Design Thinking for Sustainability

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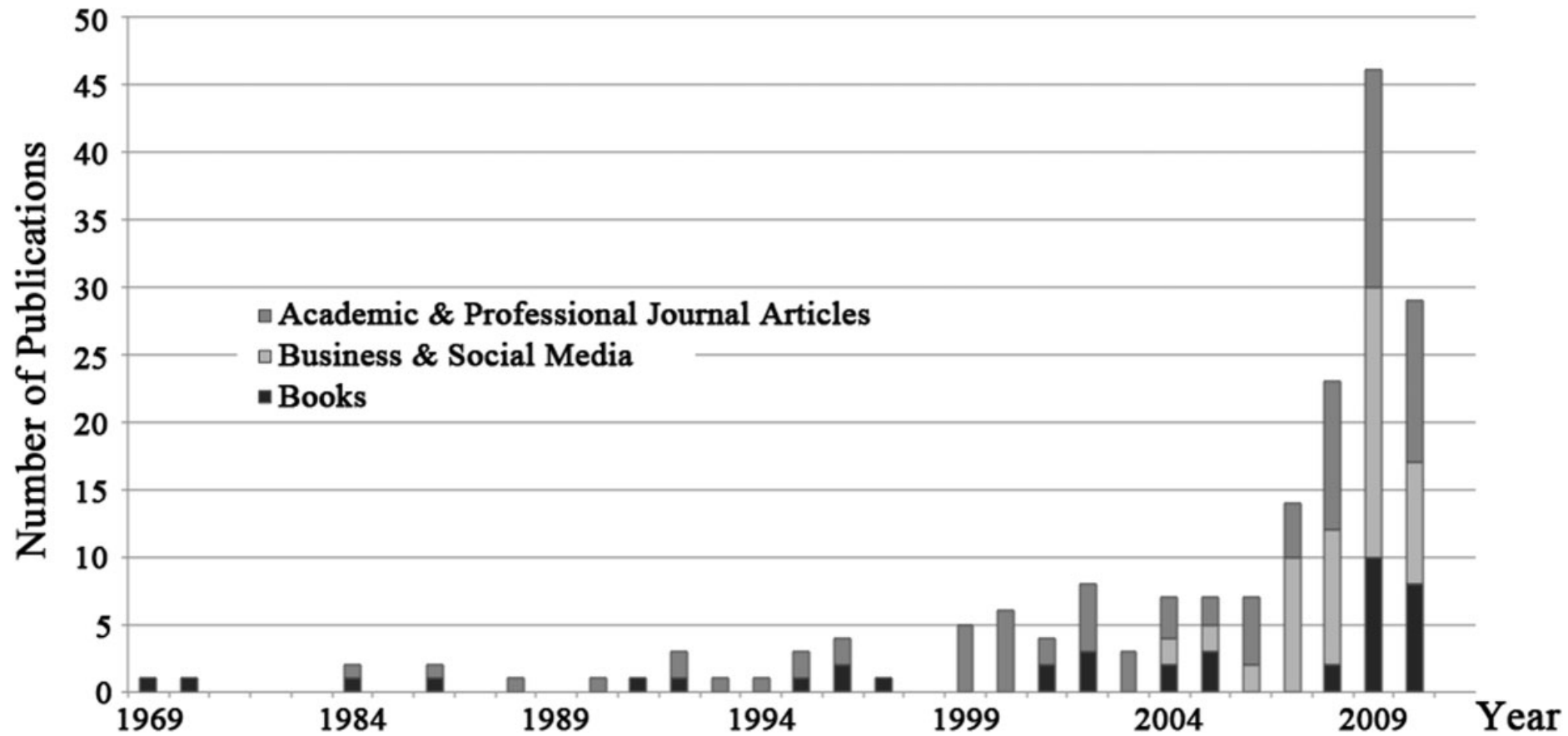
Publications

