

Microsoft
Research

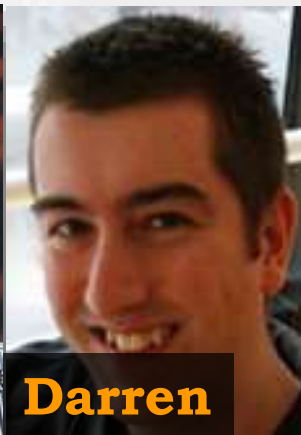


Microsoft Research Asia
Faculty Summit 2012



Human Computer Interaction Research at Microsoft Research Asia

Hong Tan





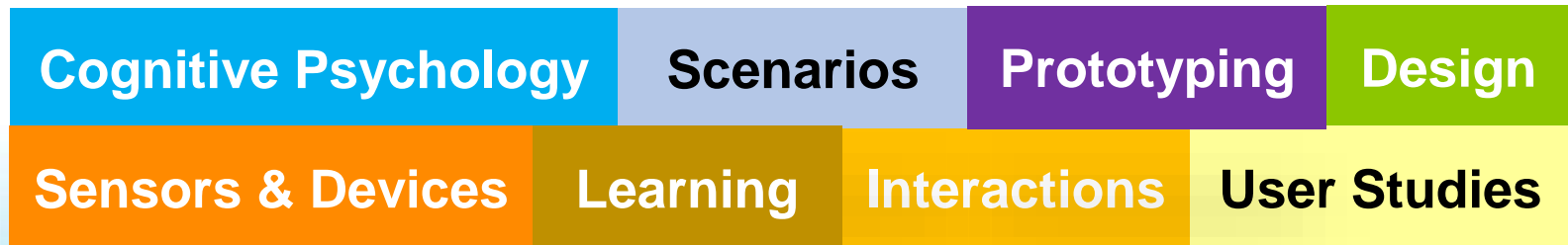
HCI – An Evolving Research Field

- Computing devices are becoming more capable of sensing and acting
- Instead of focusing on smaller, faster and cheaper, HCI is about making technology more accessible and finding interesting uses
- The ultimate goal is to interact naturally and gracefully, with voice, gesture, touch, etc.



HCI @ MSRA

- We conduct interdisciplinary research spanning science, technology and design
- We create the sensors, devices, interactions and scenarios that will drive the next generation of natural user interfaces and reshape human activities for the better





PICOntrol

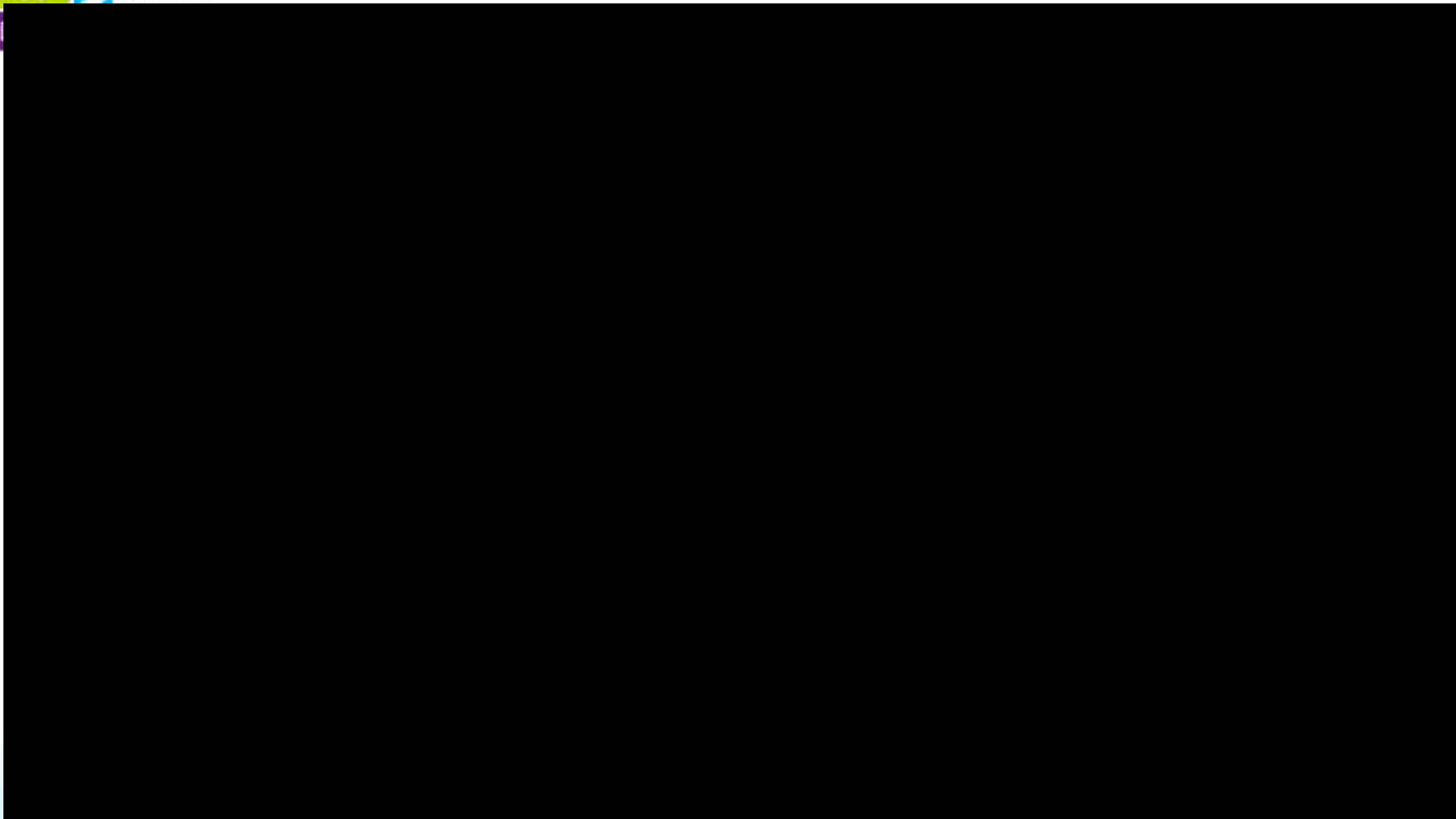
Using a Handheld Projector for Direct Control of Physical Devices through Visible Light



