



# How unlearning affects radical innovation: The dynamics of social capital and slack resources



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## ABSTRACT

Radical innovations have enormous impacts on organizations, industries, and societies. The success of a radical innovation requires multiple facilitators within and across organizational boundaries. In this study, we distinguished the effects of two dimensions of organizational unlearning on radical innovation; these dimensions correspond to the different levels of social relations and slack resources possessed by the organizations. We conducted the research in the context of high-technology industries, including semiconductors, telecommunications, optoelectronics, and others. In total, 279 responses were received, representing 193 sample firms. The results showed that the change dimension of unlearning positively affects radical innovation, whereas the forgetting dimension has a negative effect. In addition, slack resources strengthen the positive relationship between the change dimension of unlearning and radical innovation. The findings contribute to a better understanding of the manner in which the integration of the theoretical perspectives of organizational unlearning, organizational resources, and social networks facilitates radical innovation. Theoretical and practical implications are provided.

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## 1. Introduction

Fundamental changes in technology development or market growth make ‘firms’ current competencies become obsolete quickly [1]; how to remain competitive and profitable in such a turbulent environment has therefore become essential for all companies. According to previous studies on this topic, technological product innovations account for one fourth to one third of organizational growth [2,3]. How a firm develops new innovations, particularly radical innovations, draws much attention for both academic and practical purposes. Although innovation in general helps firms to grow and compete, radical innovation in particular provides firms with better positions

and performance outcomes [4]. Radical innovations are defined as fundamental changes in new products that represent revolutionary changes in technology [5–7]. A radical innovation disrupts an existing technological trajectory and advances the price/performance frontier by much more than the existing rate of progress [8,9]. Furthermore, technologies underlying radical innovations are risky departures from the state of current knowledge and embody high degrees of new knowledge. Researchers have noted that radical innovations are important because they create entire new industries, destroy existing industries, and often *disrupt* an existing technological trajectory, which can lead to great social influence [8,10,11].

The term “disrupt” means “unlearn” in the sense that a firm must unlearn its past knowledge or skills and learn new knowledge or skills that did not previously exist within its organizational boundaries. Scholars have proposed that unlearning, a process of ridding an organization of certain things, can facilitate the ability to adapt to a new environment and produce innovations [12,13]. Empirical studies, however, have paid less attention to unlearning compared to learning

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and have thus fallen behind on the topic [12–16]. How organizational unlearning helps firms to develop radical innovations is under-researched and warrants more investigation.

Although there is a lack of consensus on what unlearning is, scholars have proposed several dozen definitions [13]. After studying 34 diverse definitions of unlearning, Tsang & Zahra [13] concluded that “organizational unlearning refers to the discarding of old routines to make way for new ones, if any” (page 1437). Furthermore, scholars have emphasized two important dimensions of unlearning: “discarding something” and “replacing by something new” [13]. Researchers have emphasized different dimensions to fit their research purposes. For example, some scholars have emphasized the discarding dimension by studying the topic of “organizational forgetting” [15,17,18]. In contrast, the serial work of Akgün and colleagues defined unlearning as “changes in routines and beliefs” [12,19,20], which is representative of the replacing dimension.

This definition incorporates ‘change’ in organizational beliefs and routines, which is sometimes confused with organizational change. To ease this concern, Akgün and colleagues [12,21] followed the study of Tsoukas and Chia [22] and note that organizational change is an end state of a transformation process, whereas unlearning in particular focuses on eliminating memories. Essentially, unlearning refers to changes in collective cognition and routines that facilitate the implementation of the organizational change process [21]. Therefore, theorists of organizational change have framed unlearning as a facilitator or catalyst that leads to a dynamic change [23]. This is the point at which unlearning departs from change.

Although comprehensive and inspiring, existing studies have suggested different organizational consequences of organizational unlearning that are either positive [12,19] or negative [18,24]. This study asserts that different dimensions of unlearning lead to dissimilar performance outcomes among different organizational aspects. In fact, “changes in routines and beliefs” more strongly affect internal organizational employees because this dimension involves changes in the procedures, processes, or tools to which they are accustomed [19]. In contrast, the “forgetting” dimension mostly affects external suppliers and customers because these parties will lose the familiarity with or expectations of the firm in question that have accumulated for years [25].

To fully understand how unlearning affects radical innovation, this study begins by incorporating these two dimensions into our framework. Two theoretical lenses are then borrowed. First, the *change* dimension, found in beliefs and routines and mostly observed inside the organization, does not occur in

a vacuum and requires support from other organizational resources [26,27]. The more recent literature has identified slack as a potentially important element of organizational resources [28]. We employ perspectives from the resource-based view and emphasize how organizational slack—recently proposed by scholars as a more valid measure of resources—reinforces the changes in routines and beliefs to enhance radical innovation in firms. Second, the social network perspective provides an interesting explanation about how inter-organizational relationships affect innovation [29]. Addressing this point, the *forgetting* dimension, defined as “the loss, voluntary or otherwise, of organizational knowledge,” will be discussed using the perspective of social capital in general and relational social capital in particular [30].

The remainder of this paper is organized as follows. The following section reviews the literature related to two dimensions of unlearning—changes and forgetting, slack resources and relational social capital, forming the basis of the hypotheses of this study. The following section describes the research methods, conceptual framework, variable definitions and measures, and data collection of this study, followed by a presentation and discussion of the results. The final section discusses the implications of the findings, limitations, and directions of future research.

## 2. Literature review

### 2.1. Theoretical background

Organizational unlearning has been defined predominantly as changes in routines and beliefs. Such a framing is inspiring, but something important has been missing here. If we more closely examine these definitions, they implicitly have an internal orientation regarding the elimination of memories. For example, organizational routines include knowledge, models, values, and norms; routines include standard operating procedures, managerial and technical systems, capabilities, and information-sharing mechanisms [31]. The changes in these components are emphasized by their internal influences. The effects these changes have on outside stakeholders are largely ignored. In the table below, we summarize and compare previous studies with ours.

In Table 1, we demonstrate that unlearning defined as changes in beliefs and routines inclines to an internal organizational focus which left the external influence unexamined. Moreover, previous studies implicitly assume that organizations can unilaterally eliminate memories that have involved outside stakeholders without being resisted by those external

**Table 1**  
Research gap regarding the elimination of memory in unlearning process.

Related studies	Existing theory (Inside perspective)	Validity challenges of the existing conceptualization	This current study (Outside-in perspective)
Assumptions			
Organizational focus	Intra-organizational	What if the memory affects other parties outside organizations?	Intra- and inter-organizational
Sources of resistance	Unilateral elimination (inside resistance)	What if social ties and institutional pressure inhibit such memory elimination?	Social ties and institutional pressure (outside resistance)
Environment setting	Freestanding organization	What if organizations are embedded in a network?	Cooperative stakeholders (including producers, users, suppliers, and institutional actors)

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