Figure 1. Timeline of Publications by Type

Johansson-Sköldberg, U., Jill Woodilla, J., and Çetinkaya, M. (2013). Design Thinking: Past, Present and Possible Futures. *Creativity and Innovation Management, 22*(2): 121-146.
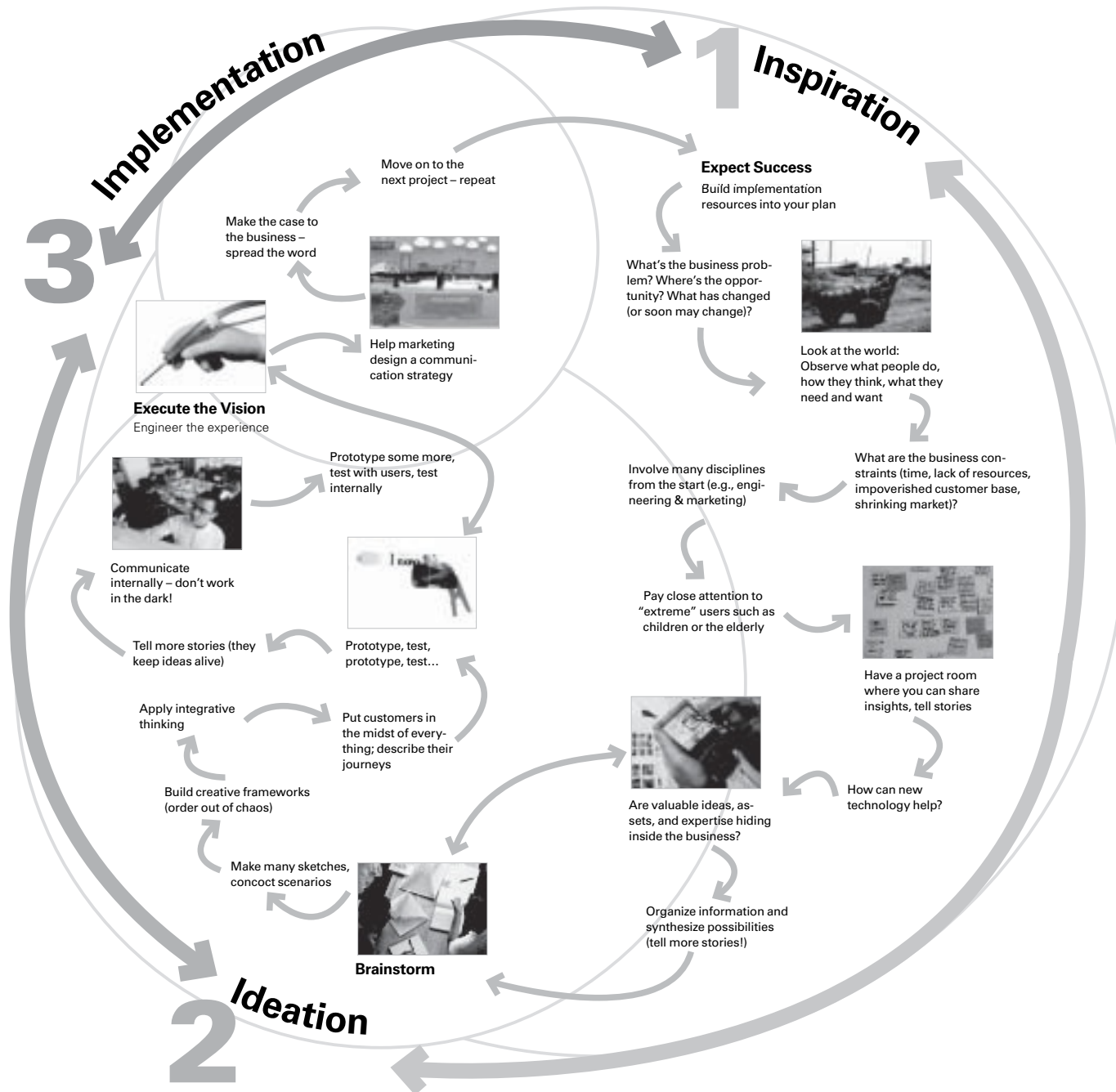
DT Perspectives

Designerly Thinking / Design:

- *Creation of artefacts* (Simon, 1969).
- *Reflexive practice* (Schön, 1983).
- *Problem-solving activity* (Buchanan, 1992 based on Rittel and Webber, 1973).
- *A way of reasoning/making sense of things* (Lawson, 2006 [1980]; Cross, 2006, 2011).
- *Creation of meaning* (Krippendorff, 2006).