Dominik Schmidt Microsoft Research Asia /
Lancaster University
David Molyneaux Microsoft Corporation /
Lancaster University
Xiang Cao Microsoft Research Asia

UIST 2012 | 10 Oct | Boston

Microsoft Research Asia
Faculty Summit 2012





PIControl: A New Remote Control

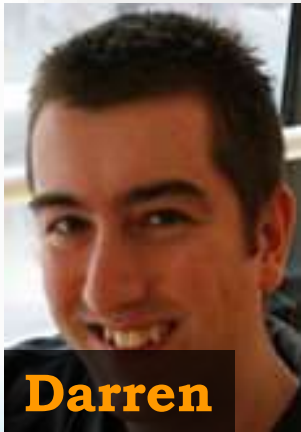
- Point, project and control
- Uses off-the-shelf handheld pico projector and low-cost photo sensors
- Embeds control signals within projected images
- Peer-to-peer, no WIFI needed

Creative Use of Technology



MicroMandarin

Mobile Language Learning in Context



Darren

Darren Edge	Microsoft Research Asia
Elly Searle	University of Washington
Kevin Chiu	MIT Media Lab
Jing Zhao	Peking University
James Landay	University of Washington

CHI 2011 | 12 May | Vancouver



MicroMandarin:

Mobile Language Learning in Context

Human-Computer Interaction Group
Microsoft Research Asia



Context- & Frequency-Based Learning Are Complementary

Context-Based

- Micro-learning fits a busy life style
- Studying context-relevant words encourages their usage

Frequency-Based

- Frequency-based drilling works better for beginners
- Studying frequently-used words helps improve language skills

Language Learning based on Theory



Reaction Media



Yingnong Dang
Xia Zhang
Shuxin Cheng
Sergio Paolantonio
Xiang Cao

Microsoft Research Asia

ReactionMedia

MSRA SA group and HCI group



ReactionMedia: Share Your Life

- Enhance emotional connections between people using their natural reactions
- Create new forms of communication targeting people's engagement with online media
- Vision → Concept → Prototype

Make the Emotional Connections through Design



Industrial Design



Jiawei Gu Microsoft Research Asia



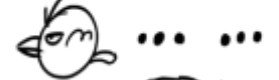
Lync Wireless Headset Industrial Design – SCENARIO & UX



Can you hear me?



