Multi-Disciplinary Creativity and Collaboration: Utilizing Crowd-accelerated Innovation and the Internet

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Overview

- The tradition and challenge of the disciplinary boundary

- Cognitive diversity

- Human components

- Components of the problem and environment

- The challenge of integration

- An example

- Conclusions

Collaboration

Nothing new that is really interesting comes without collaboration

— James D. Watson —

AZ QUOTES

Your Comfort Zone

Where the magic happens

The Tradition of the Disciplinary Boundary

- Defines the existing discipline
- Establishes the culture, norms, protocols, procedures, and practices within the discipline
- Enables proposals for grant funding to be reviewed by established experts within the discipline
- Academia and research labs are often structured around this concept
- Can result in budget silos

WARNING
DISCIPLINE BOUNDARY
EXPERTISE NOT ASSURED ON OTHER SIDE
SOME HUMILITY REQUIRED

The Challenge of the Disciplinary Boundary

- Most new subjects develop at the boundary between existing disciplines

- Real-world problems often require multi-disciplinary teams to solve them

- Creative industries require multi-disciplinary teams to create products and services to meet current and future user needs

- Many new products and services are underpinned by technology yet require the integration of aspects of other disciplines to make them usable, beneficial, and acceptable

Cognitive Diversity

Varied teams lead to –

- Better solutions

- Greater productivity

- Finding solutions when problems are complex

cognitive diversity

he extent to which the group reflects differences in knowledge, including beliefs, preferences and perspectives.

Miller, et al (1998) Strategic Management Journal

Human Components

- Skills
- Imagination
- Expertise
- Motivation
- Experience
- Awareness

Components of the Problem and the Environment

- Challenge and degree of engagement

- Freedom to explore

- Appropriate resourcing

- Effective team-working

- Supportive leadership by managers

- The organisation's values support collaboration and sharing

Orange arrow = insular, dogmatic individual or small group

Mediocre Solution Mesa

Problem-Solving Success -->

Optimal Solution Piccacle

Dogmatic Sinkhole

Problem-Solving Landscape

Don Ambrose 2012

Blue arrow = insular highly creative individual or small group

Green dots = massive, emergent, online collaboration of individuals with modularized microexpertise generating collective intelligence beyond the capacities of any individual or insular group
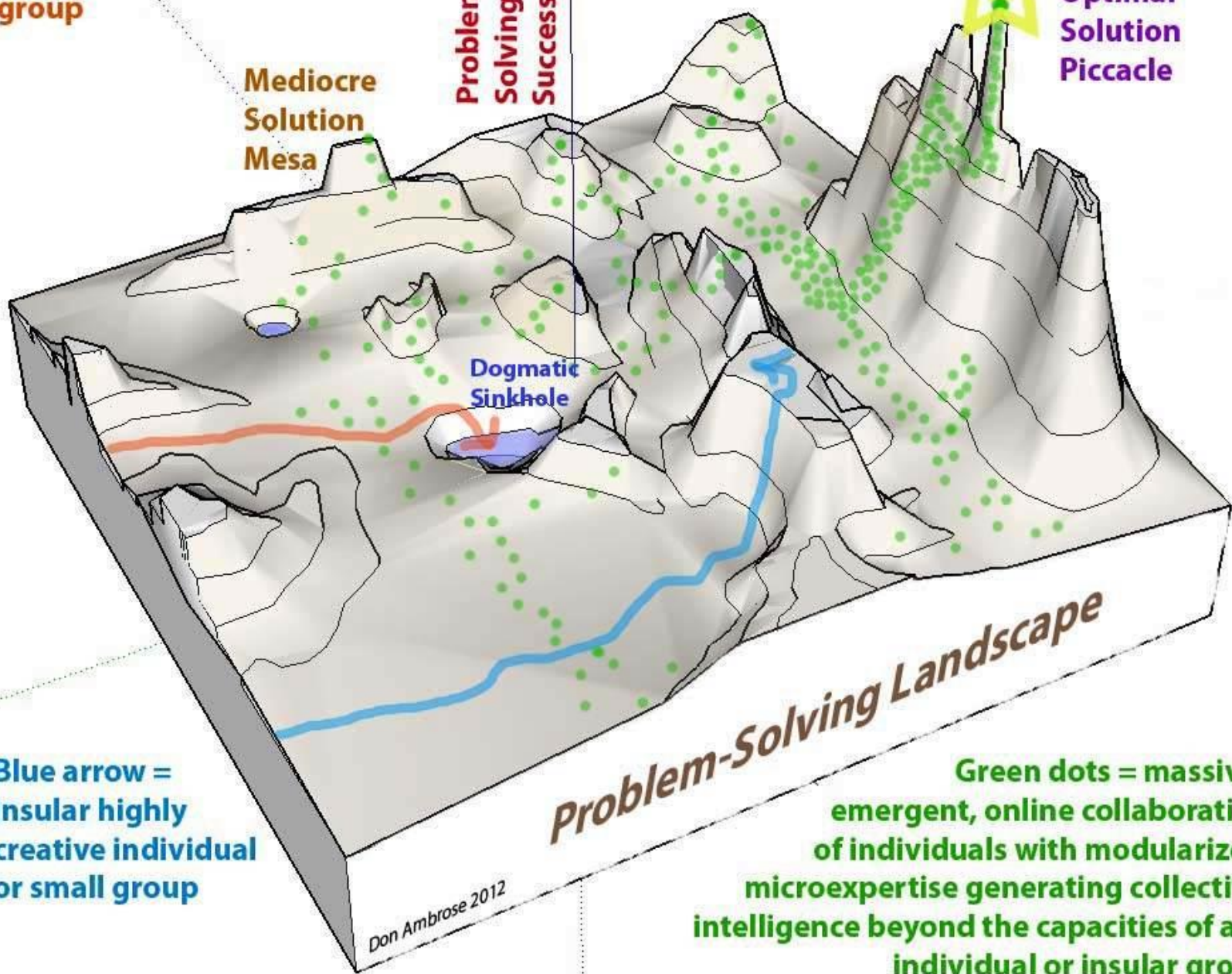
Translation of Amabile's Six Key Factors into a Functional Model

