

# DESIGN

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# THINKING

## A Primer and Process Overview

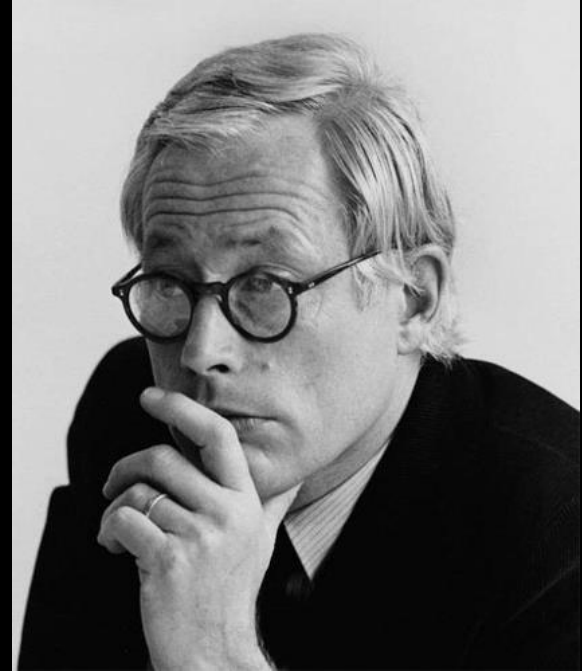


Dennis O. Smith  
Anthony Tripoli

# Design Thinking Introduction

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What is Design Thinking?



## Good Design Is . . .

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. . . Innovative

. . . Makes a product useful

. . . Aesthetic

. . . Makes a product understandable

. . . Unobtrusive

. . . Honest

. . . Long-lasting

. . . Thorough down to the last detail

. . . Environmentally friendly

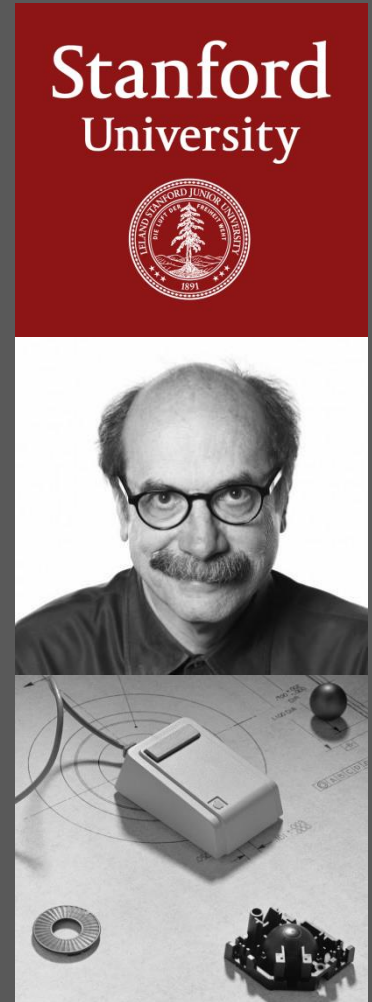
. . . As little design as possible



## Design Thinking Origins

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- 1980s/1990s - Course at **Stanford University** - “Design Thinking as a Method of Creative Action.”
- Adapted for business purposes by **David Kelley**
- David Kelley Design merges to become **IDEO** – focus on designing products, services, environments, and digital experiences



## What is Design Thinking?

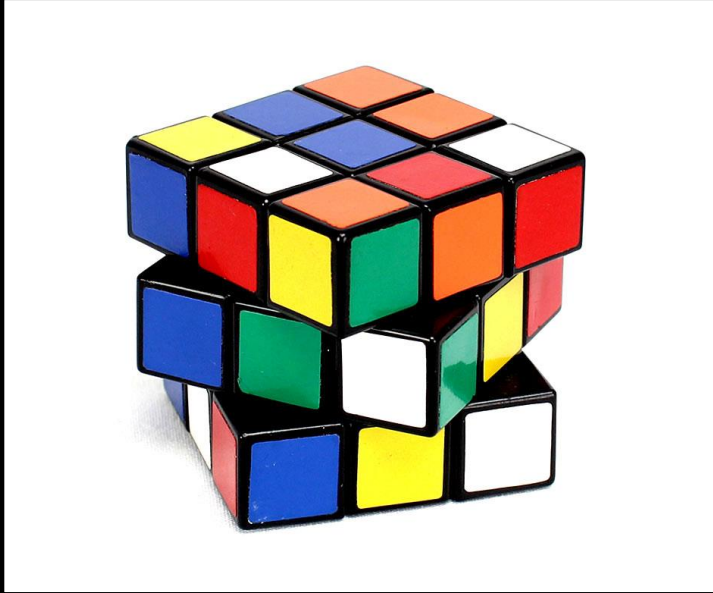
Design Thinking is a **user-centered** approach to innovation that results in a tangible, **improved future** outcome.

