UbiComp Proceedings

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UbiTable (MERL)

Shen, Everitt, Ryall. “UbiTable: Impromptu Face-to-Face Collaboration on Horizontal Interactive Surfaces” UbiComp ‘03

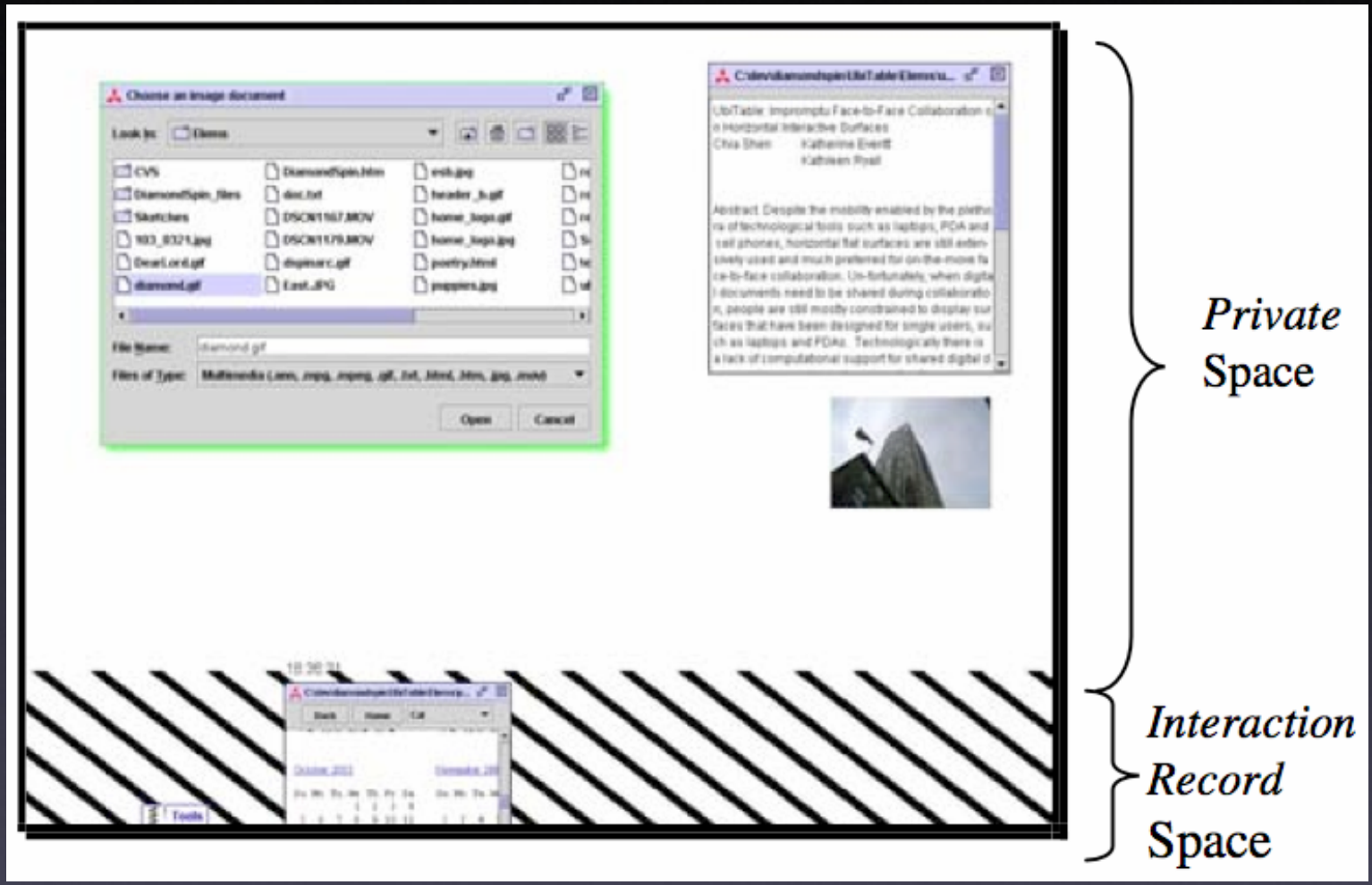
UbiTable (MERL)

- Horizontal table for collaboration during face-to-face meetings
- Uses gradient of private, personal, and public spaces
- Previously, private == invisible only
- Uses “social protocols” as communication instead of traditional gestures
  - Orientation designates space/attention

