

15/11/2023

“PROMOTING LEARNING IN INFRASTRUCTURE PROJECTS”



Prepared by
Sana Amjad Lateef
PhD Candidate

OVERVIEW

- 1. Introduction**
- 2. The Research topic**
- 3. Research Approach**
- 4. Progress & Future Research**
- 5. Current Work- LL Structure**

Questions and Discussion

THE SUPERVISORY TEAM



Promotor: Marcel J.C.M Hertogh
Daily Supervisor: Johan Ninan
Second Supervisor: Yan Liu

Go/No-Go Committee: Hans Bakker
P.W.Chan

Faculty of Civil Engineering and Geosciences, Delft University of
Technology (TU Delft), the Netherlands
School of Management and Engineering, Nanjing University,
China

THE PHD CANDIDATE

✓ Sana Lateef
PhD Candidate

✓ Bachelor of Architecture
MSc Project Management
MSc Urban Management & Development

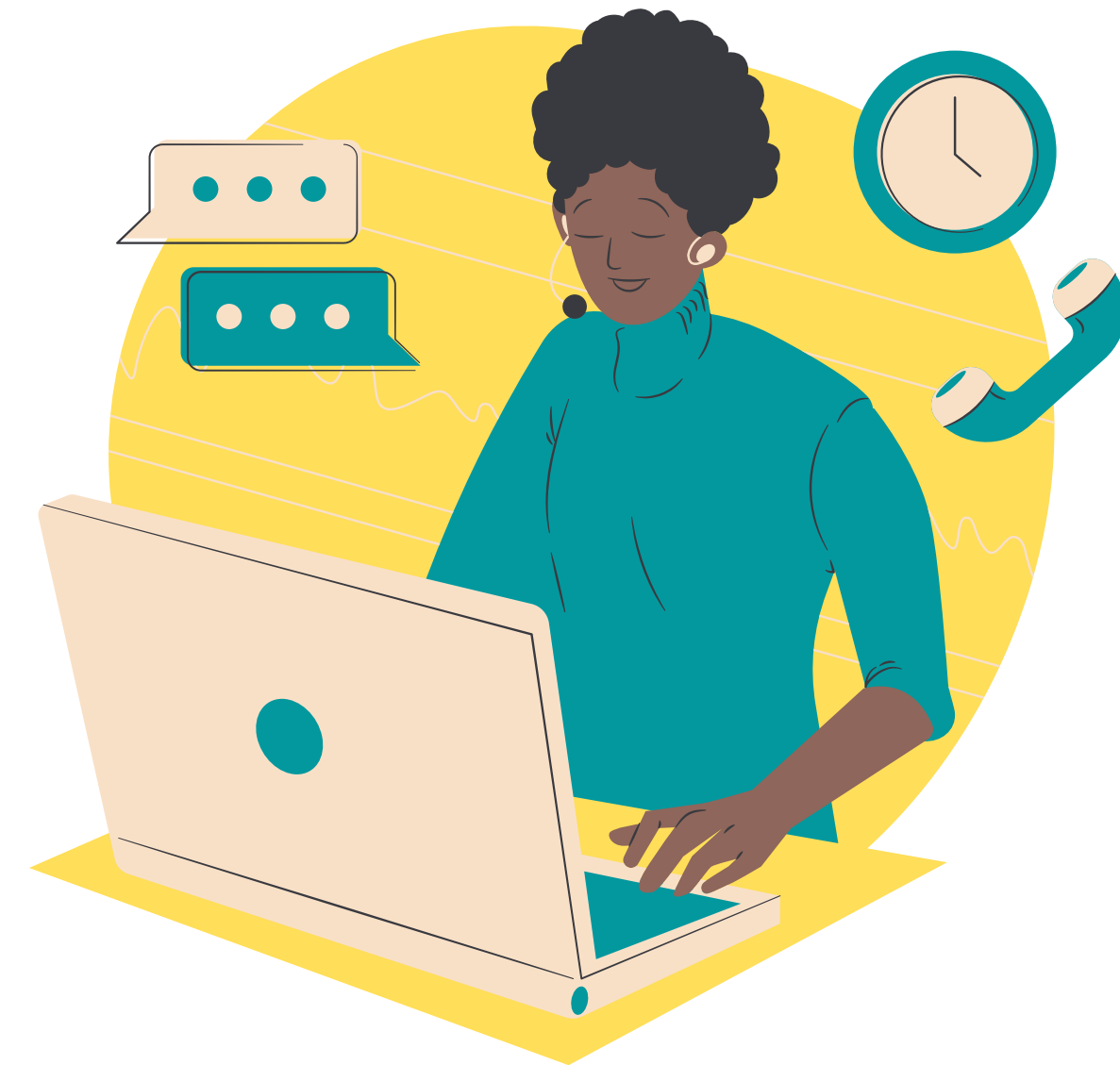
✓ Project Manager
Consulting Architect
Urban Planner R&D