**Learn** – Observe & empathize to gain understanding and inspiration

**Understand** – Make sense of the data to uncover patterns & actionable insights

**Create** – Use ideation & iterative prototyping to visualize the future

## When use Design Thinking?



VS



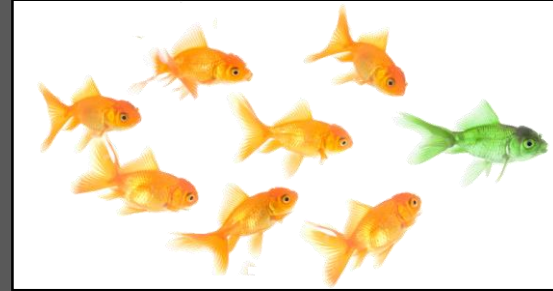
What **type** of problem is it?

# Design Thinking at APL

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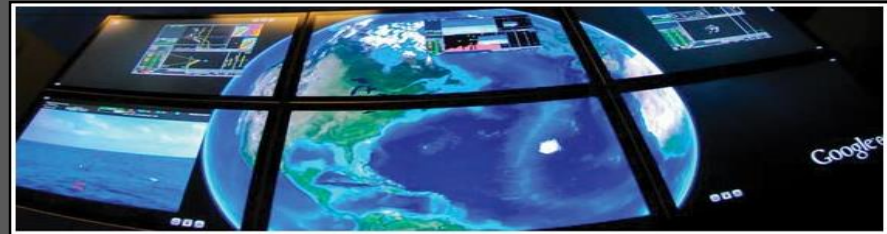
Central Spark



