

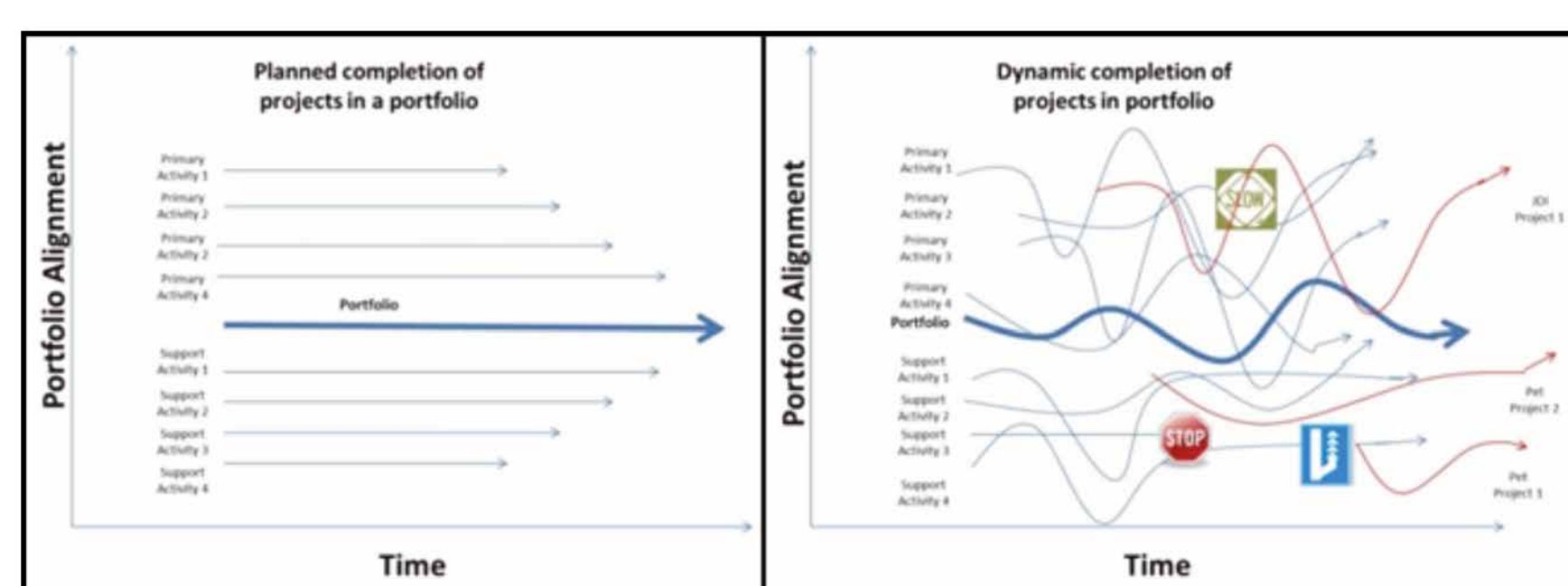
Managing Emergence in Software Engineering Project Portfolio Management



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1 Motivation

- » Organizations failing to achieve benefits of a portfolio approach
- » Challenges of SE PPM exacerbated by contemporary methods
- » Poor state of literature and little effective theory for SE PPM
- » Completely ignores complex and dynamic nature of portfolios and no understanding of implications of complexity
- » CAS is appropriate because of focus on **emergence** arising from non-linear interactions between **agents** and their **environment**