✓ Nature
Roller Coasters
Painting



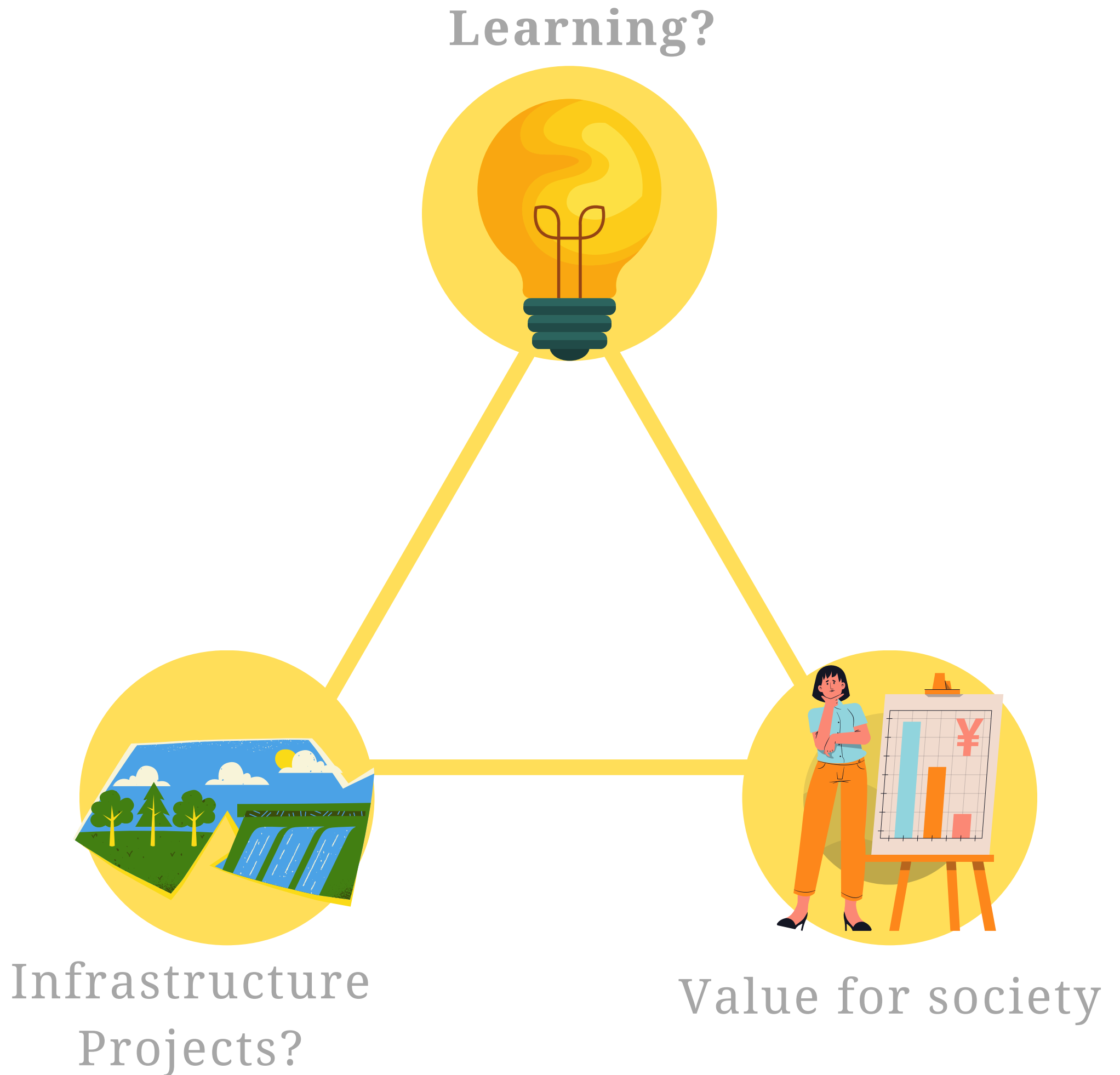
Pakistan

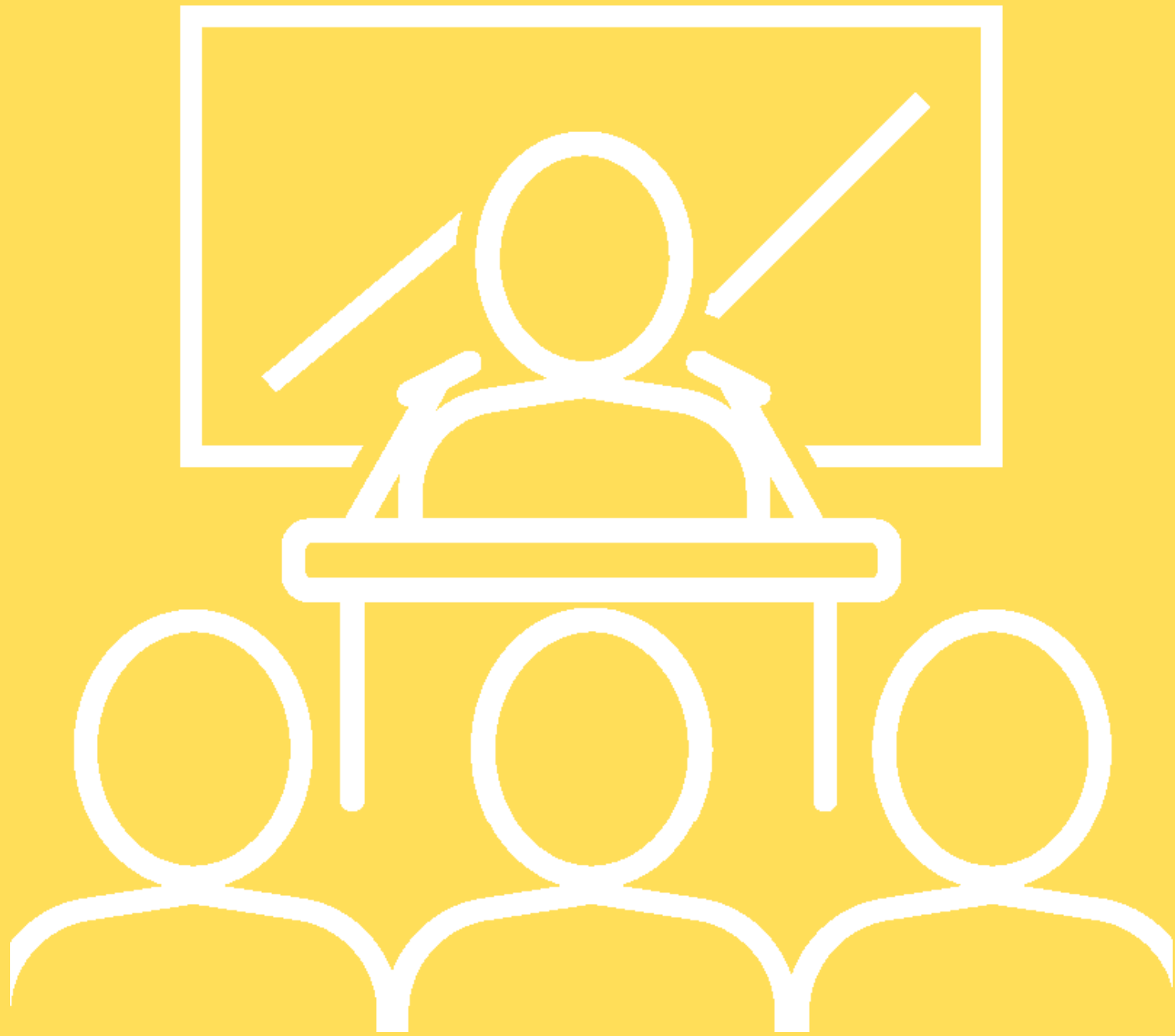
WHAT IS MY RESEARCH ABOUT?



“Promoting learning in infrastructure projects to generate more value for society”

TITLE





**WHY IS
LEARNING
IN PROJECTS
IMPORTANT?**

The "Story"

1



Infrastructure projects have a paramount impact on economic, social, spatial, political and environmental aspects

(WINKELMANN ET AL., 2023)
(GAN ET AL., 2023)


2



There is a shift in organizational practices (Permanent Orgs----> Temporary Orgs.-Project based Orgs.)

LINDKVIST, SODERLUND, & TELL, (1998)
BRADY & DAVIES, (2004)
ERIKSSON, LEIRINGER, & SZENTES, (2017)


3



Complexity & uncertainty is rising (external & internal factors)

WILLIAMS T. (2008)

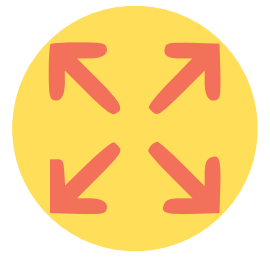
4



Projects are the locus of knowledge and learning

LINDNER & WALD, (2011)
WONG & LAM, (2012)
ERIKSSON, (2013)


5



(Understanding of) Nature of Projects is evolving. One-off/unique ----> commonalities

HOLT, LOVE, & LI, (2000)
BRADY & DAVIES, (2004)

6



Field of Project Management is advancing continually. Is learning up to speed with this?


7



Project learning approaches are built on literature from organizational studies

SWAN ET AL., (2010)
LOVE ET AL., (2014).