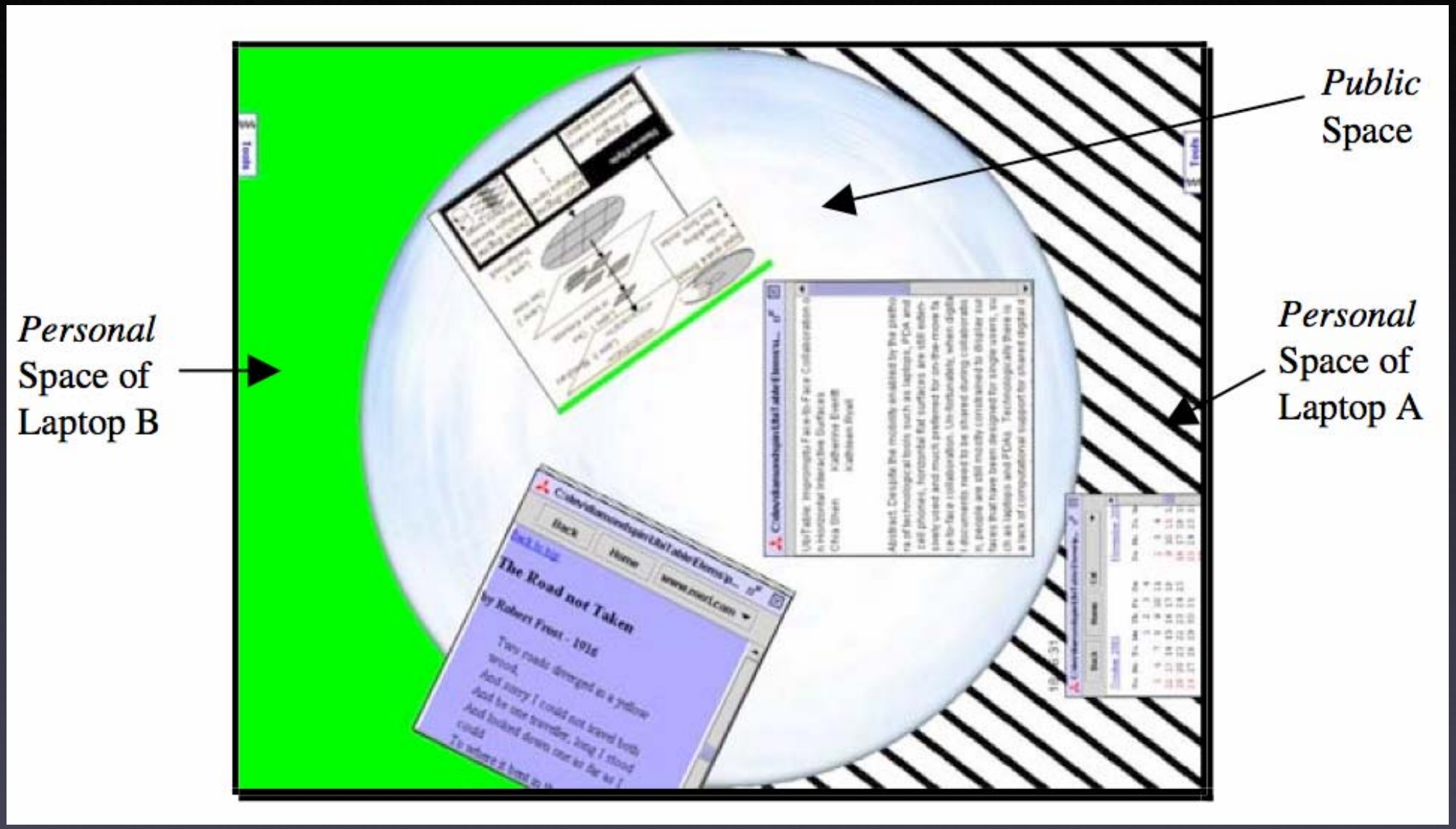
UbiTable (MERL)

- Use your laptop as private and drag things into personal
- Use table for further interactions
  - Rotating, moving, markup, editing, digital ink for annotations
- Color == ownership
  - Bit crap. Should also use name

UbiTable (MERL)



UbiTable (MERL)



UbiTable (MERL)

- Interaction might be awkward
  - Mixed metaphors with laptops
- Laptops != Weiser
  - Where should data really live?
- Spare display == Weiser

MediaCup

- Hellersen, Beigl, Krull. “The MediaCup: Awareness Technology embedded in an Everyday Object.” UbiComp ‘99

MediaCup

- 2D Accelerometer
  - Cup is stationary
  - Drinking from cup
  - Fiddling with cup
- Temperature Sensor
  - Hot (fresh) and cold

MediaCup

- Cues transmitted via IR
- Location tracked externally
- Data -> “Colleague Awareness”
  - Mapped to ambient background noise (remote presence)
- Part of larger context-awareness
- Needs revamping with different hardware

MediaCup

- Truely using everyday objects
- MediaCup == Weiser
- Smart sensor usage: coffee cups give lots of information for “free” (better if hot beverages are used)
- Could have better networking, geo-location unclear
- No displays for feedback, but cheap