The Challenge of Integration

- Importance of maintaining a 'virtuous circle' around the creative team and the practitioners in the centre

- The elements of the 'virtuous circle' are generally under the control of management rather than the practitioners

- Therefore cultural embedding of these components into the organisation is necessary

An Example: Crowd Accelerated Development - 1

- The concept is already partly established in the practice of releasing software in its Beta phase to experienced users for testing and feedback

- Accelerates innovation, but this is principally at the 'user consumption point' rather than the 'design stages'

- What is needed is more effective crowd feedback at earlier stages of the design and innovation process, without compromising key ideas or releasing exploitable ideas to potential competitors

An Example: Crowd Accelerated Development - 2

- Utilize technology to intensify the potential for crowd feedback

- Social media can provide numerous avenues capable of gathering momentum

- User requirements and trends can be discussed in blogs

- Market needs and user skills can be more clearly identified

- How many versions of Windows or Mac OS would have been cancelled if this had been done? (or were they just produced for the marketing department, irrespective of need, functionality and interfacing?)
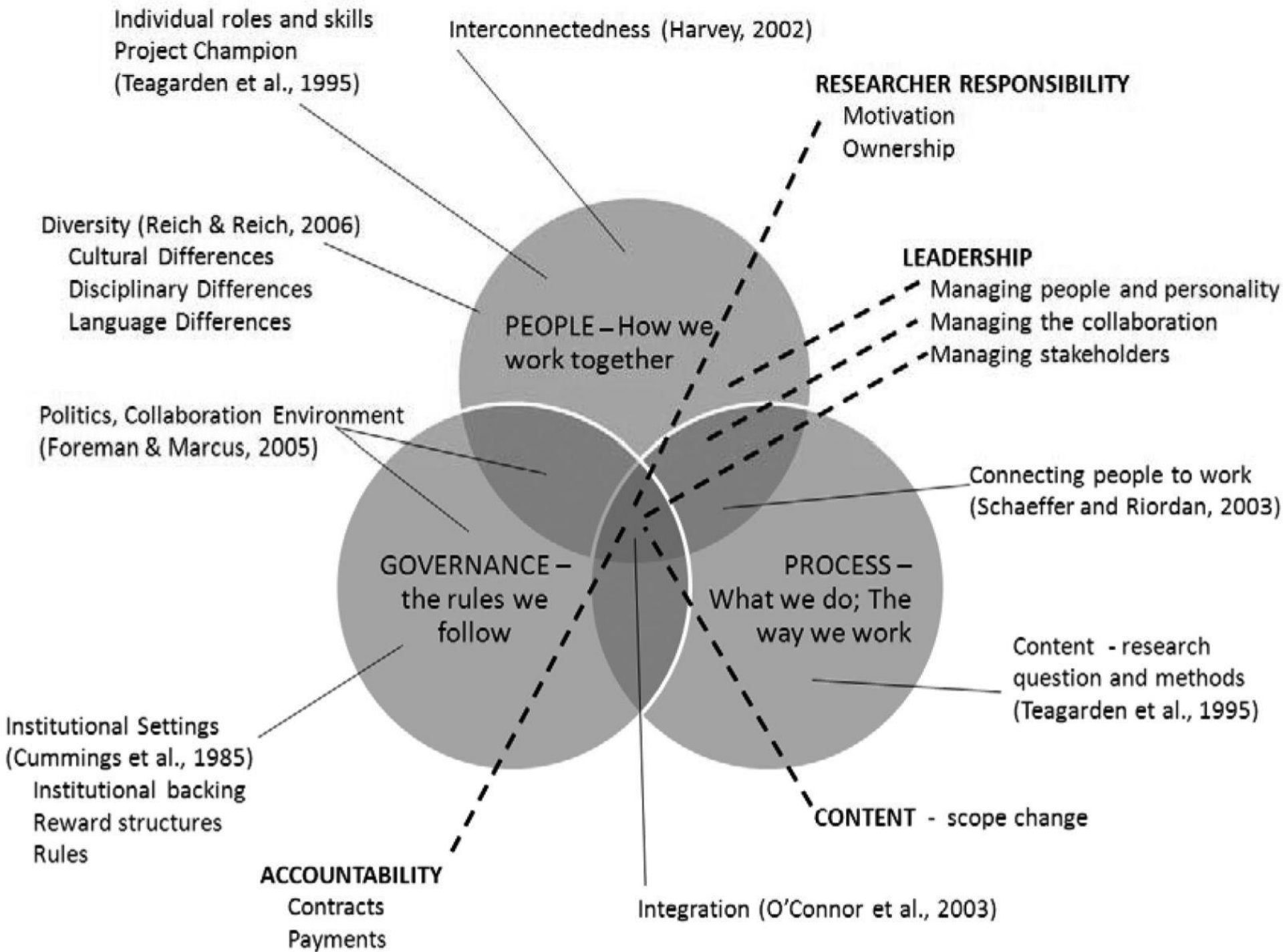
Conclusions

- The impact of creative collaboration presents an opportunity for significant rewards and impact on short and long-term scales

- Advancing technology and social media provide enablers to facilitate crowd accelerated developments

- Integration, and enhancement of creative teams working together over large distances, often bringing together different cultures and social contexts – brings greater potential diversity and creativity