8



Learning is difficult to capture and continues to evade in practice

(LINDNER & WALD, 2011)
(ERIKSSON ET AL., 2017)

9



Wheel is re-invented everytime

KEEGAN AND TURNER (2001)
PRENCIPE AND TELL, (2001)

RESEARCH GAPS

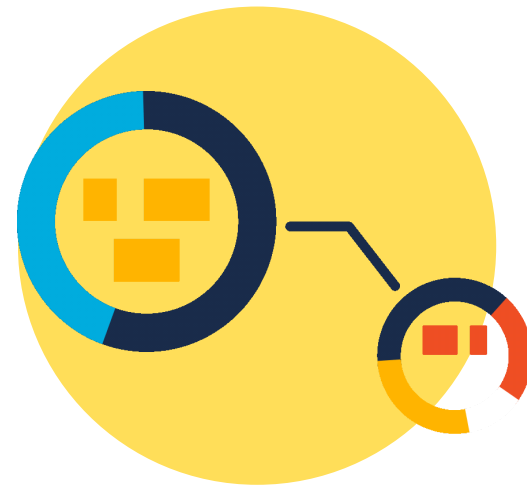
RG1



Project learning research lacks a holistic perspective

(LOVE ET AL., 2014).
(CHRONÉER & BACKLUND, 2015)
(LIU ET AL., 2021)

RG2



Project learning literature is not built on the understanding of temporary forms of organizations. Learning continues to evade in practice

(SWAN ET AL., 2010)
(LINDNER & WALD, 2011)
(ERIKSSON ET AL., 2017)

RG3



Learning methods for temporary forms of organizations are underdeveloped

(LINDNER & WALD, 2011)
(WONG & LAM, 2012)
(ERIKSSON, 2013)

RG4



Need for context based learning in infrastructure projects

(WINKELMANN ET AL., 2023)
(GAN ET AL., 2023)

RESEARCH AIM

"To investigate and identify a theoretical and practice-based approach to enable and design learning in the context of infrastructure projects to promote learning in project-based organizations."

To achieve this aim, this research will focus on

RF1

Developing a **theoretical understanding** of learning from a project perspective and provide a structure to the development of learning in projects overtime.

RF2

Investigating how project learning is carried out **in practice** by project-based organizations in infrastructure projects.

RF3

Creating a **framework** to explain the process of learning in infrastructure projects.

RF4

Implementing the learning framework in an infrastructure project to provide suggestions to project-based organizations for facilitating learning.

RESEARCH QUESTIONS

How can we enable and design learning in infrastructure projects to promote learning in project-based organizations?

Sub-questions

What are the key trends of learning within and across projects?

RQ1

What methods are used to enable learning in infrastructure projects in practice, how is learning embedded in future projects, and how do managers and other stakeholders implement these methods?

RQ2

How can project-based organizations support and organize learning in infrastructure projects, and what strategies and tools can be used to promote participation and engagement among stakeholders?

RQ3

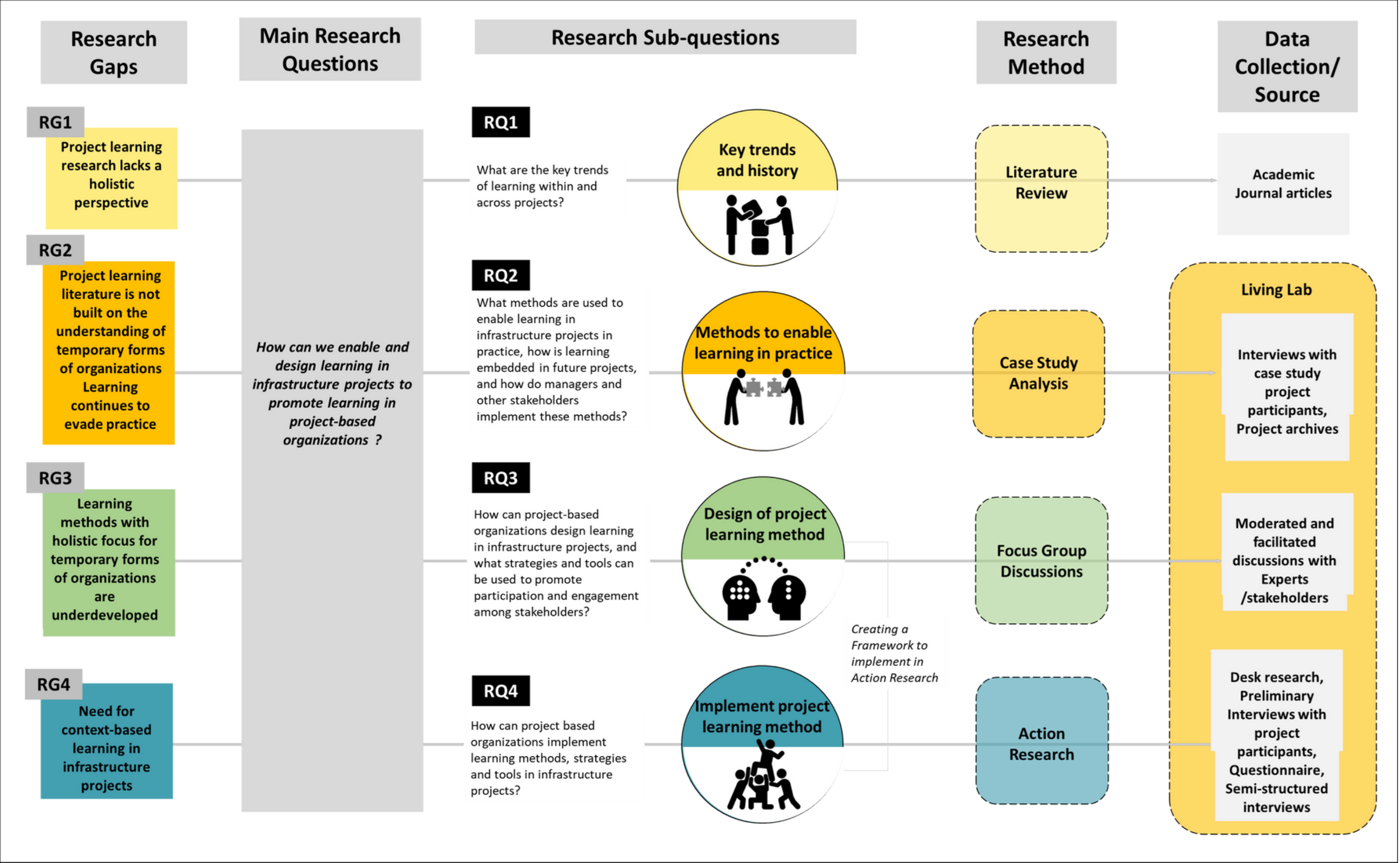
How can project based organizations implement learning methods, strategies, and tools in infrastructure projects?

