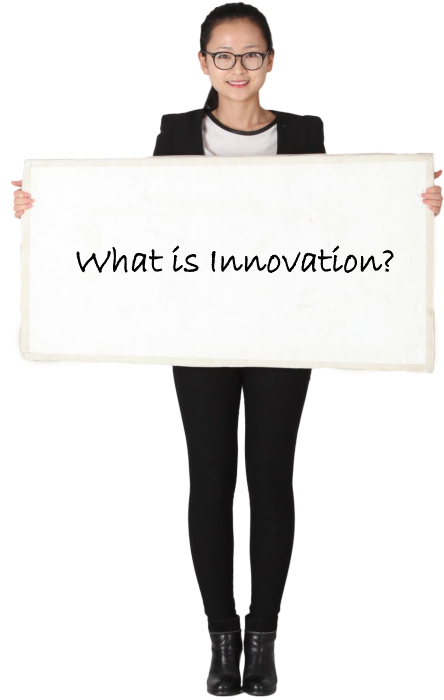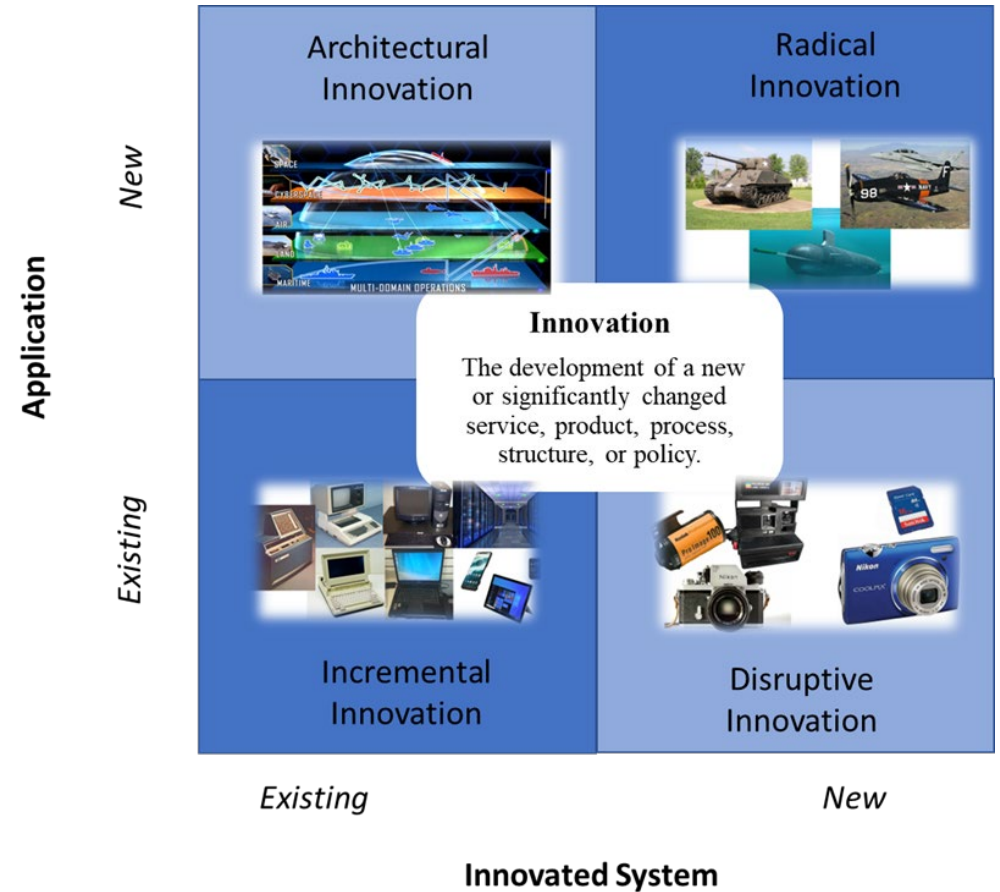Welcome to the *Innovation