Leadership Development

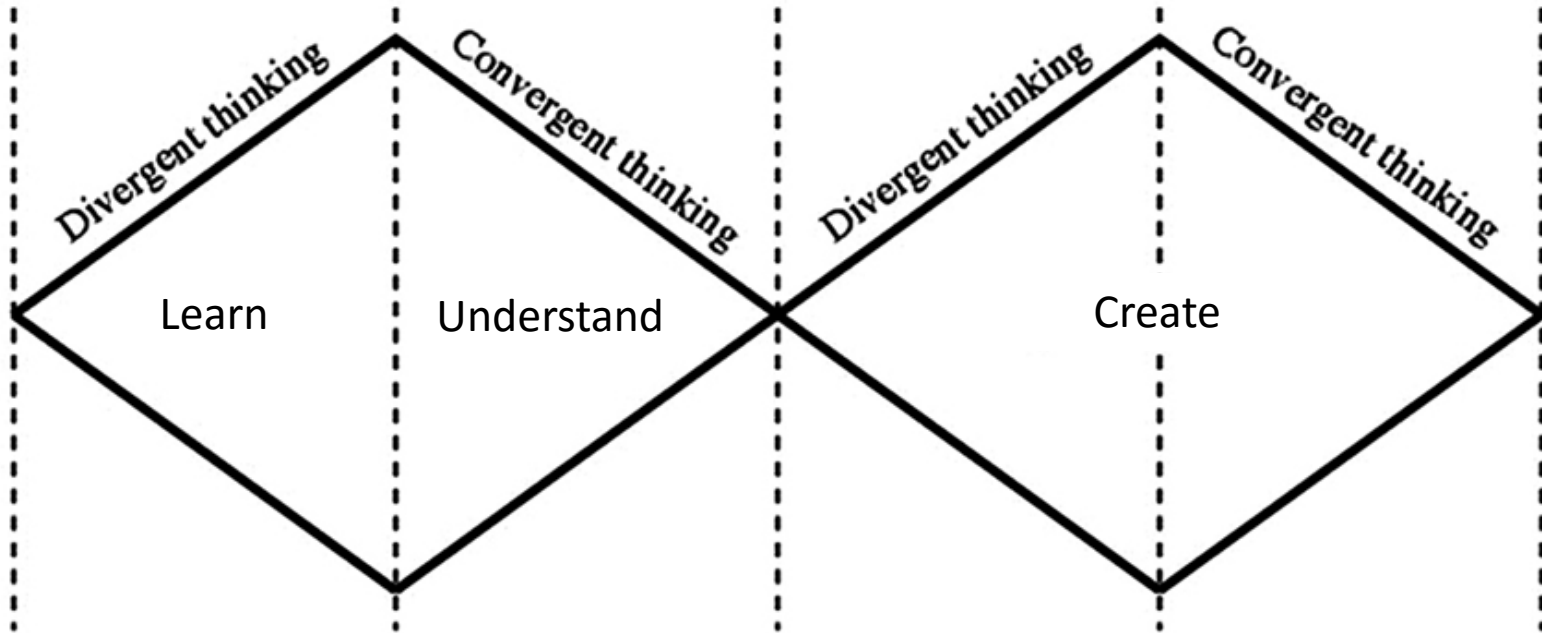


VPN



Tactical Advancements for  
the Next Generation (TANG)

## Design Thinking Process



Divergent & Convergent thinking *at the right times.*



# Design Thinking – Learn

## Ethnographic Research

- Interviewing
- Fly-on-the-Wall Observation
- Contextual Inquiry
- Walk-a-Mile Immersion

## Participatory Research

- What's on Your Radar?
- Build Your Own
- Journaling

## Evaluation Research

- Think-Aloud Testing
- Heuristic Review
- Critique
- System Usability Scale

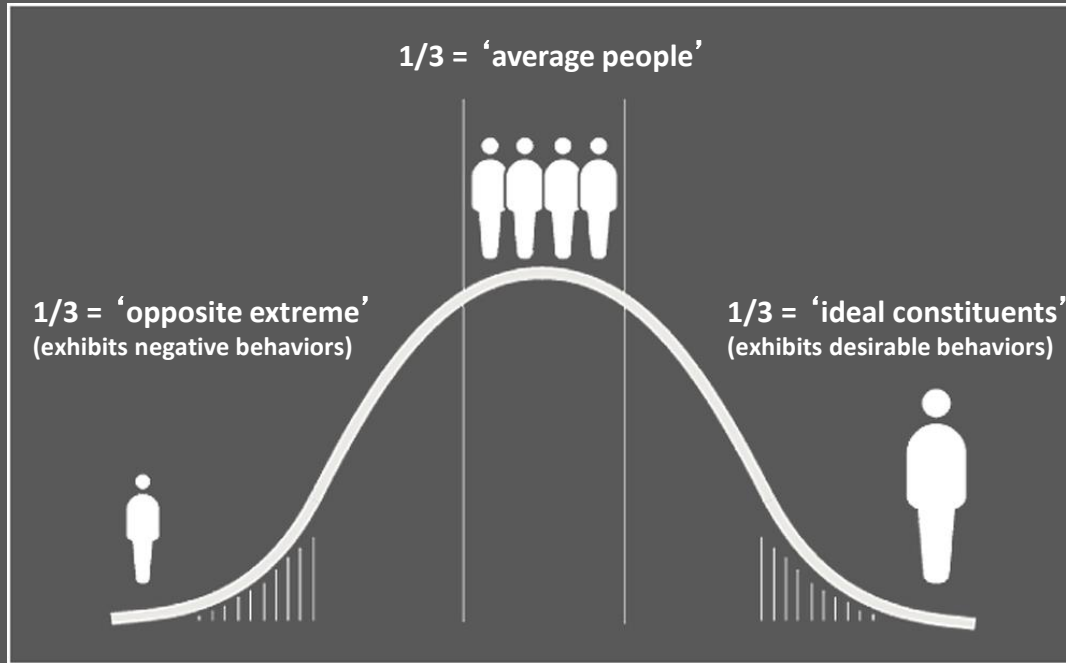


*“What people say, what people do, and what people say they do are entirely different things.” –Margaret Mead, Anthropologist*