RQ4



3. **RESEARCH APPROACH**

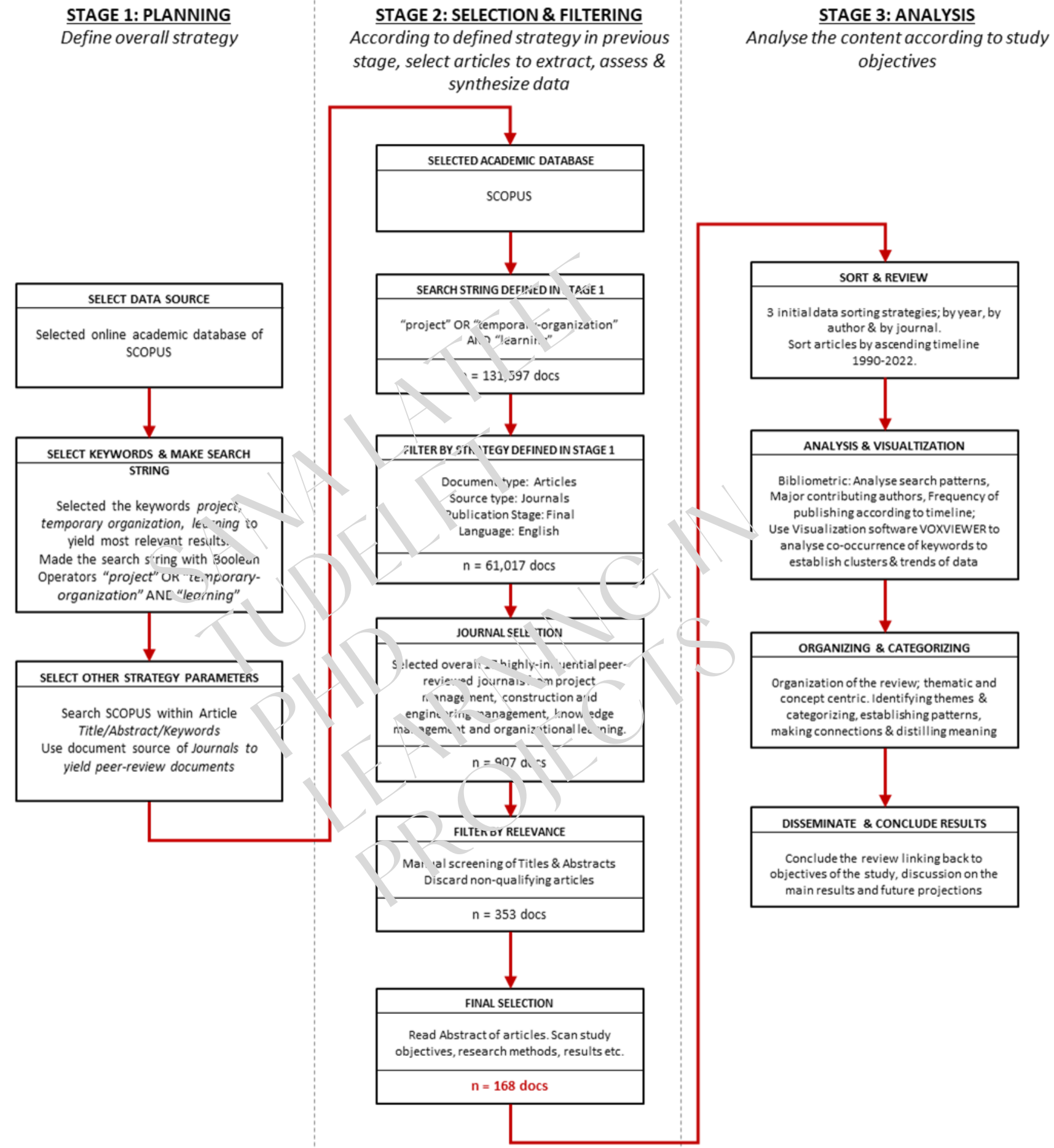
LIVING LAB





4. HOW CAN WE LEARN?

STEPS OF SYSTEMATIC LITERATURE REVIEW



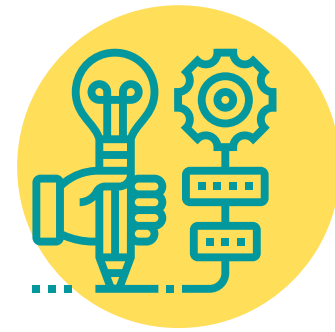
SYSTEMATIC LITERATURE REVIEW

SANA LATTEEF
TUDELFT
PHD
LEARNING IN
PROJECTS

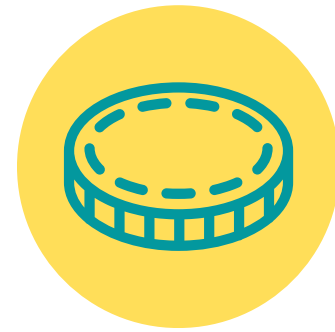
FUTURE RESEARCH DIRECTION OF LEARNING WITHIN AND ACCROSS PROJECTS.



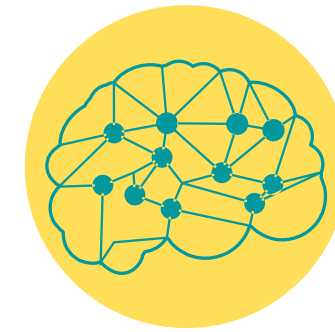
Rigidities of PM,
deviation from **iron triangle**,
re-engineer the link
of learning to social
& human elements



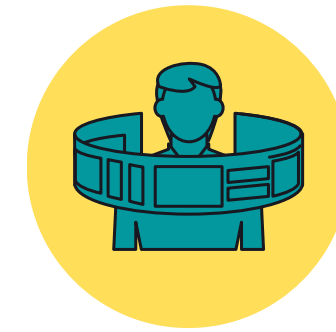
Social,
Collaborative
work with focus
on **Innovation** is
paramount



Technology and Social factors
are flip sides of
the coin in the
paradigm of
learning



Application of AI in PM.
Scheduling,
Automation,
Machine learning,
Predictive Analysis

