



Titolo Progetto

Opening the black box of proof-of-concept projects: challenges and opportunities

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Gruppo di Ricerca

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Periodo

28/09/2023 – 28/02/2026

Fonte finanziamento

Bando PRIN 2022

Abstract:

In the modern high-paced and uncertain world, it is crucial not only to succeed fast but also to fail rapidly, especially during the early stages of technology innovation (Shankar & Clausen, 2020; Axelson & Bjurstrom, 2019). In this context, proof-of-concept (PoC) — a small, funded project aimed at proving or disproving the feasibility of a new technology or research-based innovation (Kendig, 2016) — has increasingly become critical to respond to market shifts (Bruneel et al., 2010; Battaglia et al., 2021a; 2021b). This rising need to implement PoC projects within organizations has been primarily boosted by the mismatch between new technologies and their successful transformation into commercialized new products or services (Munari & Toschi, 2021). For instance, scholars have observed that promising technologies such as advanced biofuels or solar photovoltaics have been proved to be too immature and too expensive to be commercialized, rendering them unsuitable for the venture capital funding model, resulting in an investment bust in the mid-2010s (Weyant et al., 2018).

This research proposal aims at opening the black box of PoC in organizational contexts, focusing especially on uncertain environments, and investigating the underlying organizational mechanisms that affect PoC outcomes.



Grounded in a longitudinal perspective and strengthened by both qualitative and quantitative methods, this 24-months proposal makes a significant contribution to existing literature. First, the proposal extends technology innovation studies by introducing PoC as a new strategic modality to foster innovation in uncertain environments. Second, we contribute to the PoC literature by proposing a theoretical framework and deepening our knowledge of the key organizational mechanisms activated during the PoC and how they influence the PoC outcomes (e.g., proving or disproving the concept, sharing the value generated among members and partners). Additionally, we disentangle learning dynamics occurring at multiple levels of analysis encompassing individual-, team-, and organizational-based learning processes in PoC projects. Individual attributes, team- and organizational-level factors are investigated together to determine the extent to which mutually reinforcing dynamics are at stake.

Overall, this proposal contributes to developing strategic and organizational know-how for conducting and implementing PoC.