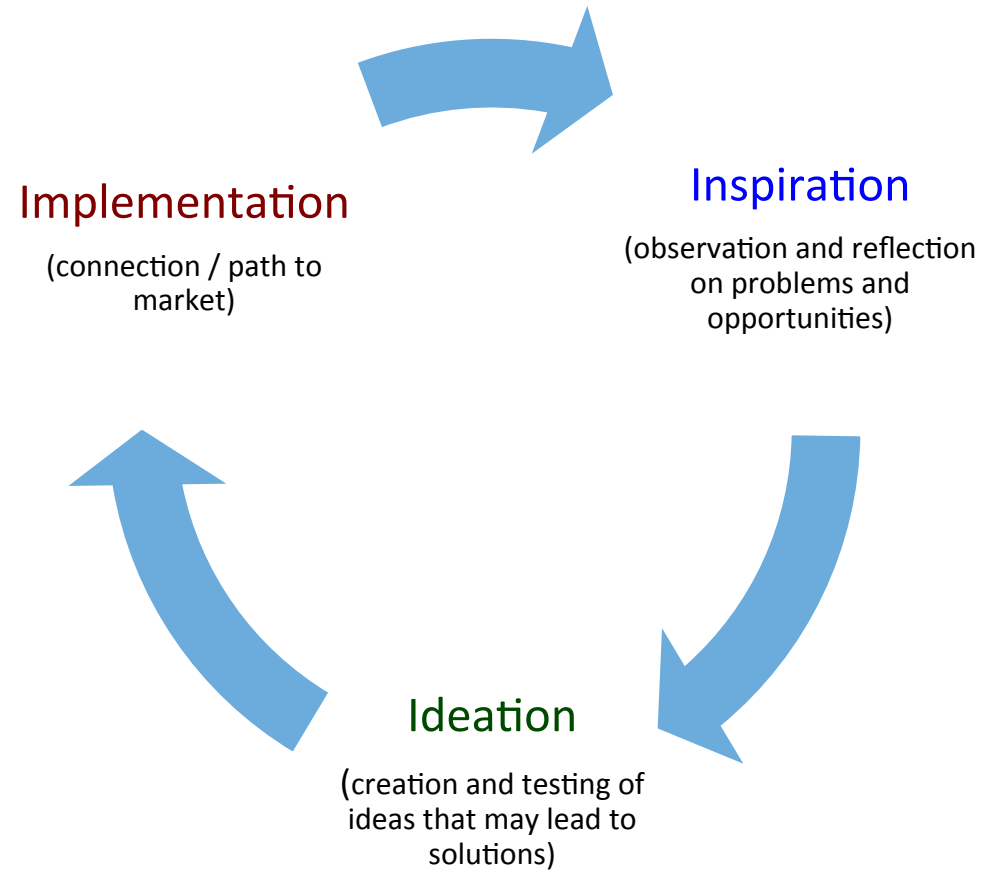## Design Thinking in Management:

- As design company IDEO's way of working with design and innovation (Kelley, 2001, 2005; Brown, 2008, 2009).
- As a way to approach indeterminate organizational problems, and a necessary skill for practising managers (Dunne & Martin, 2006; Martin, 2009).
- As part of management theory (Boland & Collopy, 2004a).
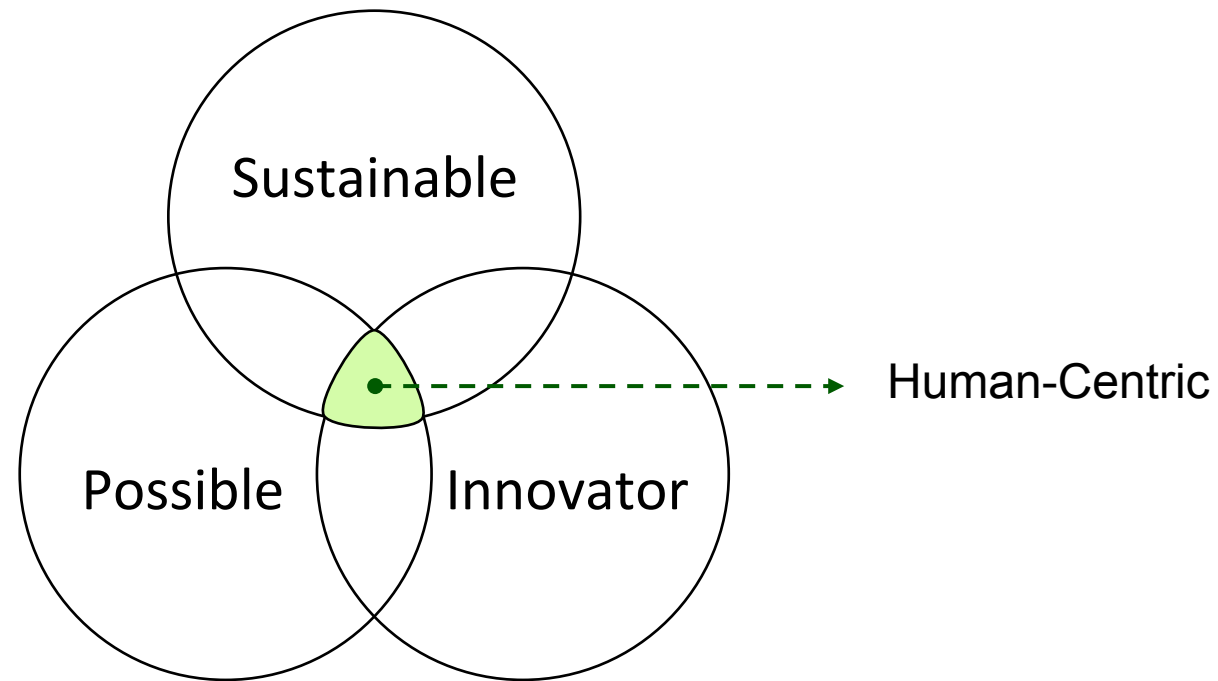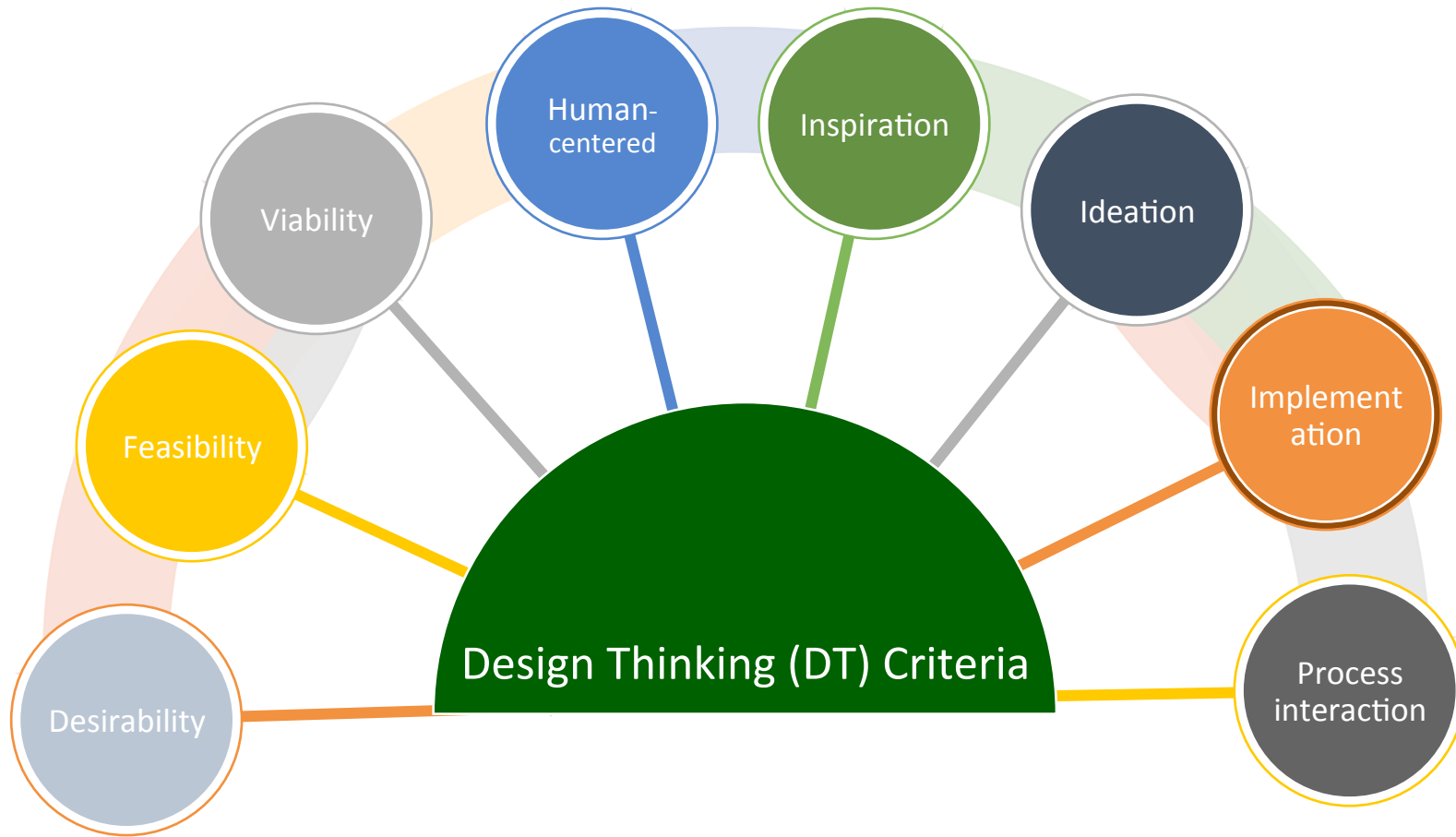
DT = Innovation Process