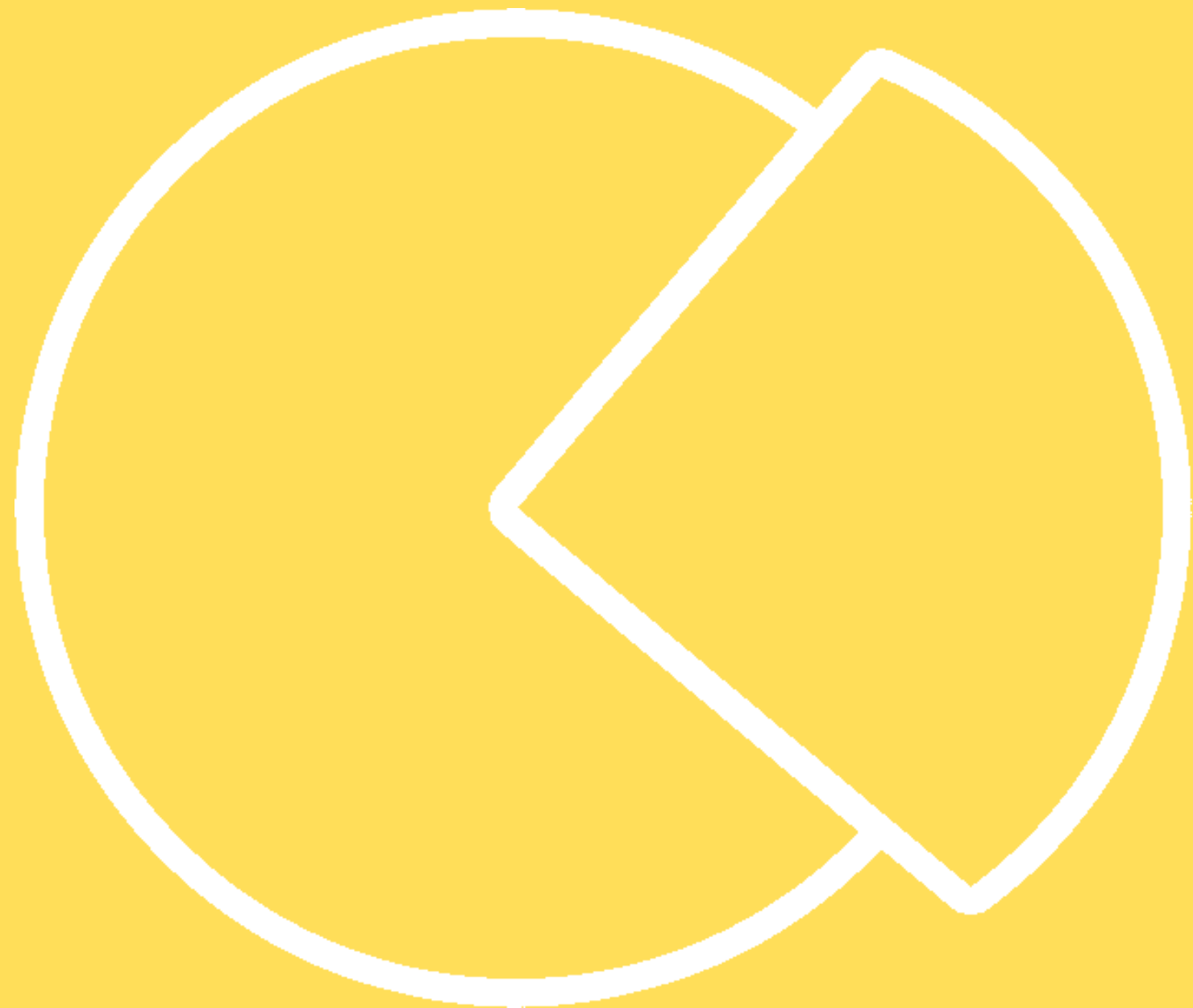


Mechanisms & Frameworks
that incorporate human
elements + technological
development in both
predictive environments
& uncertainty.



Researchers + Industry collaborations
Case studies+action
research

**WHAT AM I
WORKING ON
CURRENTLY?**



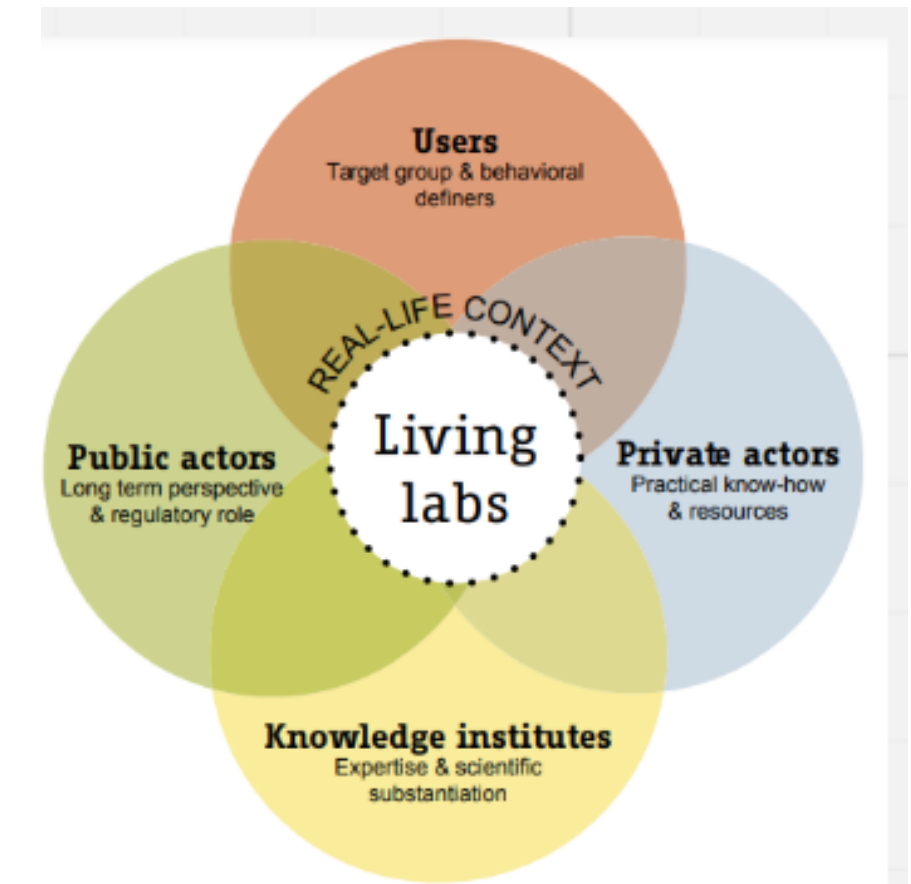
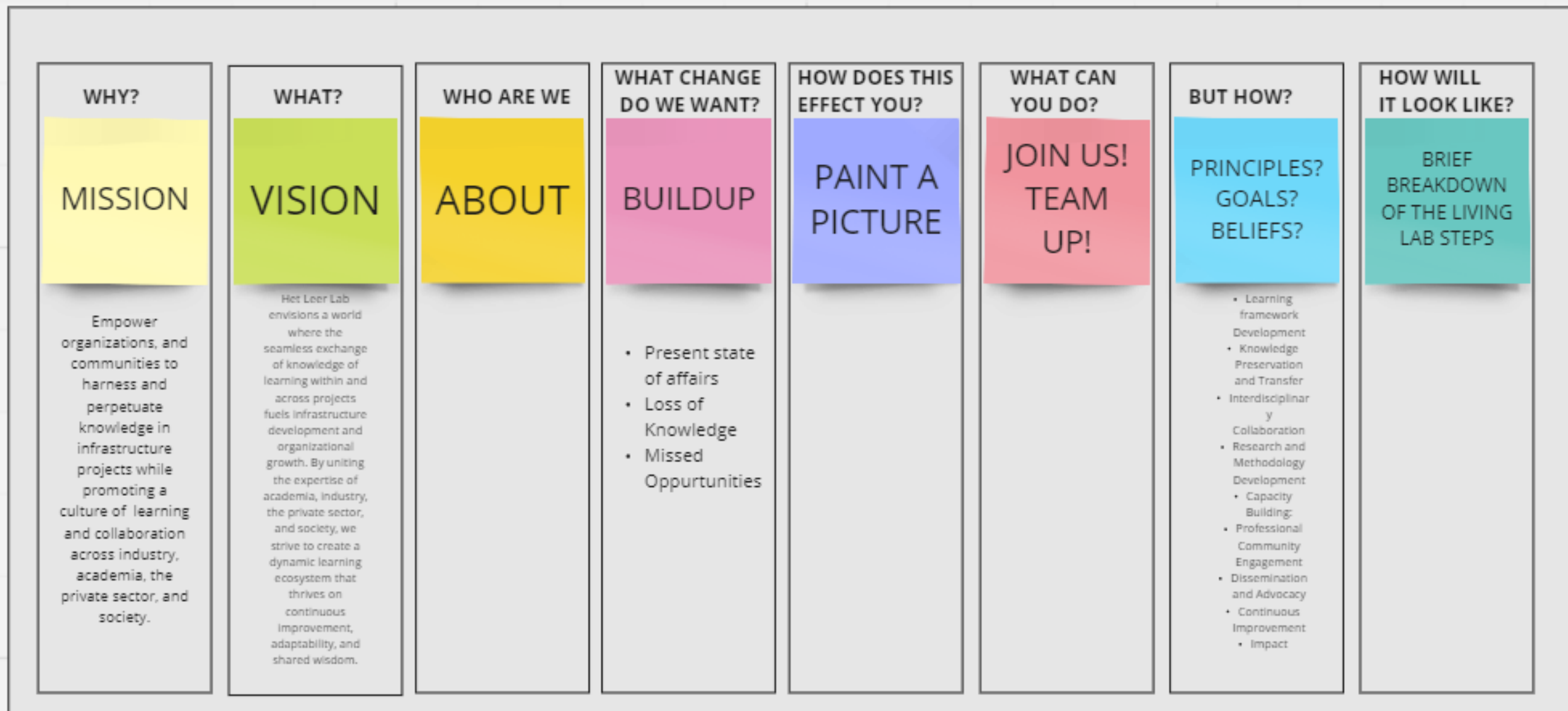
**STRUCTRE
WORKING
MONITORING
EVALUATION**