- Opportunity to harness these global creative assets for the benefit of future environments, products and services – on a global basis
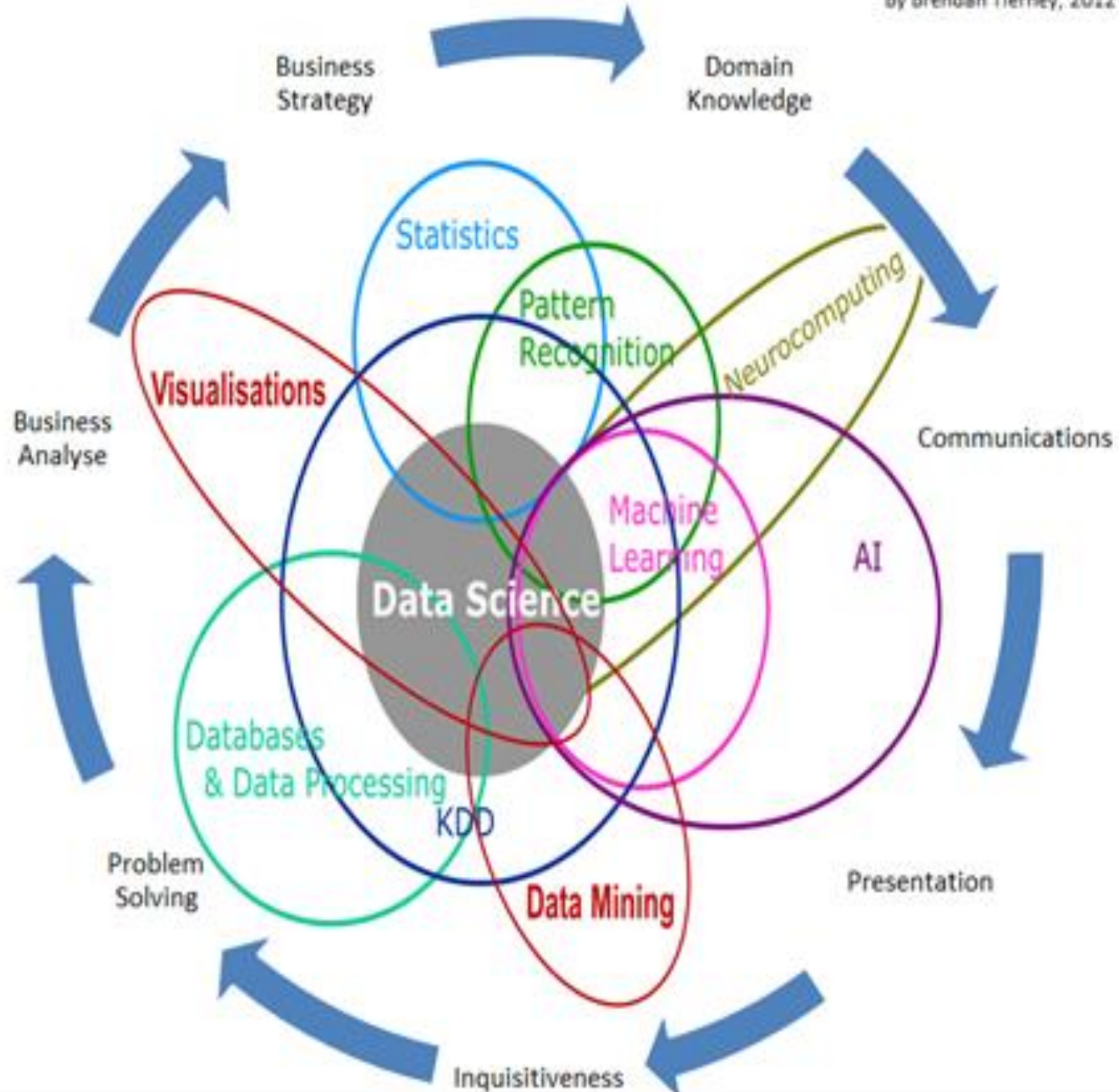
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These slides are at –

https://sites.google.com/site/raearnshaw/presentations

Extra Slides – for any Discussion or Q & A

Individual roles and skills
Project Champion
(Teagarden et al., 1995)

Interconnectedness (Harvey, 2002)

RESEARCHER RESPONSIBILITY
Motivation
Ownership

Diversity (Reich & Reich, 2006)
Cultural Differences
Disciplinary Differences
Language Differences

LEADERSHIP
Managing people and personality
Managing the collaboration
Managing stakeholders

PEOPLE – How we work together

Politics, Collaboration Environment
(Foreman & Marcus, 2005)

Connecting people to work
(Schaeffer and Riordan, 2003)

GOVERNANCE – the rules we follow

PROCESS – What we do; The way we work

Content - research question and methods
(Teagarden et al., 1995)

Institutional Settings
(Cummings et al., 1985)
Institutional backing
Reward structures
Rules

CONTENT - scope change

ACCOUNTABILITY
Contracts
Payments
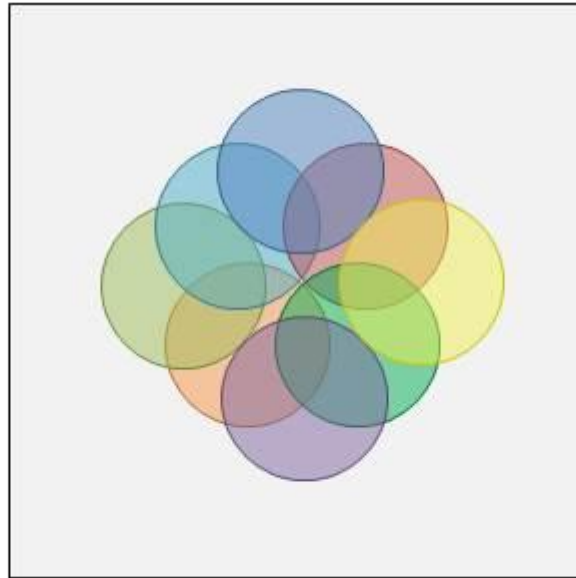
Integration (O'Connor et al., 2003)