### Value of Ethnographic Research

- Human-centered design is about getting to the people you're designing for and hearing from them in their **own words**
- Capture the full context of users' experience, including their **habits, feelings, desires, and struggles**
- The end goal is to identify **unmet, unarticulated needs** that will help you to create innovative solutions

# Extreme users = Innovative Opportunities



## Design Thinking – Learn

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Use new eyes – be a tourist



## Design Thinking – Learn

|                     |   |
|---------------------|---|
| <b>BROAD</b>        | <ul style="list-style-type: none"><li>• Describe the spaces you work in throughout your day. Why are they the way they are?</li><li>• How is your home office set up? Why?</li><li>• What are your 3 most important requirements for a work environment?</li></ul>  |
| <b>STORIES</b>      | <ul style="list-style-type: none"><li>• Tell me about a time your workspace got in the way of doing your job.</li><li>• Tell me about a time you had to complete a task and could not find an appropriate place to do it (personal phone call, group meeting, etc.)</li><li>• Walk me through yesterday... where were you throughout the day and what were you doing?</li></ul> |
| <b>ATTITUDINAL</b>  | <ul style="list-style-type: none"><li>• How does your work environment align or conflict with who you are as a person?</li><li>• What are your biggest challenges when doing your job? How could a different space help?</li><li>• Describe how you personalize your work environment.</li></ul>  |
| <b>ASPIRATIONAL</b> | <ul style="list-style-type: none"><li>• If you could redesign your workspace in any way – what would it look like, what would it enable?</li><li>• If you had unlimited resources, what would your ideal workspace look like (look, feel, temperature, smell, location, constraints)?</li></ul>   |

### Ethnographic Interviewing – Tips

- No more than 2 to 3 people in an interview
- Go deep – long conversations and stories uncover unarticulated needs
- Be curious and allow conversation to go where it goes
- Be comfortable with silence
- Take good notes! Write down what they say, not what you think they mean
- Stay mindful of the time scheduled
- “Off the record” ending

## Domain & Analogous Research

### Domain

Culinary Specialists  
Food Service Officers  
Supply Officers  
Galley Managers

### Analogous

Google  
Royal Caribbean  
Michael Pollan  
USOC Trg Ctr  
SFUSD  
Eatsa  
Bar Tartine  
Boston Red Sox

## Design Thinking – Understand

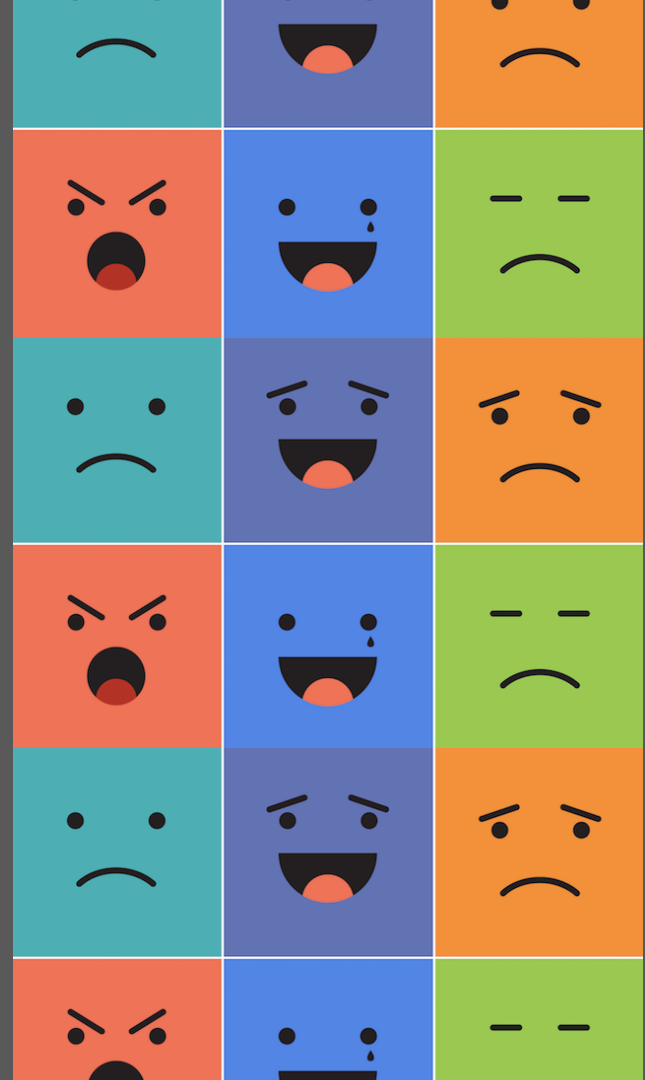
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### Identify:

- Observations
- Quotes
- Pain points
- Challenges

### Generate Insights:

- Answers the “so what”
- Make it actionable
- Potential reframe (of problem)

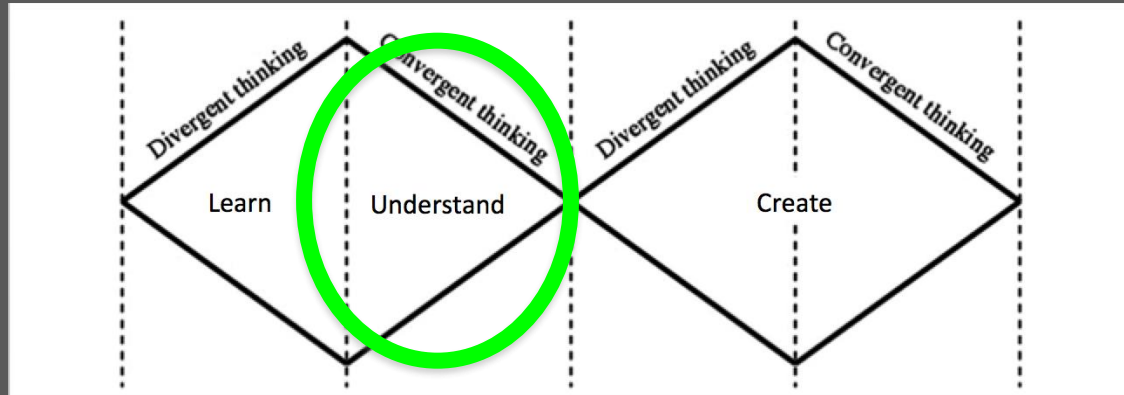




## Design Thinking – Understand

### Insights into Opportunities

- Cluster, make sense, organize . . . Insight statements
- Create “How might we . . .” questions



## Design Thinking – Understand to Create

### How Might We...

- Make your work environment feel like your “home office”?
- Create offices that accommodate conflicting personal preferences?
- Create the modern day “water cooler”?
- Create an environment that balances communication with focus?
- Develop the “Smart Office” to enhance productivity?
- Use spaces to create a sense of community among staff?
- Improve the remote work experience?
- Give staff a sense of privacy and ownership in their spaces?
- Create an environment that people would want to come to on their downtime?
- Create flexible spaces that serve multiple purposes? HMW communicate the current mode of the space through design?
- Create spaces that foster collaboration?

# Brainstorming

### Why Brainstorm?

- Rapid Idea Generation
- Get different perspectives
- Generate excitement

# The Rules

1. Defer Judgment
2. Encourage Wild Ideas
3. Build on the Ideas of Others
4. Stay Focused on the Topic
5. One Conversation at a Time
6. Be Visual
7. Go for Quantity