MANIFESTO COMPONENTS

work in progress

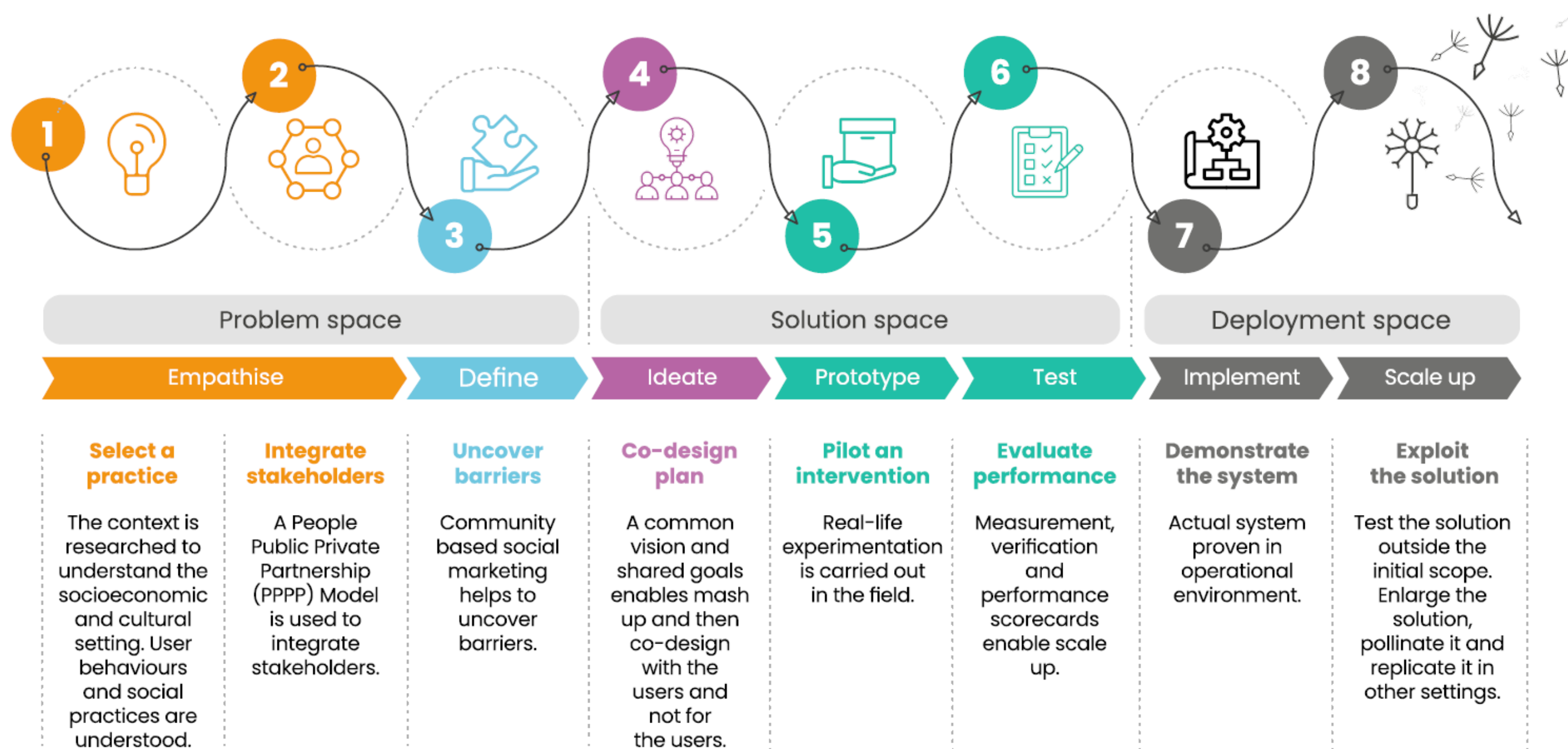
Het LeerLab voor Infrastructuur projects



work in progress

5.