FindIT Flashlight

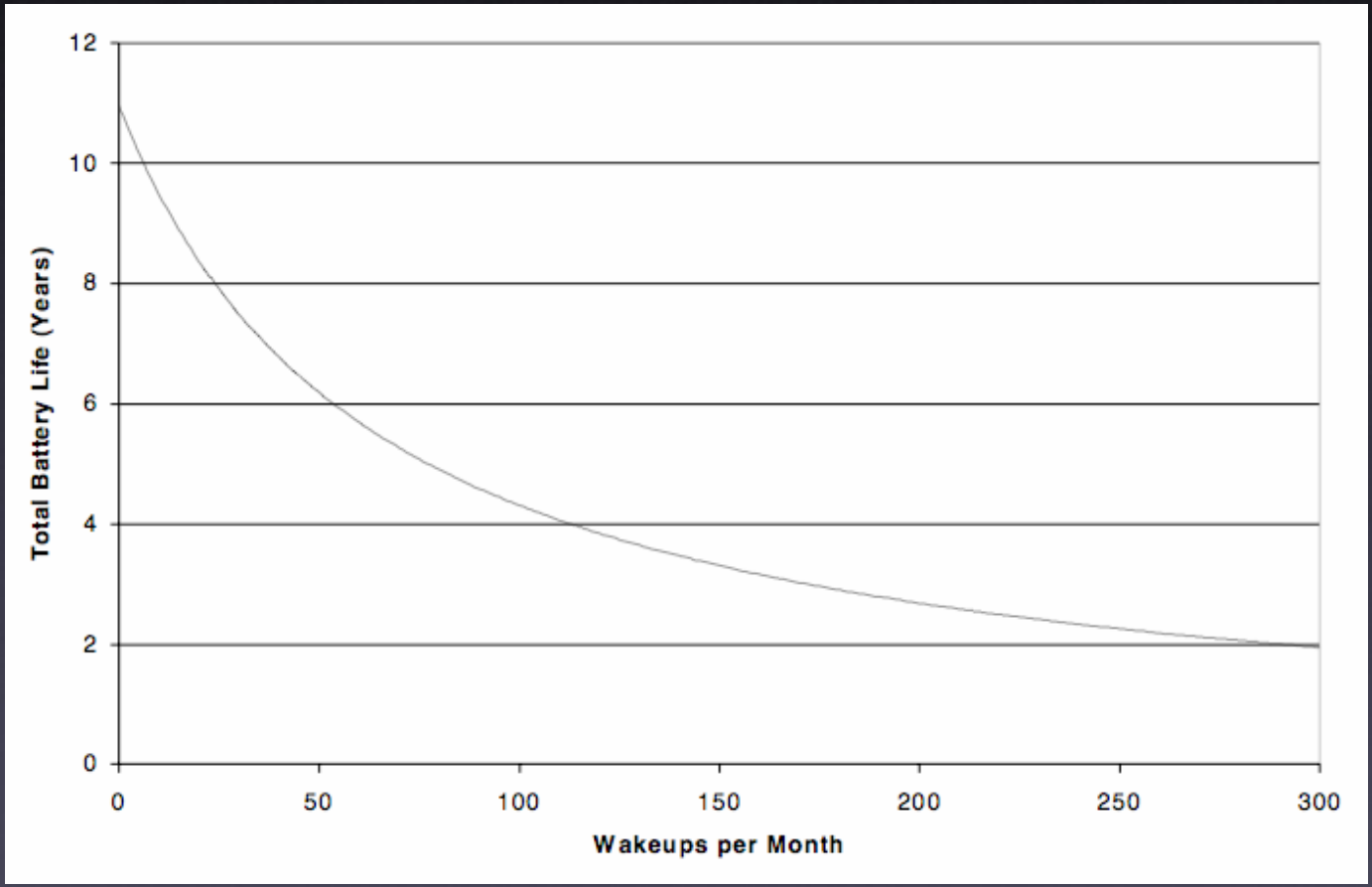
- Hongshen, Paradiso. “The FindIT Flashlight: Responsive Tagging Based on Optically Triggered Microprocessor Wakeup”. UbiComp ‘02.

FindIT Flashlight

- Receivers
  - Small board with PIC, photodiode, response device (LED/buzzer), battery
- Interrogators
  - Send AM search codes via defused laser

FindIT Flashlight

- Cheap, extremely low power, super cool!
- FindIT == Weiser



Face-Responsive Interfaces

- Darrell, Tollmar, Bentley, Checka. Face-responsive interfaces: from direct manipulation to perceptive presence. Ubicomp ‘02

Face-Responsive Interfaces

- Using face recognition techniques, detect
  - Fine-grained Gaze (move pointer on screen)
  - Coarsely-grained Gaze (make the wall react)
- Assumes this is a good thing
  - People gaze around, don’t want cursor jumping unintentionally

Face-Responsive Interfaces

- Did experiments to test algorithms accuracy against other systems
  - Tested for small and large rotations on standard interface
  - Error is same or better than other systems
  - Not 0

Face-Responsive Interfaces

- Second experiment: cursor tracking on wall
- “Successful”. Said to be equivalent to novice use of trackball. Users didn’t like linear mapping.

Face-Responsive Interfaces

- Third experiment. Agent dialog

Face-Responsive Interfaces

- Tests for agent interaction:
  - TTT: Talk-to-talk
  - LTT: Look-to-talk
  - PTT: Push-to-talk

Face-Responsive Interfaces

- Roughly split between preference for LTT and TTT, but users often looked anyway (19/30 questions).
- TTT seemed more accurate (actual algo)
- Follows observation of people looking at what they talk to

- Fin