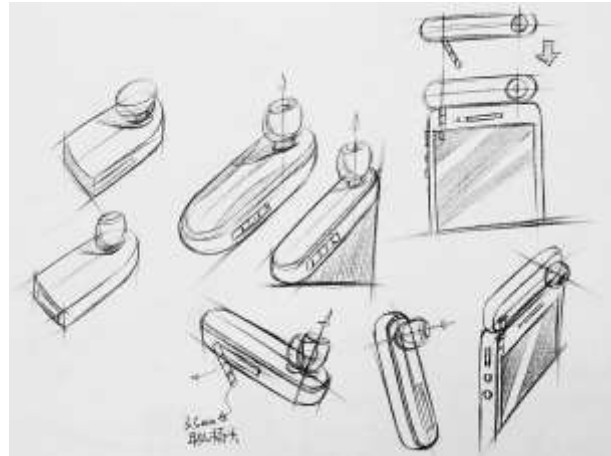
Signal is not smooth



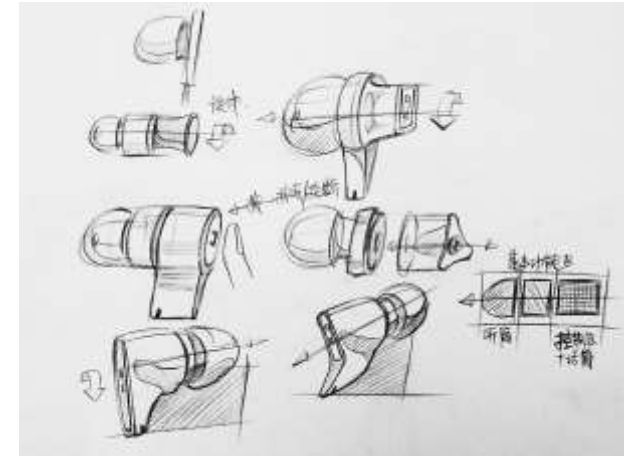
Lync Wireless Headset Industrial Design – SCENARIO-BASED SKETCH



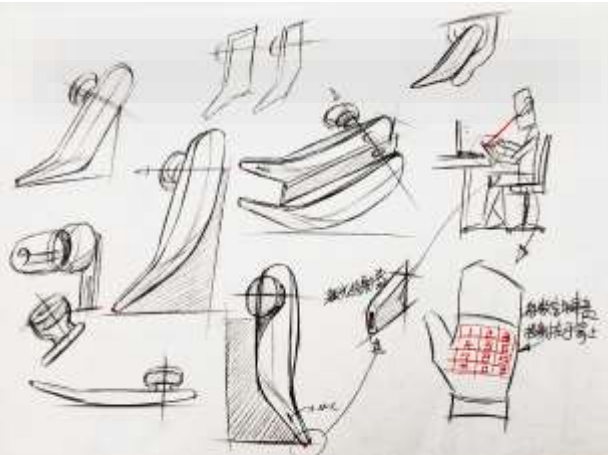
- Ultra mobile
- Managing volume, mute, end call



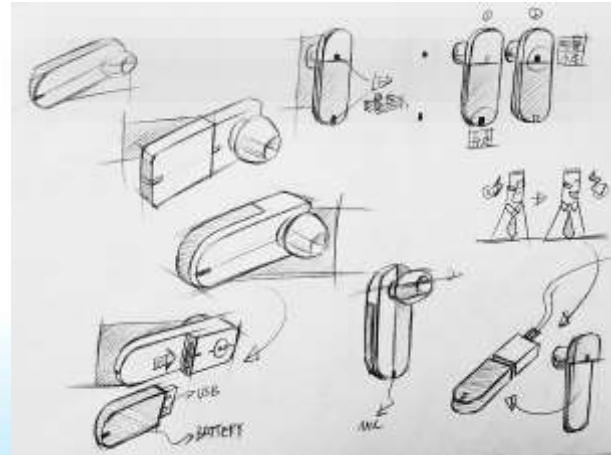
- No space on mess table
- Quick transportation



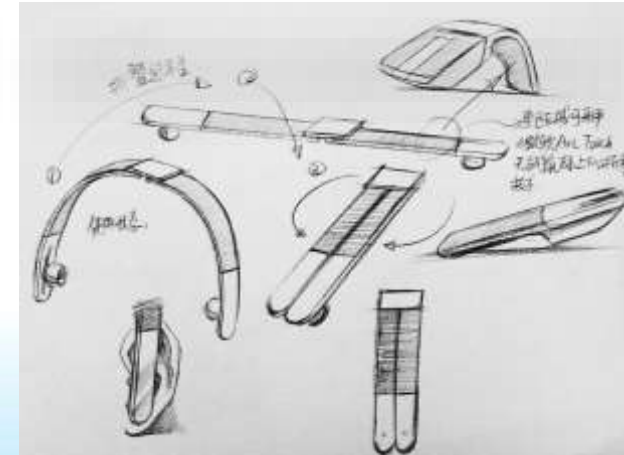
- Don't know if the headset is connected
- Be aware of environment around