Through Design-based Collaboration* tutorial
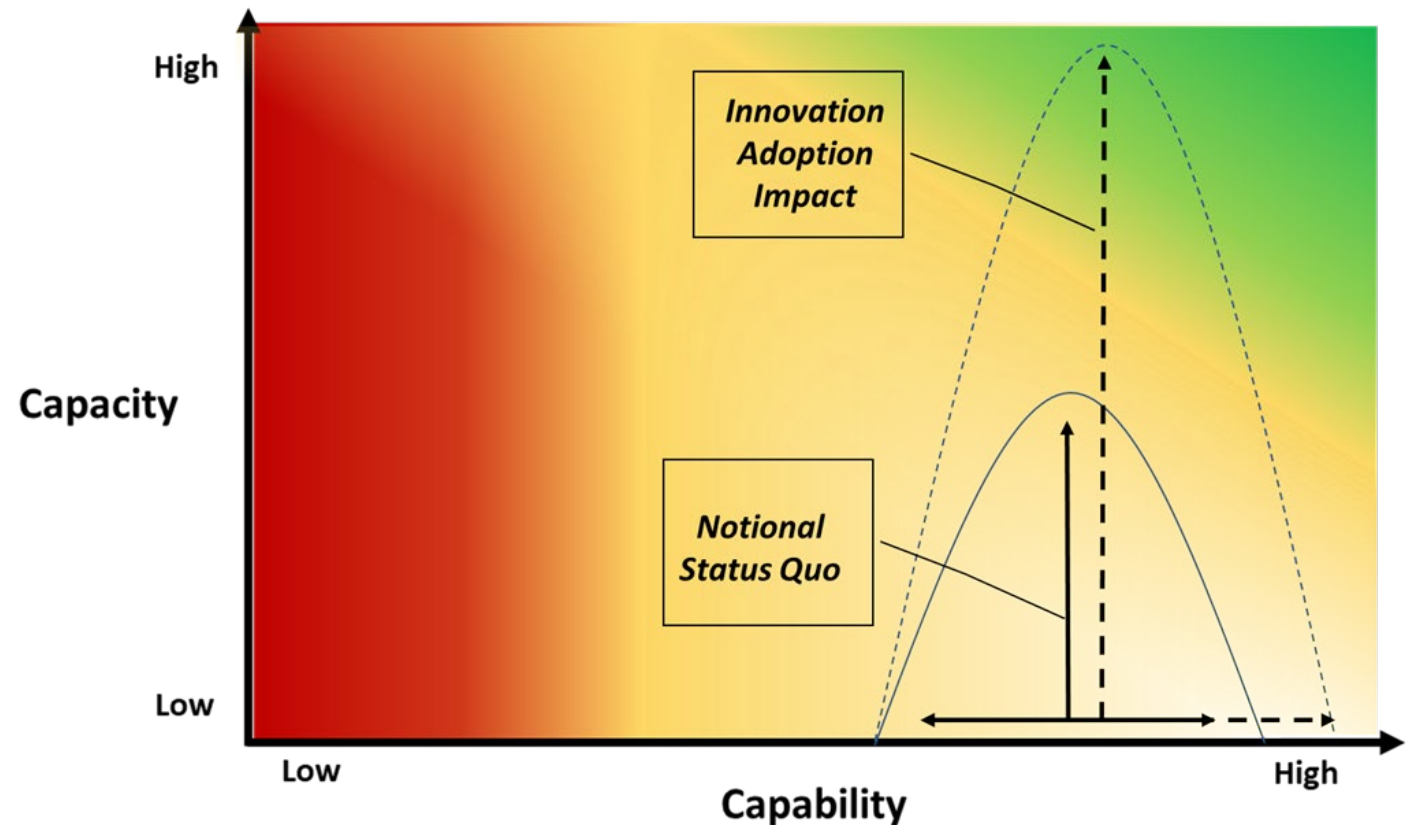
Innovation

