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?

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

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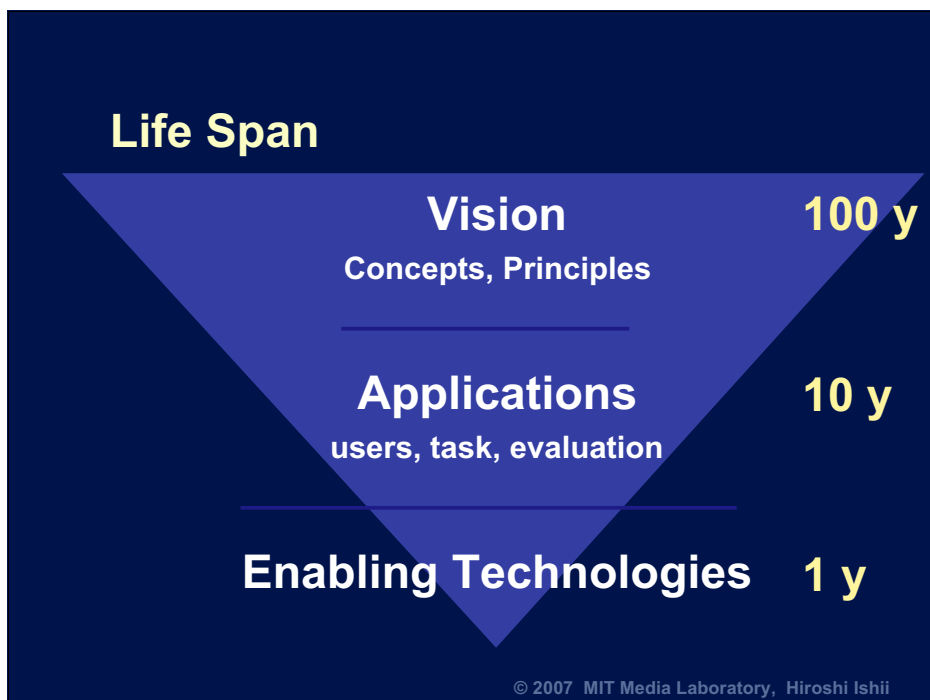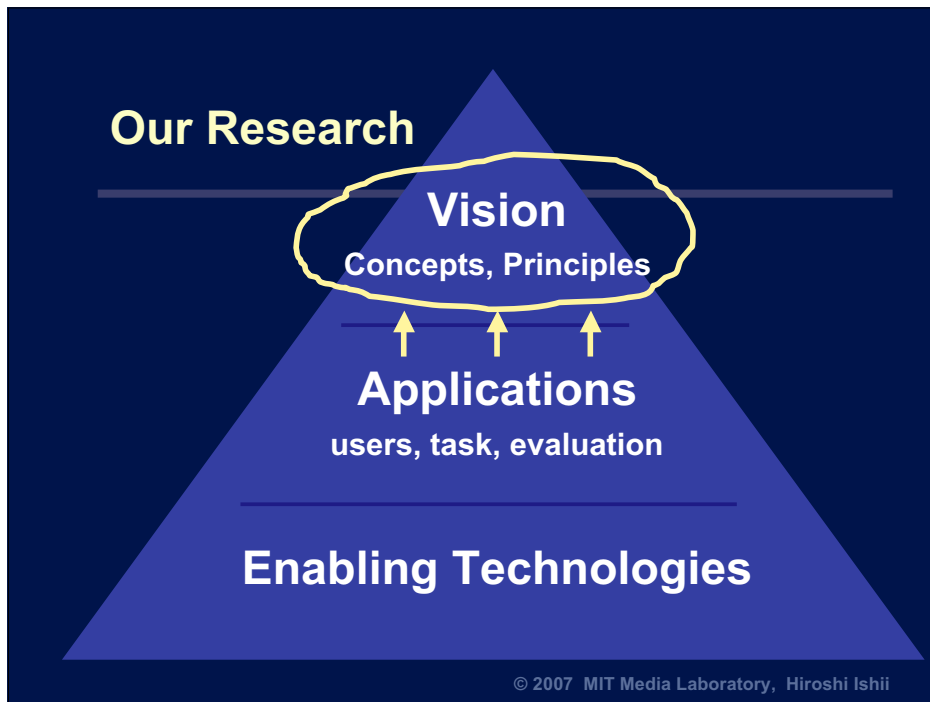 - begin with an innovative technology, apply it in an application/field

- **Need Driven Design**
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- **Vision/Concept Driven Design**
  - define a new concept, design artifacts which embody that concept, and test it

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Our Research

Vision
Concepts, Principles

Applications
users, task, evaluation

Enabling Technologies

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Life Span

Vision — 100 y
Concepts, Principles

Applications — 10 y
users, task, evaluation

Enabling Technologies — 1 y

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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.
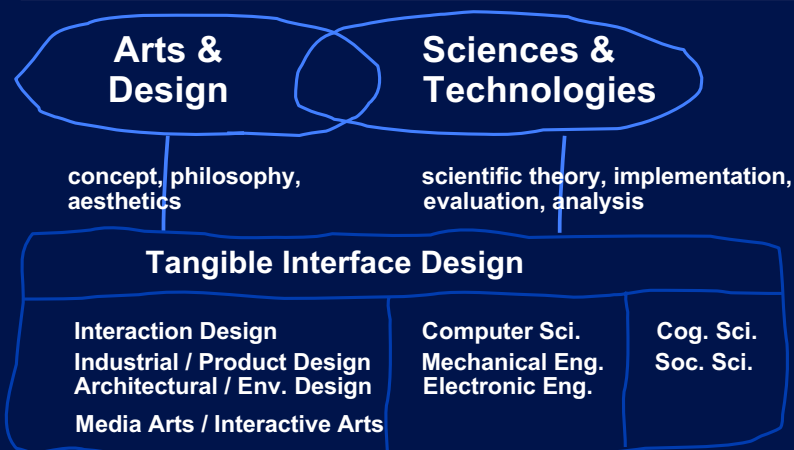
Tangible Bits

- **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"**

5. 11. 2000

Tangible Bits Design Space

Arts & Design   **Sciences & Technologies**

concept, philosophy, aesthetics   scientific theory, implementation, evaluation, analysis

Tangible Interface Design

Interaction Design	**Computer Sci.**	**Cog. Sci.**
Industrial / Product Design	**Mechanical Eng.**	**Soc. Sci.**
Architectural / Env. Design	**Electronic Eng.**	
Media Arts / Interactive Arts		

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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