feedback when event occurs

# trigger events

- match user tasks as much as possible
- acquire through server logs
- send survey when
  - first time attempting task
  - $n^{\text{th}}$  time attempting task
  - every  $n$  weeks
- send alerts via SMS

# surveys

- limited to 1-2 minutes
- capture what task was being attempted
- rate ease, enjoyment, etc.
- VoiceXML also allows easy free-form input
- expire survey in ~20 minutes

# ability to track

- task frequencies
- usage drop-off
- ease of use, affect as a function
  - frequency of use
  - time between uses
  - number of uses

# research is still research

- standard research techniques
  - plus context
  - plus device & carrier matching
- video capture options
- beta tests more powerful

# references

- [www.gotomobile.com](http://www.gotomobile.com)
- [www.littlespringsdesign.com](http://www.littlespringsdesign.com)
- [www.usableproducts.com](http://www.usableproducts.com)
- A. Kaikkonen et al (2005). Usability Testing of Mobile Applications: A Comparison between Laboratory and Field Testing, *Journal of Usability Studies*
- C.M. Nielsen et al (2006). It's Worth the Hassle! The Added Value of Evaluating the Usability of Mobile Systems in the Field, *NordCHI 2006*.

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