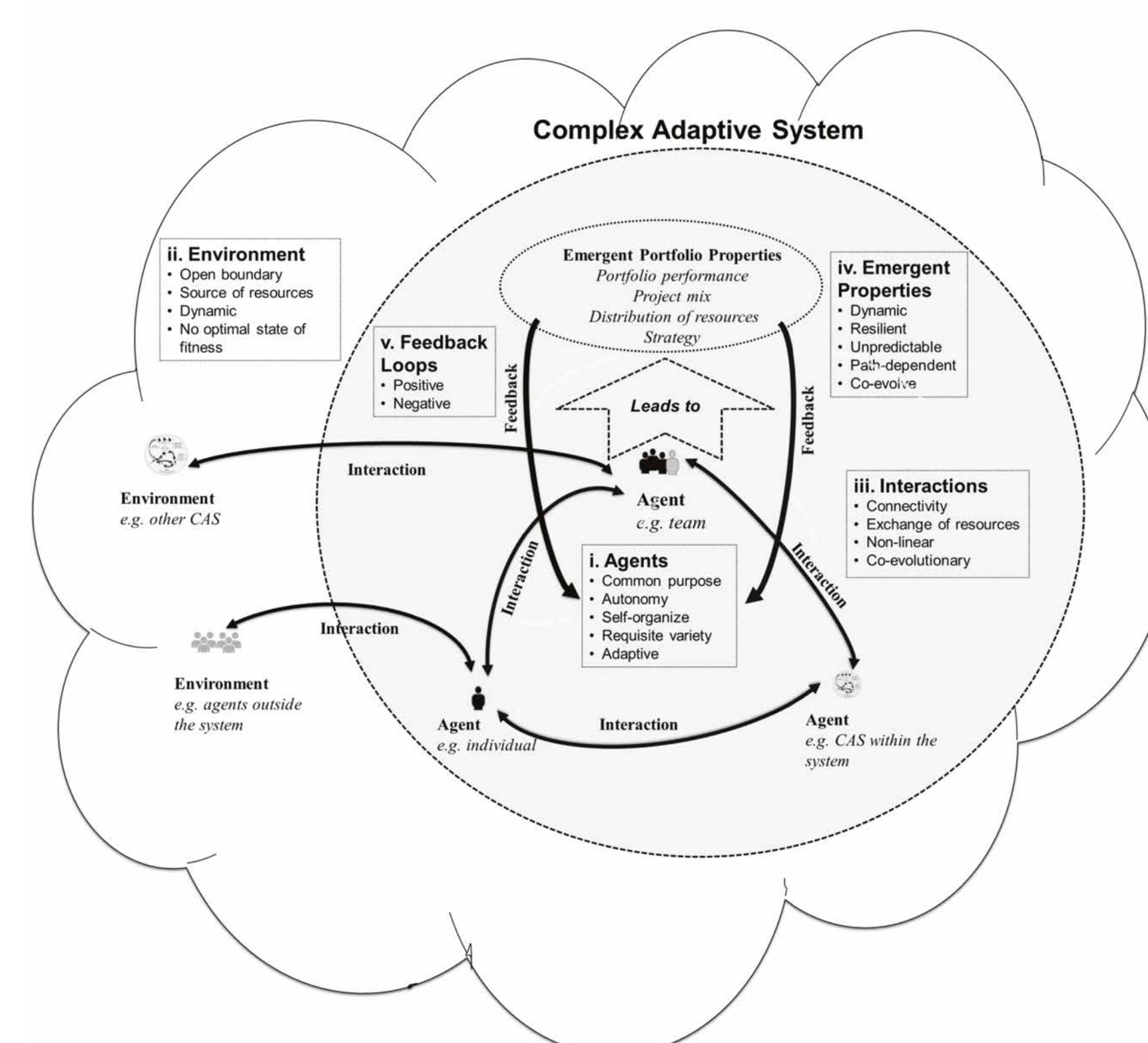


Research Objective

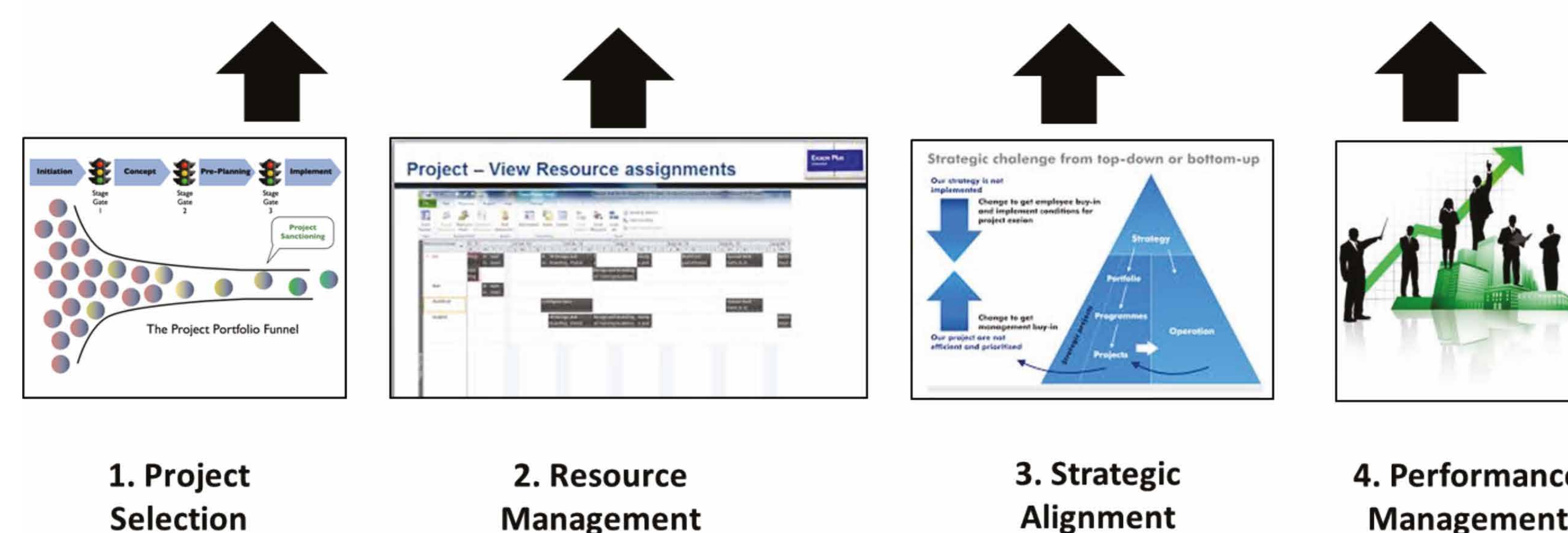
- » To use the concepts of CAS to enable the components of SE PPM
- » To critically appraise the SE PPM body of knowledge through the lens of CAS theory
- » To identify practices that support SE PPM as a CAS, and enable its four components to manage emergence
- » To demonstrate exemplars of such practices for each of these four components of SE PPM