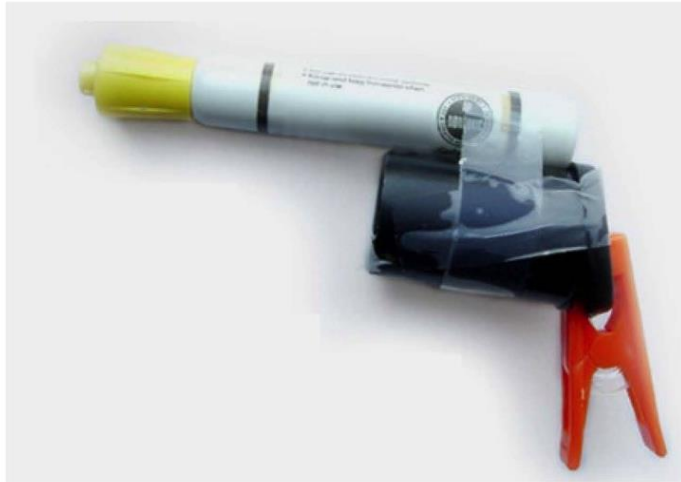
# Prototyping

“Fail early to succeed sooner.”

–David Kelley, IDEO Founder and Chairman



### Rapid Prototyping\*



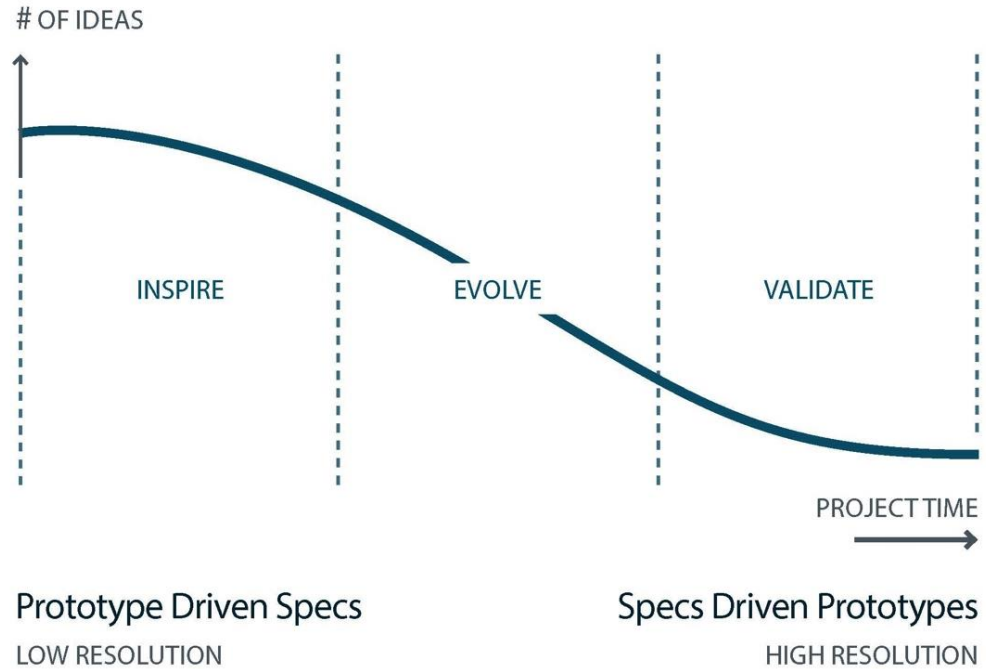
# Why Prototype?



1. Promote common understanding via tangible objects
2. Identify hidden issues and problems
3. Gain counter-intuitive insights
4. Allow early and regular user feedback
5. Reduce risks
6. Help make better decisions faster



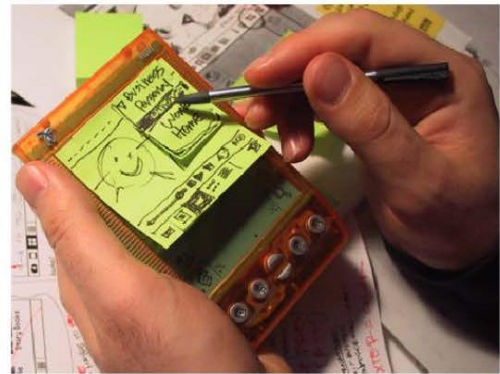
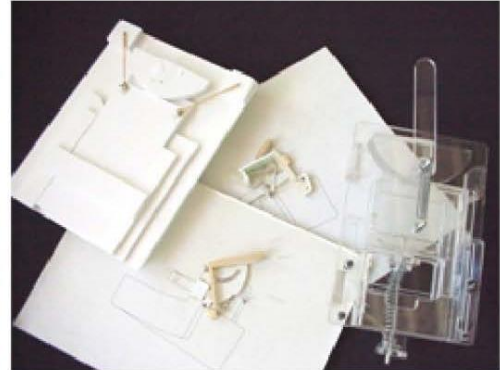
## 3 Stages of Prototyping



