

Multiproject lineage management: Bridging project management and design-based innovation strategy



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Abstract

Innovation-based strategies are widely recognized as key drivers to maintain competitive advantage. The design and strategic literature underline the possibility of triggering a multiproduct value-expansion dynamic based on the creation of new concepts dynamically twinned with corporate strategy. However, the multiproject-management literature—portfolio, program, and platform—lags behind and remains focused on ex ante coordination, resource allocation and selectionism. Thus, there are still few indications of the processes that stimulate and orient continuous, profitable multiproject creative expansion. Bridging the multiproject-management literature and design theory, we propose a model of *multiproject lineage management* (MPLM), which focuses on the key processes that drive exploration efforts and shape innovation trajectory. We conduct a multiple longitudinal case analysis in the automobile sector. Based on this analysis, we expose the principles of MPLM, mapping the roles of corporate, program and project management within a global expansion project. Finally, we highlight our contributions to managerial practices and the related literature.

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1. Introduction

Organizing and managing innovative breakthrough projects from a multiproject, expansive perspective

Academics and managers take an ambiguous approach to disruptive (Bower and Christensen, 1995) and blue-ocean-oriented projects (Kim and Mauborgne, 2004), which create both high risk

and high potential values. On the one hand, history has shown the strategic importance of such breakthroughs. The first iPod, Prius, Air Max and Nespresso were risky projects—although sometimes profitable—that eventually opened new business avenues. The management scope of such innovation trajectories includes several projects. A company builds on its first product to launch others, eventually creating a new successful concept and/or segment and completely transformed the firm's very identity.

Our theoretical lenses only partially help us to understand the management principles of such trajectories from a multiproject and organizational perspective.

The project-management literature strongly highlights the importance of a breakthrough project—termed vanguard, skunkworks, or exploration—to activate a critical multiproject-

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learning cycle (Bommer et al., 2002; Brady and Davies, 2004; Lenfle, 2008). The multiproject-management literature—program, portfolio, platform—emphasizes ex ante project selection and coordination to maximize cost-quality, risk-balancing and lead-time performance and to reduce part diversity (Cooper et al., 1999; Cusumano and Nobeoka, 1998; Maylor et al., 2006). Organization-focused theories have only recently tried to adapt the ambidexterity approach to project-based organizations, inviting a mix of structural and contextual forms of ambidexterity to cause dynamic learning (Eriksson, 2013).

If these schools of thought provide useful canvases to frame the question, they only partially account for critical findings coming from the strategy and design theories (Le Masson et al., 2010; Verganti, 2009), which provide a great deal of evidence about the importance of serendipity and reactivity to make a product's conceptual identity expand along a sequence of coherent projects.

To bridge these two approaches—multiproject management and design strategy—we introduce the concept of *multiproject lineage management* (MPLM) to describe the multiproject sequence beginning with a breakthrough project that introduces a new concept of product, and including subsequent projects that which both build on and transform the initial concept.

Based on this framework, this article provides evidence of the management and organizational principles that can drive a continuous, profitable multiproject creative expansion. The goal is to contribute to filling the gap between the strategic necessity for more continuous exploration of disruptive innovations and project rationalization aimed at controlling the golden triangle of new product development.

The first section reviews different, related bodies of literature, making their limitations with respect to the research question explicit and refining the MPLM framework. The second section describes our methodology, which is based on a multiple case-process analysis. We then present empirical material about four cases of project lineage in the automotive industry (Section 3). The results invite the identification of several key attributes of MPLM (Section 4), which are positioned in contrast to the existing literature, highlighting avenues for both practice and future research (Section 5).

2. Literature review: linking innovation strategy with multiproject management

2.1. Innovation- and design-based strategies

Several bodies of literature underline the critical role of emerging strategies and design-based reasoning in the pursuit of a successful innovation path.

The strategic literature provides a great deal of evidence about the fact that top-down strategies can limit innovation possibilities and sometimes endanger a company's survival (Burgelman and Sayles, 1986). As shown by the seminal example of Intel's shift from the RAM to the CPU industry (Burgelman, 1994), companies must rely on both top-down and bottom-up initiatives to define their market orientations and strategic core competences. The strategizing literature, which is rooted in the emerging-strategy

literature (Mintzberg and Waters, 1985) largely confirms that corporate strategy should update unexpected events such as the success of exotic products or the construction of unplanned competences.

Although that literature remains quite generic and unattached to a particular product or product range, design theory provides fresh arguments to understand how to initiate a product-expansion process.

By focusing on what a product *means* to customers, the design discipline has recently engaged in a valuable bridging effort with innovation management, showing that successful innovation initiatives actually introduce and develop not only new products but also new *meanings*, which give them a competitive advantage over the long run (Verganti, 2008).

The concept-knowledge design theory provides a framework that uses the notion of *concept* to characterize more precisely how creative impulsion and expansion occur (Hatchuel, 2002; Le Masson et al., 2010). A concept formulates properties that are desired but that has no logical status in existing knowledge (one cannot say whether they are true or false). These propositions can be understood and look appealing for value creation, but no one can say precisely whether they are realistic, and they are very open propositions that can point to very different embodiments. For example, a “flying boat” stands as a concept that both can be attractive to customers and can lead to various forms of innovative boats; each embodiment relies on specific types of competences.

From this departure point, the innovative design process progresses through a dual interactive exploration to expansion of existing knowledge (in knowledge space) to concept specification (in concept space). Ultimately, the concept has been specified into precise propositions (innovative products) that can be tested using the knowledge built through the design activity. This definition emphasizes the exploratory dimension of a *concept-driven project* because the concept involves taking into account the learning process that occurs during the design process.

Here, we see how an innovative product can open new business avenues. Unusual products propose unusual meanings to customers, which in return create new knowledge for a company (in terms of customer acceptance, strategic opportunities, and technological options), thus providing options that top management can choose whether or not to activate. The resulting multi-product sequence stands as a creative product expansion.

Now that we have considered a flexible emerging strategy and a multi-product concept expansion, we turn to the subject of how the project-management and organization literature integrate these principles.

2.2. Models of multiproject management

Traditional single-project management organizes resources to maximize the performance of a single product within a given window of cost, quality and lead-time. Consequently, it has widely been criticized at the corporate level because it neglects several critical strategic aspects, particularly by creating new

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