

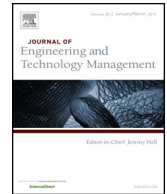


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## Going the extra mile: Managing individual motivation in radical innovation development

Matti Pihlajamaa

Aalto University School of Science, Department of Industrial Engineering and Management, P.O. Box 15500, FI-00076 Aalto, Finland

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### ABSTRACT

Developing radical innovations is highly demanding because of high uncertainties which give rise to unanticipated problems and discoveries. Managing individual motivation is therefore an important component of the radical innovation capability. This study presents a theoretical model of managing individual motivation in radical innovation development. The model is tested and elaborated by investigating four incumbent companies. The findings indicate that managers may influence the initial level of individual motivation and its effect on the success in development tasks by assigning external goals and providing organizational support. These methods can be found at multiple levels: individuals, project teams, and the organization.

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## 1. Introduction

Many companies seek radical innovations to find new sources of growth. Especially in highly dynamic environments, sustainable competitive advantage is often dependent on the capability to develop highly novel products and services (O'Connor, 2008; Teece et al., 1997). Radical innovation development typically requires working with new markets and technologies, which brings about high levels of uncertainty and risk (O'Connor and Rice, 2013). Incumbent companies tend to excel at managing for efficiency and risk avoidance but at the same time perform poorly in contexts of high uncertainty. To create the capability to develop radical innovations, companies need to undergo changes at the levels of strategy, structures, processes, culture, and leadership (Slater et al., 2014).

The development of incremental innovations can be fairly well governed with explicitly defined procedures in a top-down fashion but in radical innovation development these are of little use (Alexander and van Knippenberg, 2014; McCarthy et al., 2006). Instead, radical innovation is highly reliant on the initiative of individuals (Benner and Tushman, 2003; Day, 1994; Leifer et al., 2000) and successful breakthroughs can often be traced back to the workings of highly-driven developers with exceptional commitment (Chakrabarti, 1974; Ettl et al., 1984; Reid and de Brentani, 2004).

Radical innovation processes include many unanticipated challenges, which makes them very demanding for the employees. Developers need to deal with unexpected obstacles, absorb diverse knowledge from many sources, and propose creative solutions (Day, 1994). Maintaining employees' motivation towards radical innovation has therefore been identified a significant challenge in large, established companies (Kelley et al., 2011; O'Connor and McDermott, 2004; Stringer, 2000). There is, however, a lack of research which addresses the motivational issues in radical innovation development

E-mail address: [matti.pihlajamaa@aalto.fi](mailto:matti.pihlajamaa@aalto.fi).

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(Alexander and van Knippenberg, 2014; Poskela and Martinsuo, 2009). This study sets out to investigate how managers may motivate individuals towards radical innovation work.

Drawing on the literature on work motivation and radical innovation, a theoretical model of individual motivation in radical innovation development is developed. In the empirical part of the study, the model is tested by investigating four large firms that are developing radical innovations. Furthermore, the study reports on how the case companies have approached motivational issues in practice. Finally, the significance of the findings, the limitations, and the implications for further research are discussed.

## 2. Theoretical background

### 2.1. Radical innovation capability

Successful large firms have typically developed a few strong organizational capabilities with which they can sustain a leadership position over time (Dosi et al., 2000; Prahalad and Hamel, 1990). The capabilities rarely stay completely static. Instead, they are improved along predictable development paths by the means of incremental innovation. To support incremental innovation, firms may build codified processes and complex sets of routines to create organizational memory and improve predictability and diagnosis in case of errors (O'Connor, 2008).

Radical innovations are here defined as products, services, or processes which encompass novel technologies or require new market structures and which have the potential to create paradigm shifts at world, market or industry level. They therefore cover the categories of radical innovation and really new innovation as proposed by Garcia and Calantone (2002). In contrast to incremental innovations, radical innovations typically encompass novel features with substantial business potential or significant performance effects compared to existing products, services, and processes (Leifer et al., 2000). They have been found to entail great financial rewards (Kyriakopoulos et al., 2016; Rubera and Kirca, 2012), and provide competitive advantages for the developing firm (Christensen, 1997; Hill and Rothaermel, 2003) and significant benefits for its customers (Sorescu et al., 2003). They are also often disruptive in that they undermine existing products and competences and disturb consumer habits (Christensen, 1997; Markides, 2006). Radical innovations have, however, been proved difficult to develop. Incumbent firms often find themselves unable to introduce anything other than incremental improvements to their existing offering (Henderson, 1993; Stringer, 2000). As a result, a large part of radical innovations originate in a small set of firms (Sorescu et al., 2003).

The inability to develop radical innovations has been explained in several ways. Radical innovations often include new technologies and aim for new markets, which makes their development process highly uncertain (Garcia and Calantone, 2002; O'Connor and Rice, 2013). They may also require new business models, as existing value chains may not be applicable (Eisenhardt and Martin, 2000; O'Connor, 2008). Hence, developing radical innovations requires different routines and structures to incremental innovation (Barczak et al., 2009; Leifer et al., 2000; Phene et al., 2006). The organizational routines of many firms do not support the exploration of new opportunities, which restricts them to predetermined development paths (Bessant et al., 2010; Koberg et al., 2003; Lynn et al., 1996). They may also lack suitably skilled employees (Stringer, 2000) or have an exploitation-oriented organizational culture (McLaughlin et al., 2008). Also, radical innovations are dependent on the availability of new knowledge (Maillat, 1991) and established routines may be organized around a limited set of external partners which may limit companies in their use of external knowledge sources in developing innovations (Birkinshaw et al., 2007).

Extant studies have investigated the antecedents of radical innovation capability. A structural separation of radical and incremental innovation activities has been proposed to reduce tensions between their often conflicting aims, leading to better performance in both respects (Chandy and Tellis, 2000; Herrmann et al., 2007; O'Connor, 2008; O'Connor and DeMartino, 2006; O'Reilly and Tushman, 2008; Slater et al., 2014). Forming new networks and utilizing weak links to gain access to multiple knowledge bases has been suggested in order to increase radical innovation success (Bessant, 2008; Birkinshaw et al., 2007; Phillips et al., 2006; Schoenmakers and Duysters, 2010). Also, routines for rapid experimentation with new opportunities (Koberg et al., 2003; Lynn et al., 1996) and working with users (Abrell et al., 2016) and customers (Gassmann et al., 2006) have been proposed to improve radical innovation outcomes.

### 2.2. Individuals in radical innovation development

Whereas incremental innovations typically originate top-down from strategy planning processes (Koen et al., 2005; Reid and de Brentani, 2004) or from interactions between a company and its customers (Leifer et al., 2000), radical ideas come from the opposite direction; ideas are typically generated by individuals, developed by teams, and do not reach the organizational level until the decision of whether to start a development project is to be made (Reid and de Brentani, 2004). Skilled employees are needed to locate and interpret knowledge from multiple sources, make decisions with limited understanding of both the problem and its solution, as well as proactively propose creative ideas (Day, 1994). Working in such an environment demands a lot of the developers. They need to endure ambiguity, have a high tolerance for failure, work with open-ended operating routines, and know their way across functions and knowledge bases (Bessant et al., 2005).

Due to the limited effectiveness of rigid process management methods (Benner and Tushman, 2003; O'Connor, 2008), many authors argue that the employees should be trusted and given the freedom to experiment and discover breakthroughs

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