- Innovation is defined as development of a new or significantly changed service, product, process, structure, or policy.

- Adoption occurs when change agents have identified, developed or acquired, integrated, and leveraged the value of an innovation.

- Change agents include innovators, facilitators, leaders, and users."

Innovation Adoption Potential Impact

- Factors that inform force capability and capacity, and therefore enhance mission effectiveness:

- Personnel,

- **Equipment/technology,**

- **Training,**

- Resources, &

- Authorities.

what gets in the
way of innovation?

Organizational Culture

Group Think

Cognitive Biases

Mindset/Mental models

Pattern Seeking

Unnamed assumptions

What is Design-based Collaboration?

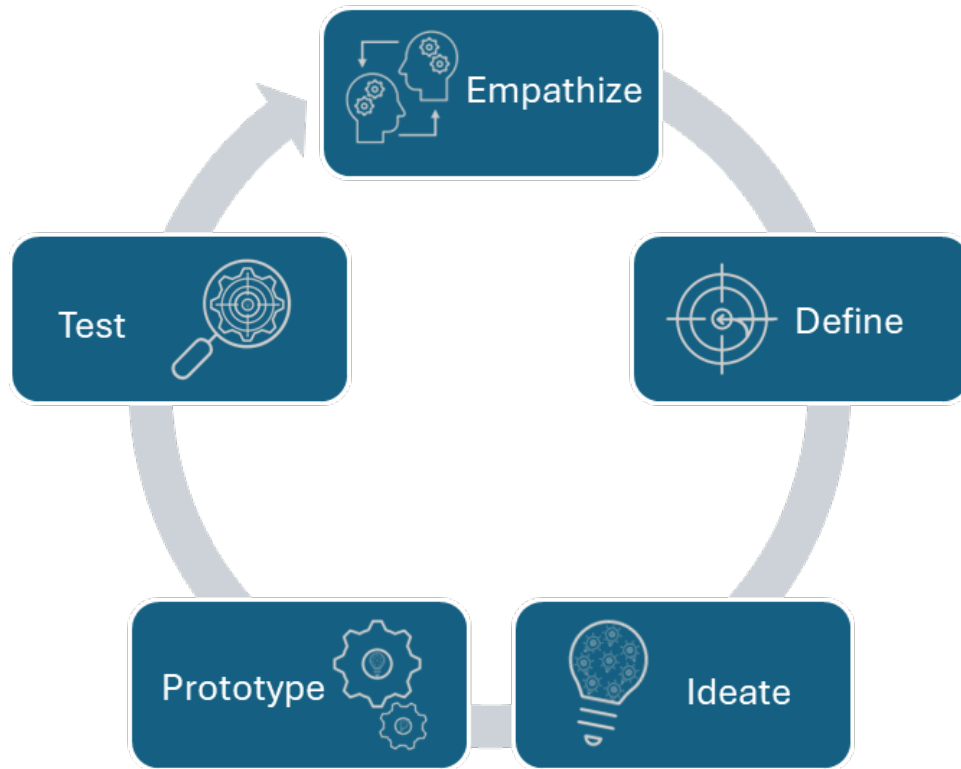Tension and conflict must be embraced for good ideas to emerge. (Francesa, 2016)

Design Thinking is a proven and robust instrument to uncover and include obvious and hidden needs in innovation-, development-, and problem-solving processes. (Uebernickel & Brenner, 2016)

Design thinking is a mindset, process, and a toolbox (Brenner et al, 2016)

Design thinking is now recognized as a "way of thinking which leads to transformation, evolution and innovation" (Tschimmel, 2012)

Design Thinking teams benefit enormously when personalities with different traits are merged. (Brenner et al, 2016)