Multi- → Inter- → Transdisciplinary
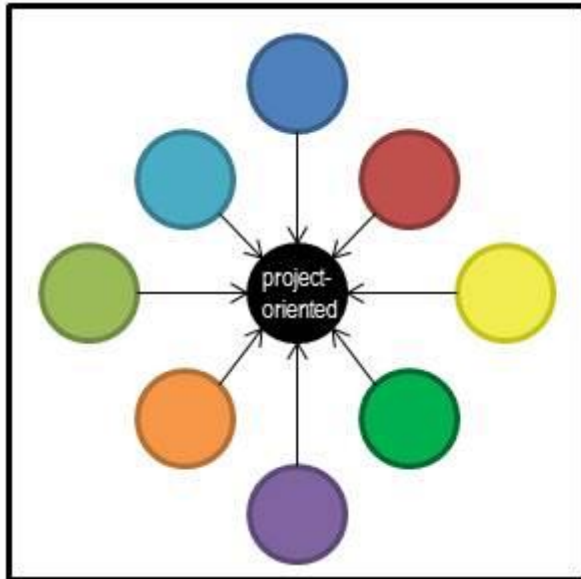
Multidisciplinary | Interdisciplinary | Transdisciplinary
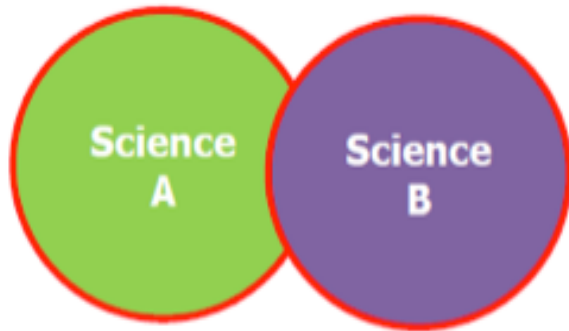
(project-oriented)
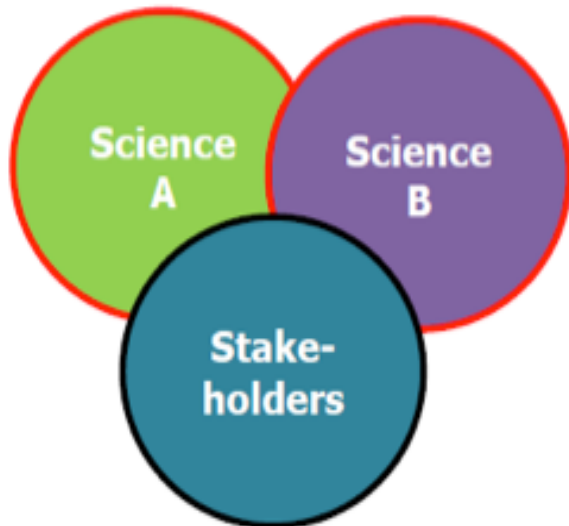
(society, world-view, stakeholders)
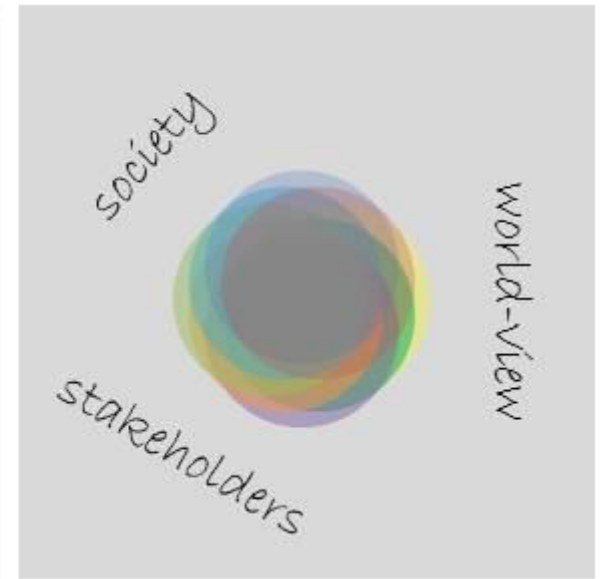
- **Integration:** Separated → Integrated → "Become One"
- **Perspective:** ≥ 2 disciplinary → include stakeholders+
- **Team's Goals:** Project → Learning, New Ideas → Problem Oriented
- **Leadership:** Varied Leadership → Rotating Leadership?

Disciplinary research within academia

Interdisciplinary (multidisciplinary) research within academia

Transdisciplinary research goes beyond academia and involves stakeholders from policy, civil society etc.

TEAMWORK

Never underestimate it.