DESIGNING THE LIVING LAB STRUCTURE



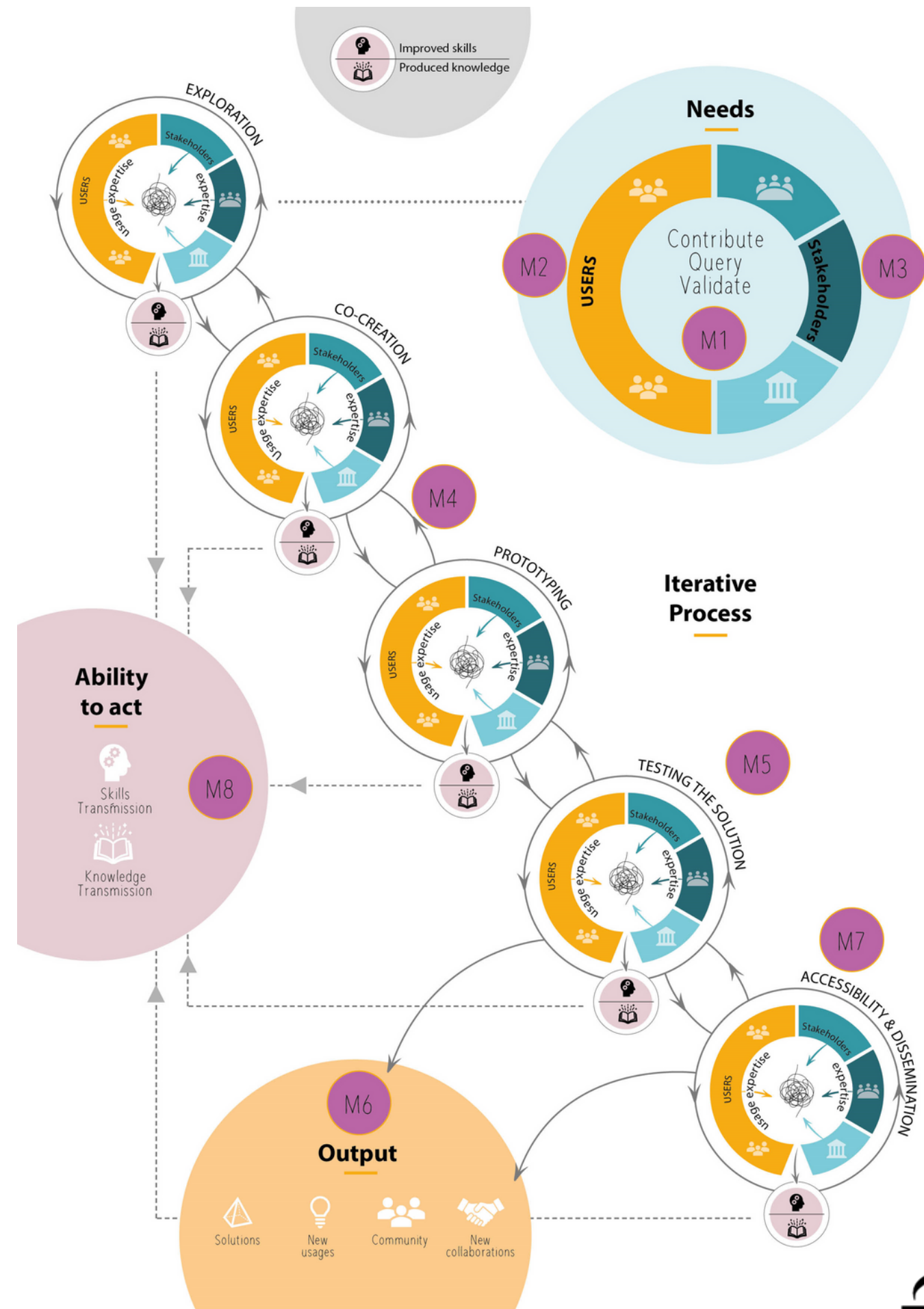
*Adapted from Mastelic, 2019

LIVING LAB: EVALUATION

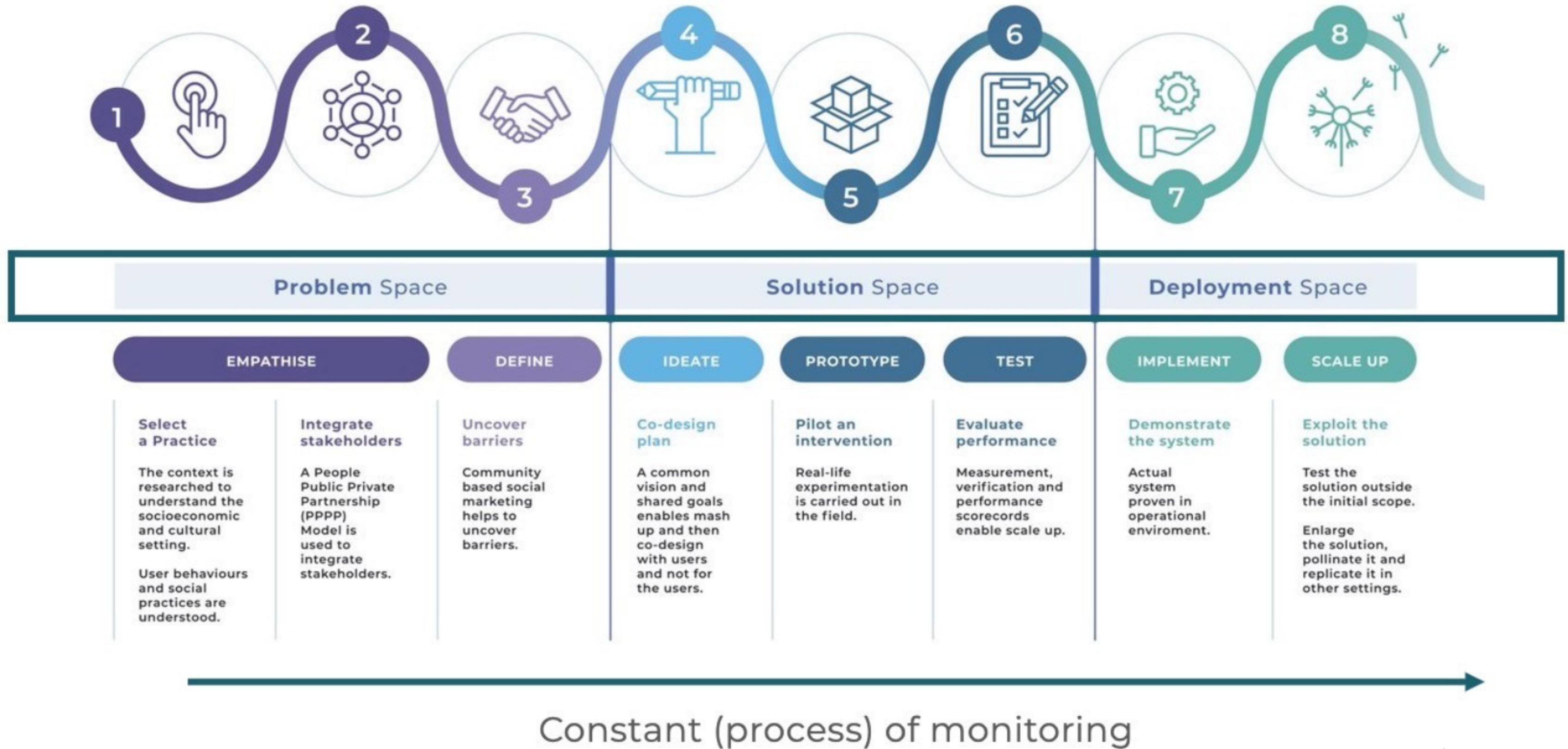
work in progress

EVALUATION OF A LIVING LAB

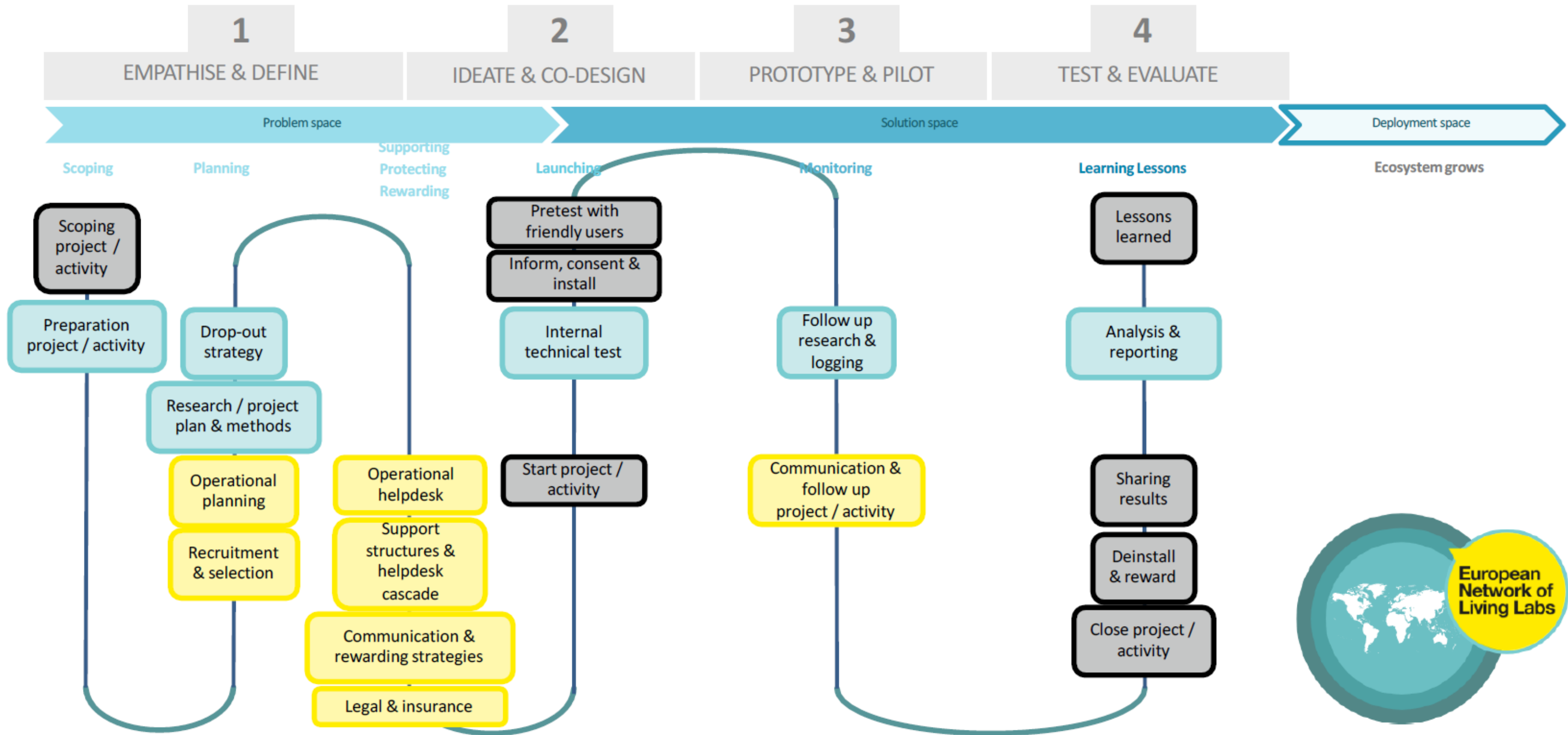
- Living Lab as an Organization
- Living Lab as a methodology
- Living Labs and their Regional Impact



LIVING LAB: MONITORING



LIVING LAB: STAKEHOLDER ROADMAP



FRAMING & EMBEDDING

 **Scientific and practice-based community**


Literature and practice from project management and organizational management

 **Cross boundary interactions**

The built environment and social sciences, circular economy, sustainability and green initiatives, technological innovation, and digitalization.

 **Within the faculty of CEG and department 3MD**

Research themes of researchers and groups that work on the integrative and comprehensive development of infrastructure design and management of projects with industry collaborations.

 **Beyond the faculty communities of practices, associations and organizations**

Neerlands Diep, NETLIPSE, Stichting De Bouwcampus, Project Management Institute, and International Project Management Association.

 **The journals relevant for this research**

The fields of project management, construction and engineering management, knowledge management and organizational learning.

 **Associations and conferences**

European Academy of management (EURAM), European Group for Organisational Studies Colloquium (EGOS), British Academy of Management, Engineering Project Organization Conference (EPOS) and International Megaprojects Workshop: Theory meets Practice (IRNOP).

Nattar Lake,
Pakistan



Thank You

Connect with me at



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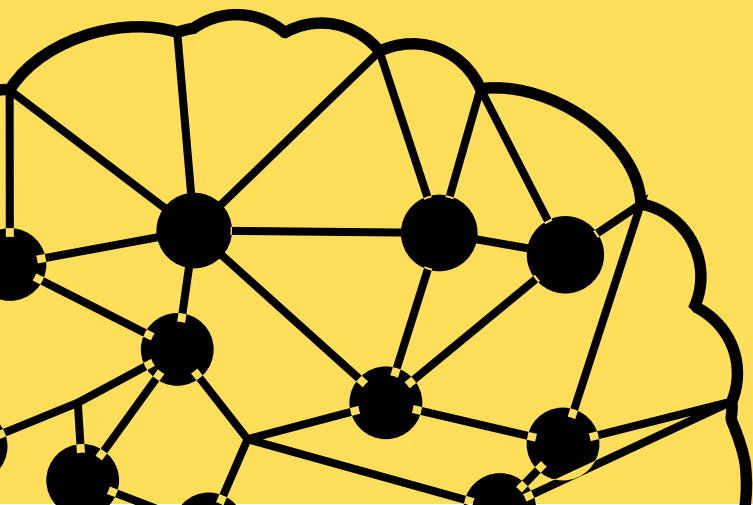


Sana Lateef



ABOUT