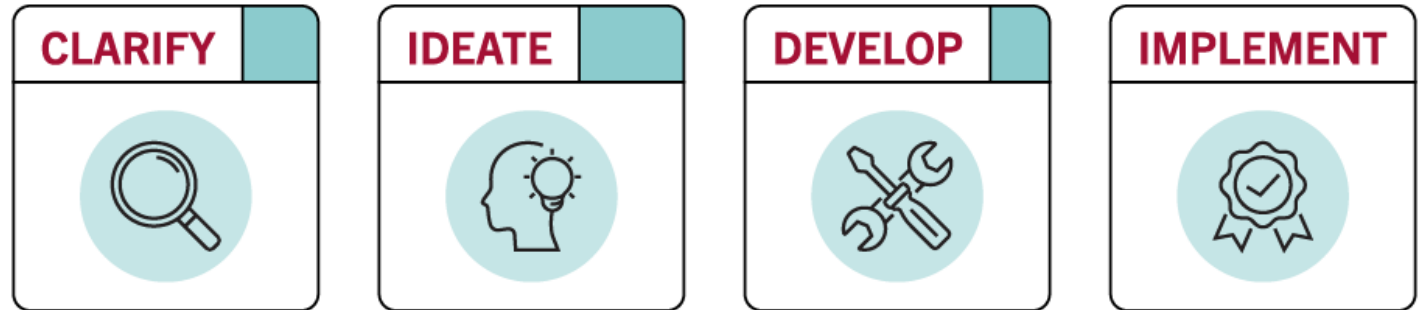# Design Thinking
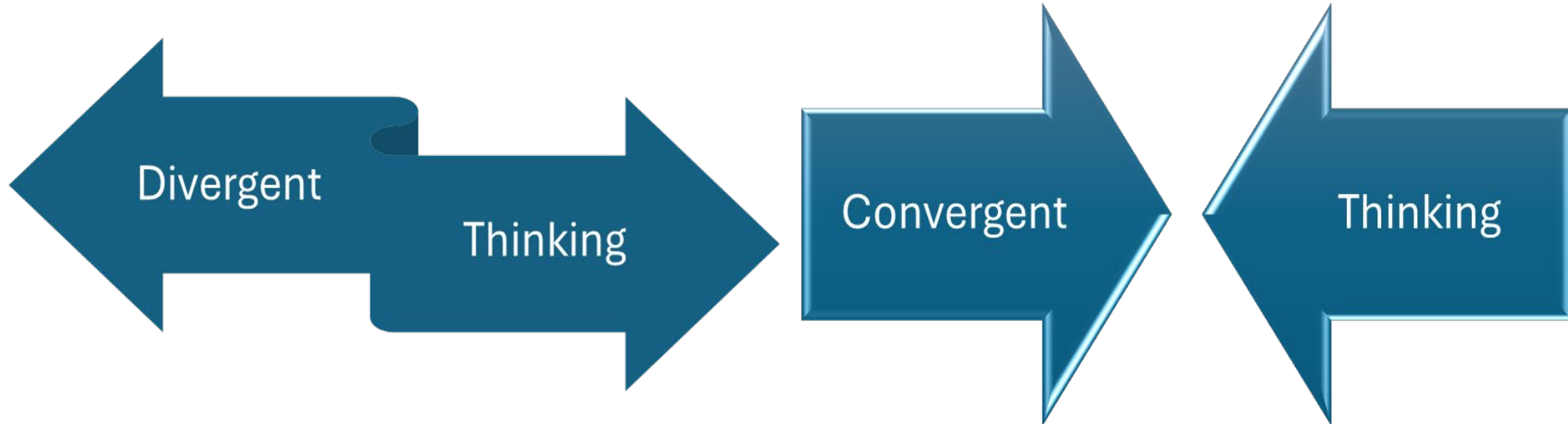
The Design Thinking process, adapted from Stanford University