1 Inspiration

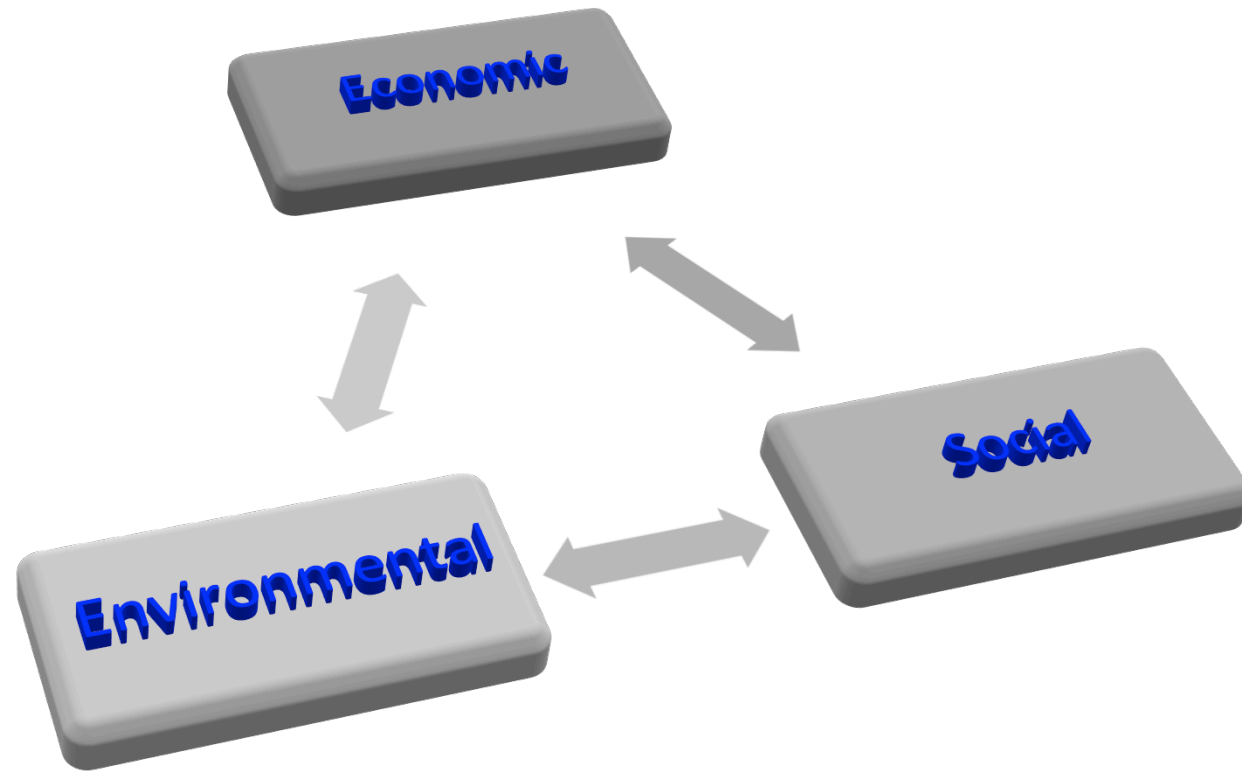**Expect Success**
Build implementation resources into your plan

What's the business problem? Where's the opportunity? What has changed (or soon may change)?

Look at the world: Observe what people do, how they think, what they need and want

What are the business constraints (time, lack of resources, impoverished customer base, shrinking market)?

Involve many disciplines from the start (e.g., engineering & marketing)

Pay close attention to "extreme" users such as children or the elderly

Have a project room where you can share insights, tell stories

How can new technology help?

Are valuable ideas, assets, and expertise hiding inside the business?

Organize information and synthesize possibilities (tell more stories!)

2 Ideation

Brainstorm

Make many sketches, concoct scenarios

Build creative frameworks (order out of chaos)

Apply integrative thinking

Put customers in the midst of everything; describe their journeys

Prototype, test, prototype, test…

Tell more stories (they keep ideas alive)

Communicate internally – don't work in the dark!

Prototype some more, test with users, test internally

Execute the Vision
Engineer the experience

Help marketing design a communication strategy

Make the case to the business – spread the word

Move on to the next project – repeat

3 Implementation

4

Design Thinking Processes

Implementation

(connection / path to market)

Inspiration

(observation and reflection on problems and opportunities)

Ideation

(creation and testing of ideas that may lead to solutions)

DT = Human-Centric Learning

Eight DT Criteria of Analysis

Sustainability Dimensions

DT for Sustainability

Design Thinking ⟷ Sustainability

Wicked Problems:

is a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize.

