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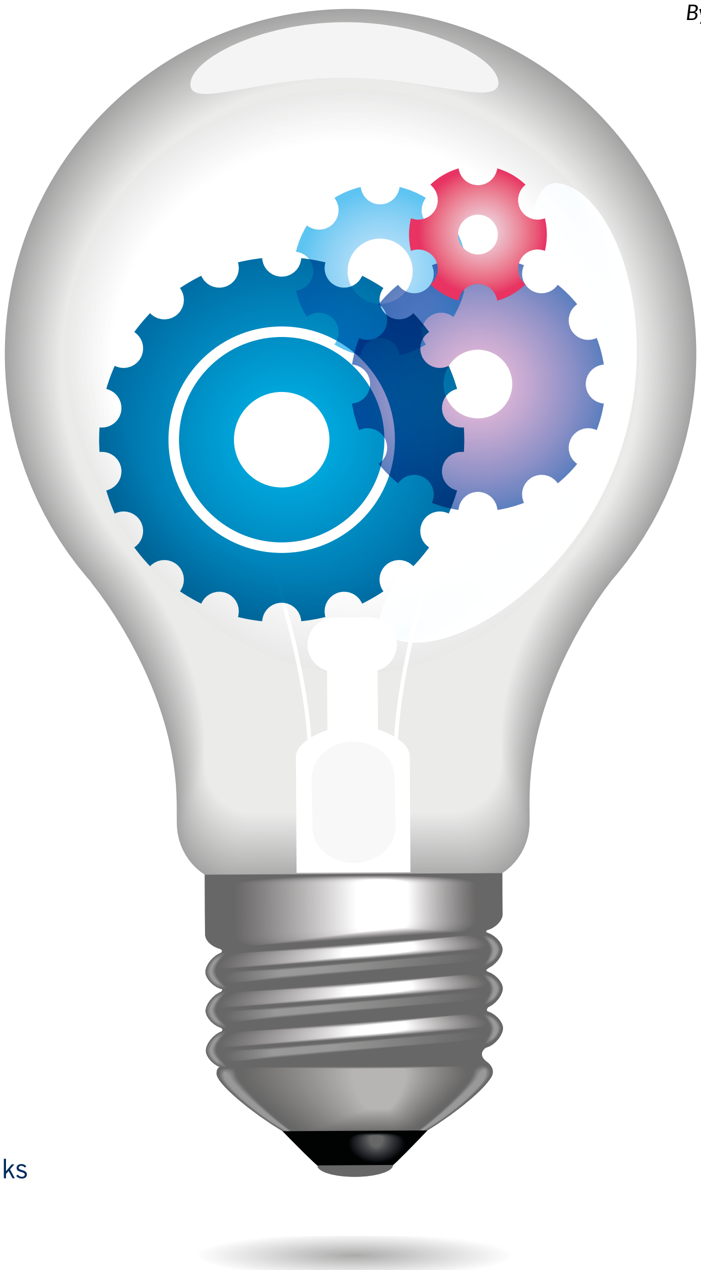

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The relevance of innovating beyond technology

By ***Kevin Heij***

Technological innovation may receive greater attention, but innovation covers more than technology. Whether the innovation has to do with management (think of the introduction of self-managed teams), co-creation with customers (for instance at Lego or in health care), or business model innovation (such as at DSM and Google), various types of non-technological innovation are also important opportunities for competitive advantage.

Although scholars are increasingly recognising the importance of various non-technological types of innovation, multiple questions about how they contribute to company performance are still largely unanswered. To begin to fill this gap, I started a series of studies five years ago, when I began my job as manager of INSCOPE – Research for Innovation, a joint research consortium on social innovation from the Erasmus University Rotterdam, Maastricht University, TNO, Utrecht University, and University of Twente.

Four of these studies, which I covered in my doctoral thesis *Innovating beyond Technology: Studies on how management innovation, co-creation, and business model innovation contribute to firms' (innovation) performance*, are based on survey data collected by the Erasmus Competition and Innovation Monitor. This monitor, co-founded in 2006 by two of my thesis supervisors, RSM's Prof. Henk Volberda, and Prof. Frans Van Den Bosch, is an annual survey of 10,000 Dutch enterprises from a broad range of industries.

These projects convinced me even more that executives who think innovation should be left solely to the guys in the white lab coats are doing themselves a disservice. In fact, not only can non-technological innovations enhance firm performance, but they can also enhance the results of technical innovation.

Management innovation

Management innovations are changes in how managers perform their job that are intended to improve their firm's performance. Indeed, such changes can have a profound impact on company performance. Various studies have found that management innovation is a source of competitive advantage that is at least as important as technological innovation. For instance, data from the Erasmus Competition and Innovation Monitor suggests that management innovation explains anywhere from 59 per cent and 79 per cent of a firm's innovation success, much more than R&D (as an indicator of technological innovation), which comprises 21 to 41 per cent.

Management innovation is an emerging but still under-researched domain, particularly in its relationship with technological innovation. Scholars have various ideas about the relationship between both; technological innovation can enable management innovation; management innovation can enable technological innovation, and both types of innovation can have a combined, complementary effect on firm performance.