# What are Prototypes?

## Hand-made Constructions

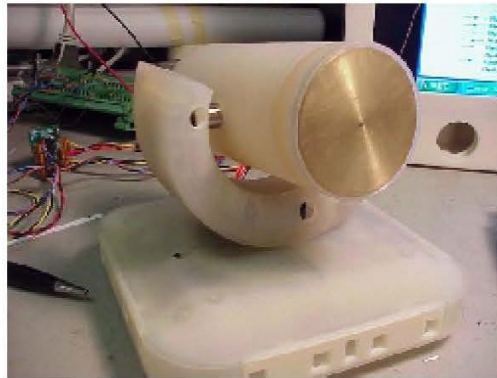
Maquettes  
Models



## Engineering Prototypes

Fabrications

Rapid Prototypes



## Time-based Prototypes

Enactments  
Storyboards  
Video





## Spaces

Installations  
Environments



## Design Thinking – Create

“The value of prototypes resides less in the models themselves than in the interactions they invite.”

–Serious Play by Michael Schrage



# Concept Capture



# Design Thinking – Create

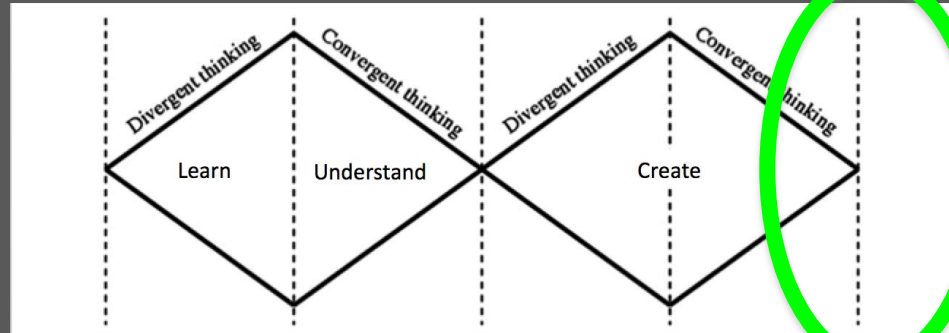
- Promotes an idea and rallies support
- Explains your idea, why it matters, and how it works
  - List features & benefits
- Highly visual – use pictures and diagrams
- Clear and concise



## Design Thinking – Deliver

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*Now  
What?*



## Design Thinking – Deliver

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- Customer decisions
- Learning Launch(es)
- Design Sprints
- Iteration & Prototyping

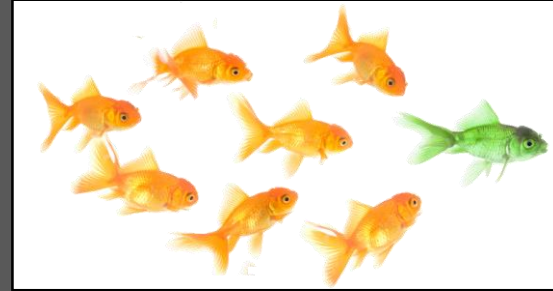
***Design Thinking is not an end-to-end business process***

# Design Thinking at APL

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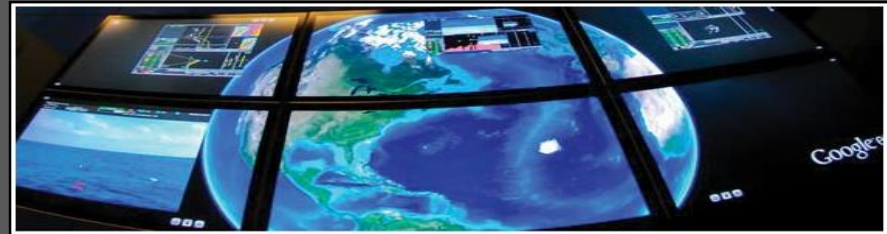
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