Rittel, Horst W. J.; Melvin M. Webber (1973). "Dilemmas in a General Theory of Planning" (PDF). Policy Sciences 4: 155–169.
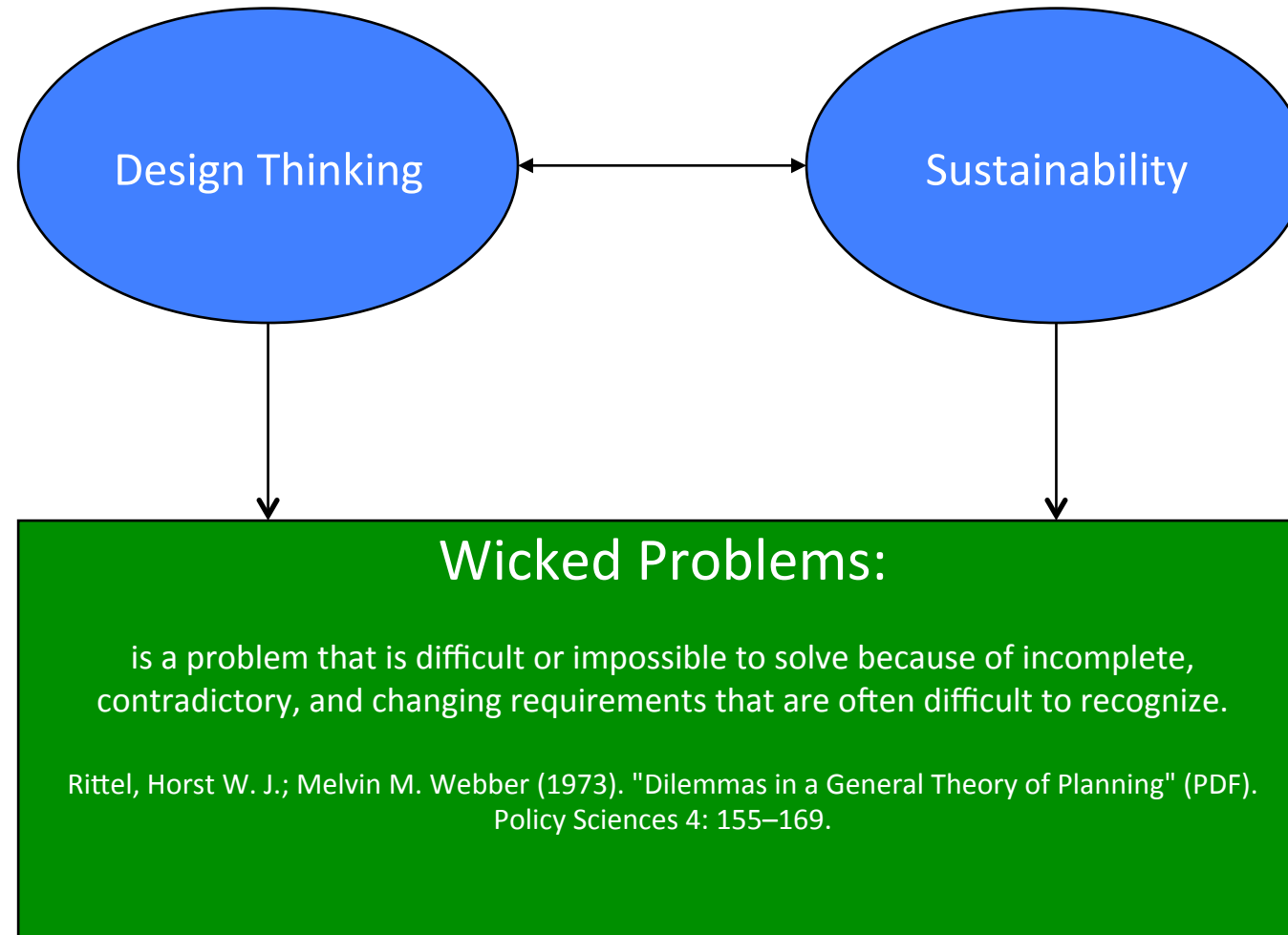
Case 1:
Water supply in Hyderabad, India

