Tangible Bits
Beyond Pixels

CHI 2007 Workshop
Tangible User Interface
in Context and Theory
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Tangible User Interface

physical
digital

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What drives design?

- Technology Driven Design
  - begin with an innovative technology,
  apply it in an application/field

What drives Design?
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- **Technology Driven Design**
  - begin with an innovative technology, apply it in an application/field

- **Need Driven Design**
  - identify an existing problem/set of problems, shape process around solving these problems

- **Vision/Concept Driven Design**
  - define a new concept, design artifacts which embody that concept, and test it
The central part of this presentation was made available to workshop participants, but is not yet ready to publish.

It addressed general themes in tangible interface design, illustrated by past projects from the Tangible Media Group at MIT Media Lab.
### Tangible Bits

- Giving physical forms to digital information and computation, making bits
  - directly manipulable with two hands
- Continuity between physical and digital representation in design
- Supporting multi-user collaboration and “tangible thinking”

### Tangible Bits Design Space

#### Arts & Design
- concept
- philosophy
- aesthetics

#### Sciences & Technologies
- scientific theory
- implementation
- evaluation
- analysis

#### Tangible Interface Design
- Interaction Design
- Industrial / Product Design
- Architectural / Env. Design
- Media Arts / Interactive Arts

- Computer Sci.
- Mechanical Eng.
- Electronic Eng.
- Cog. Sci.
- Soc. Sci.

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Tangible Bits

• Reconciliation of our dual citizenship in the worlds of bits and atoms.
• Interaction Design
  – informed by sciences (HCI),
  – materialized by technologies (CS, EE, ME), and
  – shaped by industrial design, media arts and practical real-world applications.

Thanks!

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