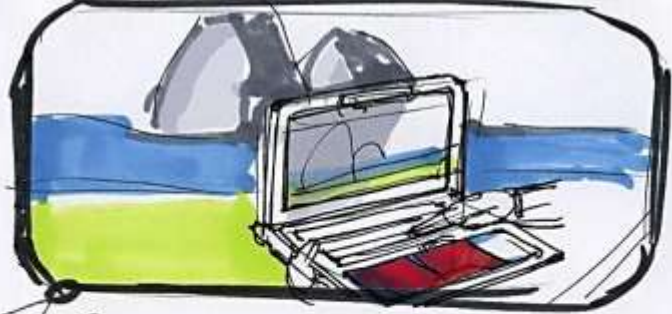
- Missing calls



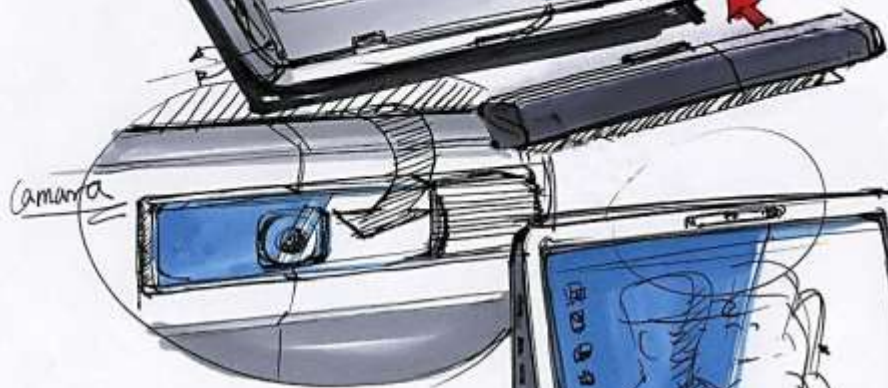
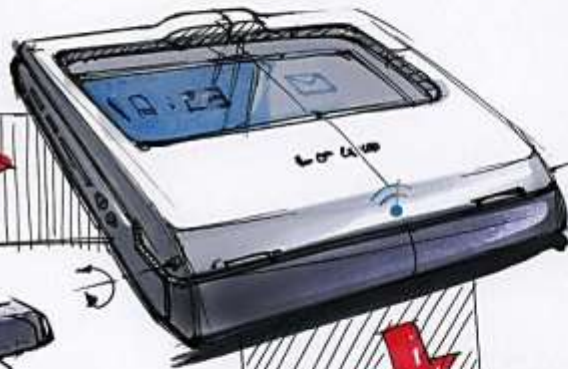
- Long time call, forget to charge battery



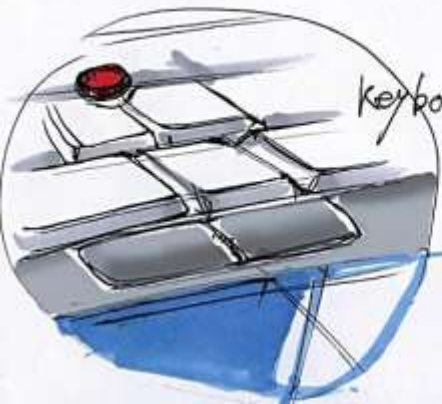
- Transport with you anywhere
- Easy switch to shared ambient



Julge.



Blog





BodyScope

An Acoustic Wearable Sensor for
Activity Recognition



Koji Yatani Microsoft Research Asia
Khai N. Truong University of Toronto

UbiComp 2012 | 5 Sept | Pittsburgh





BodyScope: Record Your Life

- BodyScope is a wearable sensor which records the sound in the user's throat area
- BodyScope can recognize different user activities, such as eating, drinking, speaking, and laughing
- 79.5% accuracy in the lab; 71.5% in-the-wild

Sensors that Enable New Applications



SlickFeel Sliding and Clicking Haptic Feedback on a Touchscreen



Hong

Xiaowei Dai Microsoft Research Asia
Beihang University

Jiawei Gu MIT Media Lab

Xiang Cao Microsoft Research Asia

J. Ed Colgate Northwestern University

Hong Z. Tan Microsoft Research Asia

UIST 2012 | 8 Oct | Boston





SlickFeel Lets You Feel the Interface

- Touchscreens are becoming ubiquitous
- Yet the cold glass does not touch us back
- We create technologies that enable touch feedback on touchscreens
- This is the first time that friction modulation and key-click simulations have been implemented on the same piece of glass

Haptics: Towards Touchy-Feely Interfaces



A Glimpse into the Future of HCI