Brown, T., & Wyatt, J. (2010) Design thinking for social innovation. Stanford, CA: Stanford Social Innovation Review, Winter: 29-35.
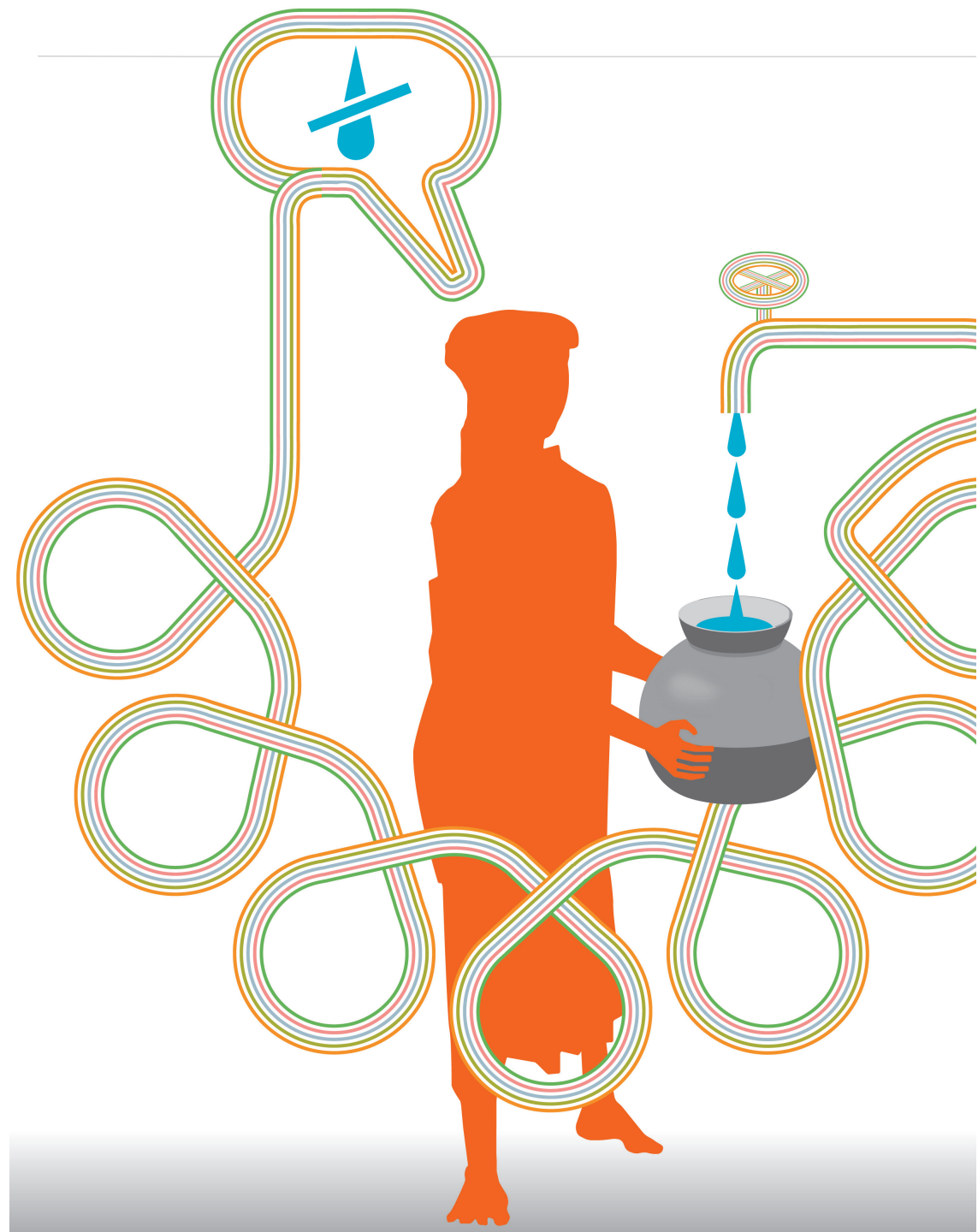
Case 2
The Brazilian Mandala System
Circular Food Production

Since 2003, BMS has benefited about 4,500 families in 18 states in Brazil and 06 countries in South America, Central America and Africa.