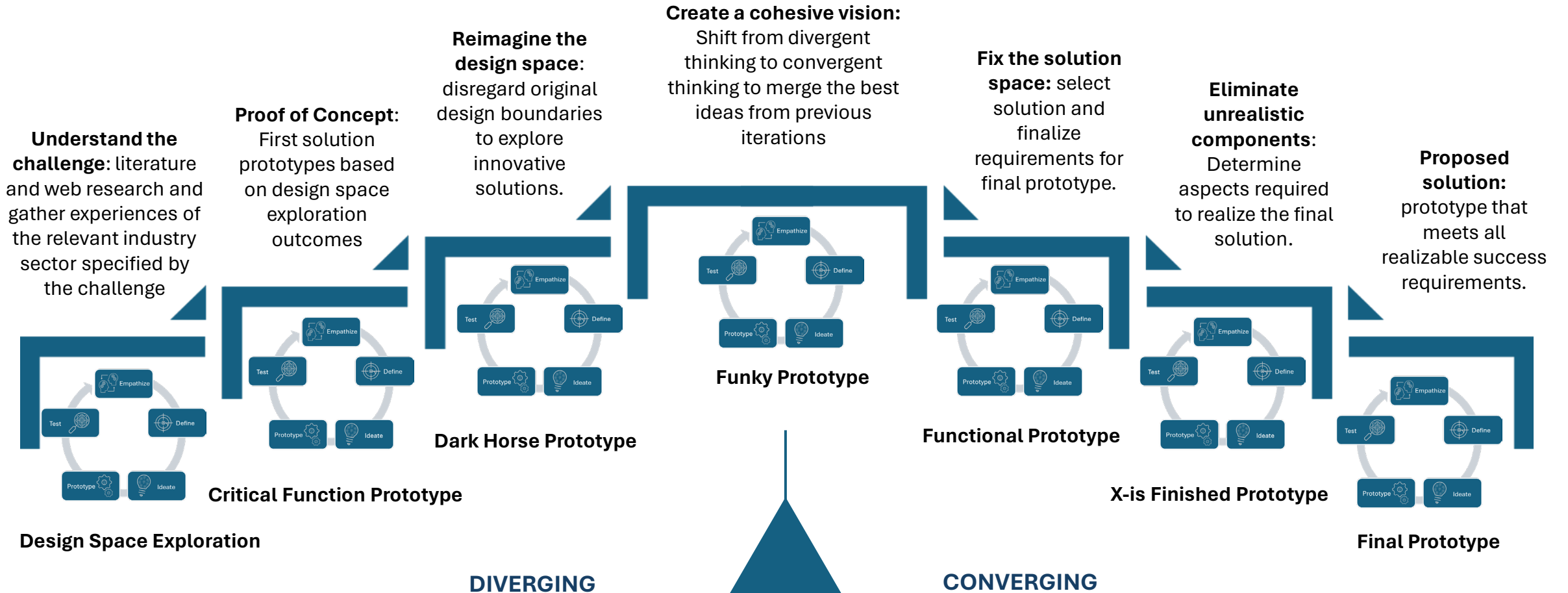The Harvard Business School: Human-Centered Design

Problem solving approach…

Divergent Thinking

Create creative ideas by exploring multiple possible unique solutions for a single problem.

Convergent Thinking

Create a single, "best" solution to a problem.

The Design-Thinking Macro Process

Understand the challenge: literature and web research and gather experiences of the relevant industry sector specified by the challenge

Proof of Concept: First solution prototypes based on design space exploration outcomes

Reimagine the design space: disregard original design boundaries to explore innovative solutions.

Create a cohesive vision: Shift from divergent thinking to convergent thinking to merge the best ideas from previous iterations

Fix the solution space: select solution and finalize requirements for final prototype.

Eliminate unrealistic components: Determine aspects required to realize the final solution.

Proposed solution: prototype that meets all realizable success requirements.

Funky Prototype

Dark Horse Prototype

Critical Function Prototype

Functional Prototype

X-is Finished Prototype

Design Space Exploration

Final Prototype

DIVERGING

CONVERGING

Adapted from University of St. Gallon

Why should I consider changing the status quo?

5 most common ways people work together:
1. Presentations
2. Managed discussion
3. Status report
4. Open discussion
5. Brainstorm

(Lipmanowicz & McCandless, 2016)

Making decisions upon alternatives assumes that the analysis of a prevailing condition equally entails the perfect solution. . .

(Shamiyeh & Miessen, 2010)

. . . And it supposes that a prevailing condition can be transformed into a perfect one.

(Shamiyeh & Miessen, 2010)

Speed has become a weapon against thoughtfulness.

(Pontefract, 2018)