My name is Sana Lateef, I am a Project Management professional with a background in Urban management and Architecture. At TU Delft, I am a part of the section Integral Design & Management, with the PhD position of **“Learning in Infrastructure Projects to generate more value for society”**, in the Faculty of Civil Engineering and Geosciences. With **Marcel Hertogh** as my Promotor and **Johan Ninan** as my daily supervisor, we have formulated a team dedicated to diversifying and creating knowledge.



RESEARCH GOAL

“Learning in Infrastructure Projects”

Creating, capturing and disseminating current and past project based learning and embedding them in ongoing and future infrastructure projects is the main goal of this research. Infrastructure assets being structures, facilities, and networks, are a key determinant to creating more value for society. As they provide essential services to the public that have far reaching consequences on numerous interrelated systems of local and global social, environmental, political and economic aspects. They further require diverse knowledge exchanges with multiple stakeholders for their functioning. The research goal will be achieved by; collecting data on management and learning practices, finding how project based learning is captured, how knowledge of this learning can be structured within project management practices of infrastructure projects, in terms of their planning, management, execution and operation and be further disseminated on a project, organizational and sectoral level, thereby improving the performance of the industry.

RESEARCH METHODS

The research focuses on; (i) a literature review on the scope for learning in infrastructure projects, (ii) Case study research, with semi-structured open-ended interviews with practitioners, to understand the techniques and processes that can be learned from projects, how they can be captured, and how they can be embedded as learnings in future projects. (iii) Creating a framework to explain the process of learning in infrastructure projects. (iv) Action research to implement the learning program in an infrastructure project.