Mr. Willy Pessoa Rodrigues is the Founder of Agência Mandalla DHSA / Mandalla Agency HSED (Holistic-Systemic Environmental Development)
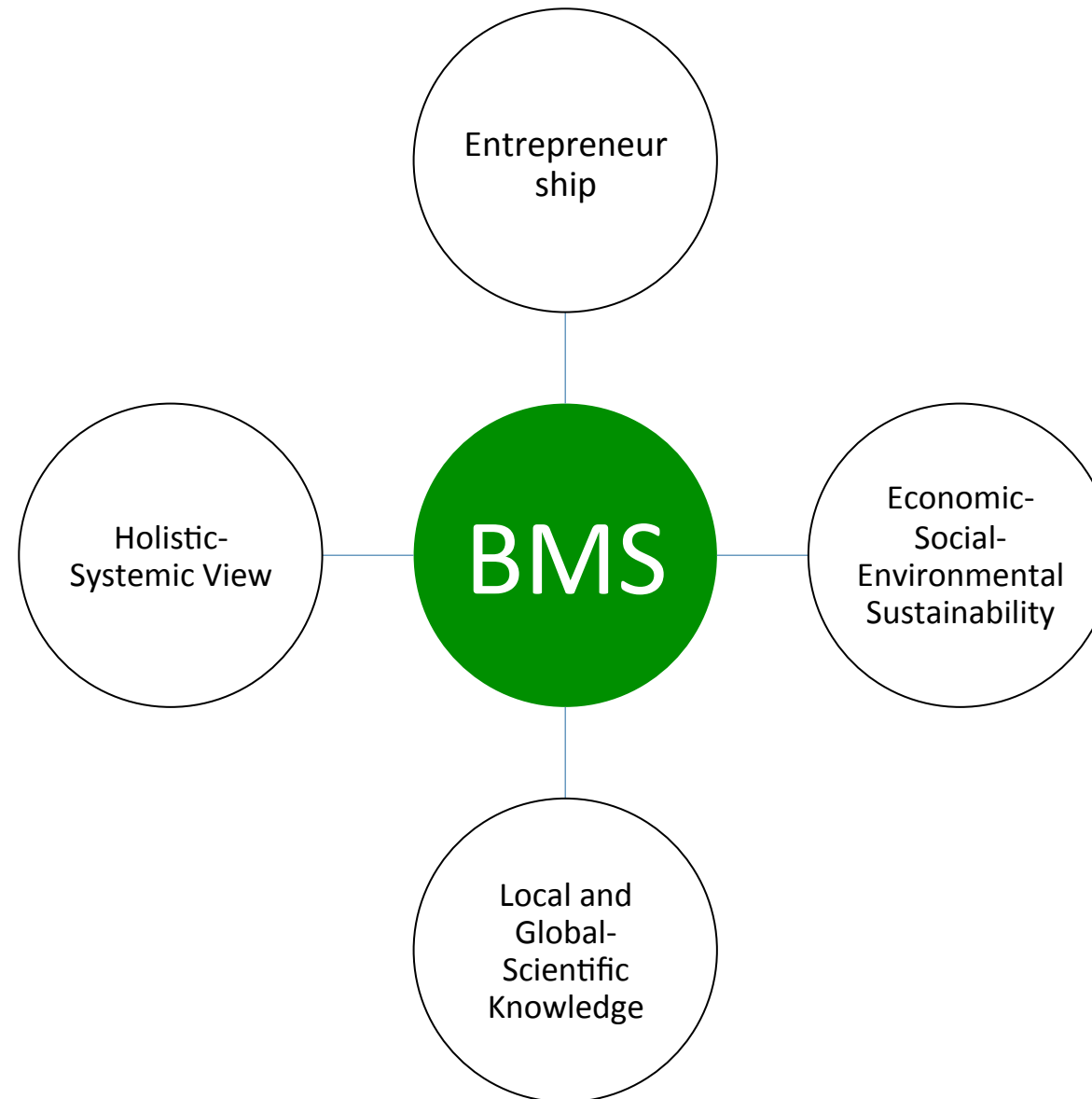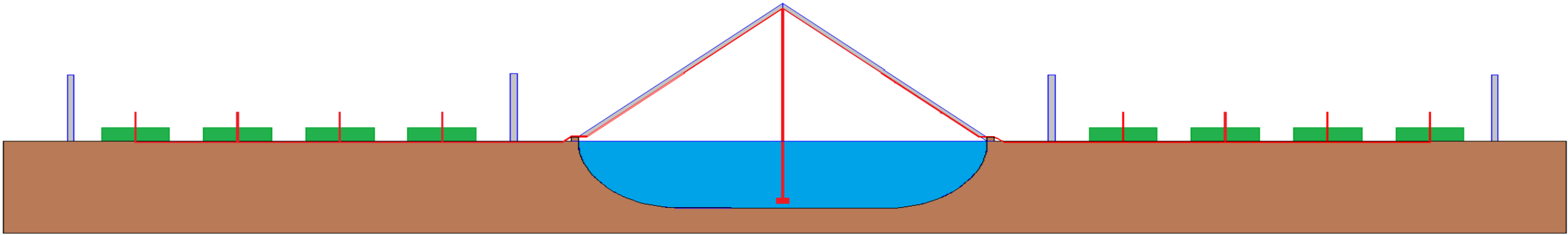
Life Quality Circles 1-3: Farmers' own consumption / subsistence (feeding themselves)
Economic Productivity Circles 4-8: Income generation / farmers sell their products at markets
Environmental Equilibrium Circle 9: Mandalla System's protection with native and local trees

The Brazilian Mandalla System's Values

The Brazilian Mandala System's Mission

- "Transform individuals and communities in economically profitable ventures, entrepreneurs, socially responsible and environmentally sustainable,

  ✓ empowering and educating them for responsible production and responsible consumption" (Agência Mandalla DHSA / Mandalla Agency HSED)

Case 3
Seed Paper (RJ) –> Recycled paper + seeds

Production and sales of Seed Paper made from mixing / blending / adding tree seeds to discarded-recycled papers (whereas, BoP communities are raw paper collectors / distributors / suppliers / partners).

The company developed its own technology for recycled papers, which germinate and produce flowers, herbs and even vegetables in the period 4-5 months if planted in a vase. The seeds remain alive on paper between six and eight months.

Case 4
Casulo Feliz (Silkworm / Cocoon) –> Silk fabrics

Production silk from discarded silkworms (whereas, BoP communities are collectors / suppliers / partners).
Use of natural / no artificial colors.

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Questions?
Thank you!

Farley S. Nobre is Professor of sustainability and strategy with research on Sustainable Entrepreneurship, Corporate Sustainability, Base of the Pyramid, Sustainability in Higher Education, Design and Systems Thinking, along with Organization Theory, Manufacturing, Cognitive Machines and Fuzzy Logic. Ph.D. in Manufacturing and Mechanical Engineering at The University of Birmingham (UK, 2005), and Guest Researcher with the Institute of Organization Theory and the Artificial Intelligence Research Group of Humboldt University of Berlin (2003).