In one of the studies included in my dissertation, we show that management innovation enables a firm to realise more radical product and service innovations from its R&D investments. Higher levels of R&D investments face increasing marginal

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returns on radical product and service innovations (exploratory innovations) and complementary investments in management innovation offset these marginal returns.

The transformation of higher levels of new technological knowledge resulting from these R&D investments into radical product and service innovations requires adjustment of and alignment with many complementary areas of knowledge and capabilities, such as production and marketing. Management innovation supports that transformation by smoothing over pre-existing managerial and organisational barriers in a way that makes it easier to integrate and utilise the new technological knowledge more efficiently.

In addition, new management practices (management innovation) can raise the number of incremental new product and service innovations (exploitative innovations), an increase that grows as investment increases. Novel management practices may contribute in their own way to greater utilisation of a firm's existing knowledge base, for instance by streamlining the transfer of existing knowledge among various firm activities or by enabling new combinations of its existing knowledge base.

However, the larger the firm, the more the effect of management innovation on exploitative innovation moves from positive and linear to J-shaped. These findings suggest that larger firms need to overcome more fragmented initiatives compared to smaller firms when introducing new management practices.

Co-creation with customers

The increased pace of change and intensified competition has led many organisations to co-create with external partners to develop more product and service innovations. Co-creation with customers enables a firm to tap into the knowledge base of its customers, or to create new knowledge, and to strengthen its relationship with those customers. It is different from simply asking customers for their feedback, which has been shown to be a good way to drive incremental improvements but to hamper radical breakthroughs. Co-creation with customers, by contrast, can be an important source of competitive advantage.

Survey data relating to 356 Dutch health-care providers indicates that co-creation with customers ("relationship learning") has an increasing marginal effect on exploitative innovation. Beyond a certain point, the two parties' knowledge and experience have a larger degree of overlap that limits opportunities to gain valuable additional insights from each other. Firms can offset this increasing marginal effect by having a high degree of direct personal connections among members within the organisation (organisational connectedness).

This informal co-ordination mechanism within an organisation increases access of organisational members to additional knowledge on customer needs in order to further refine products and services (exploitative innovations). More internal alignment due to organisational connectedness also enables organisational members within a firm to obtain a larger amount of specific knowledge out of co-creation ▸

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with customers and to reduce internal barriers in the realisation of exploitative innovations out of it. In addition, our findings suggest that more co-creation with customers is beneficial when it comes to exploratory (radical) innovation.

Business model innovation

In today's rapidly changing business environments, business model innovation is an increasingly important source of competitive advantage. Although scholars debate its finer points, business model innovation is generally defined as the introduction of a new or improved logic for how a firm creates and captures value. A company that innovates its business model can do so in two ways: replication or renewal.

"Technological innovation is not the only way for a company to think its way to a better future."

Business model replication involves the re-creation of a successful model in which a firm leverages business model components and their interdependencies by developing and/or extending them within the framework of an existing model. This can be done over time, and in rather similar, but geographically different markets. Companies like IKEA and McDonald's are known for this type of business model innovation.

Business model renewal involves the introduction of a mostly new business model and new complementary effects that go beyond a firm's existing framework for creating and capturing value. A renewal model enables a firm to enter fundamentally new markets or to make an aggressive move in existing markets. It is a riskier process than replication and generally involves overcoming more challenges and barriers. However, not renewing the business model can put firm survival at even greater risk in the long run, as once-strong companies such as Kodak and Blockbuster can attest.

Both types of business model innovation contribute to firm performance, but my research found that the difference each kind can make depends to some degree on the level of dynamism of a firm's business environment. Replication allows an organisation to become better at doing things that are similar to what it is already doing, but a major change in the firm's external environment can reduce the value of doing something better than it did before. At that point, the model may begin to become outdated.

Business model renewal, by contrast, tends to contribute more to firm performance in environments characterised by intermediate and high levels of dynamism. In cases of business model renewal, firms face conflicting forces to adequately deal with the level of environmental dynamism. On the one hand, in more dynamic environments, a company may need to renew its business model more intensely to improve the firm's fit with the changing environment. On the other, conducting business model renewal in more dynamic environments reduces opportunities to increase a firm's profitability, because it becomes more quickly obsolete.

Competitive advantage

Although the dynamics of some of these non-technological types of innovation are somewhat subtle, they shouldn't obscure the more essential point: innovation comprises more than just investing in R&D. In an era of relentless transformation, executives can no longer afford to leave innovation solely to the engineers. Technological innovation is not the only way for a company to think its way to a better future. Investments in management innovation, co-creation with customers, and business model innovation are not only valid but often also complementary ways to turn knowledge into a competitive advantage. ■

Kevin Heij's *doctoral thesis,* Innovating beyond Technology: Studies on how management innovation, co-creation, and business model innovation contribute to firms' (innovation) performance *can be freely downloaded at* WEB *http://repub.eur.nl/pub/78651/*

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