2 Theory

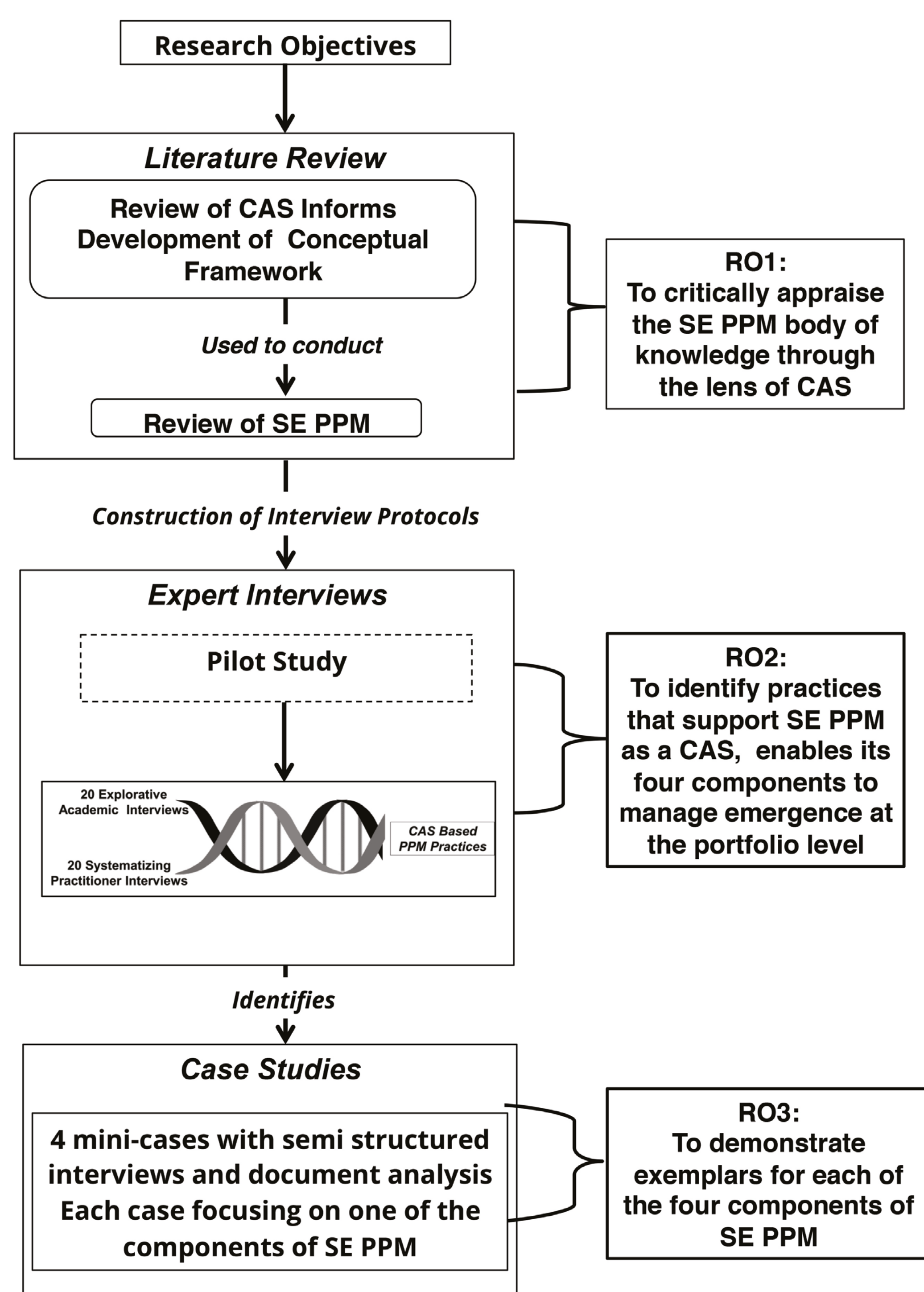
Conceptual Framework for CAS



Components of SE Project Portfolio Management



3 Methodology



4 Preliminary Results

- » The concepts of CAS appear in the SE PPM literature, however, they are generally out of context and there is no systematic approach to complexity
- » Agents have different meaning in SE PPM to CAS
- » Environment extensively studied but focus is piecemeal as opposed to holistic
- » Interactions generally studied as a linear process
- » No research looking at emergence in SE PPM
- » Focus generally on negative not positive feedback

Potential Contribution and Impact

- » This study will contribute to theory by applying the theory of CAS to SE PPM and expanding SE PPM from its traditional simple paradigm to an approach that supports complexity and emergence.
- » It will contribute to practice by enabling a self governing SE portfolio which can co-evolve with its changing environment

Selected Publications

- » Managing Emergence in IS PPM: A CAS Perspective (2015), Quadrangular Meeting, Lancaster UK
- » Exploring Control Tensions in IS Project Portfolio Management (2014), ICIS Auckland, New Zealand,
- » The Emergence of Self-Organization in IS Project Portfolios: A CAS Perspective (2014), OASIS Workshop IFIP 8.2 Auckland, New Zealand