Enhancing Innovation Performance in Companies

Jonathan Calof

Full Professor [a]; Extraordinary Professor [b]; Leading Research Fellow [c], calof@telfer.uottawa.ca

[a] Telfer School of Management, University of Ottawa, 55 Laurier Ave E, Ottawa, ON K1N 6N5, Canada
[b] North West University, Potchefstroom, South Africa
[c] Research Laboratory for Science and Technology Studies of the Institute for Statistical Studies and Economics of Knowledge (ISSEK) of the National Research University Higher School of Economics (NRU HSE), 11 Myasnitskaya str., Moscow 101000, Russian Federation

Abstract

This introductory article to the special section «Innovation at Companies» focuses on how to enhance innovation performance at companies. It looks at the factors that define innovative activities at companies as well as the various kinds of corporate innovations. The author stresses importance of special training programs for managers, and suggests the need to take the specifics of local economic, cultural, and other factors into account when implementing relevant educational and policy initiatives aimed at fostering innovation.

Keywords:
inovation performance;
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Innovation, in particular open innovation, are becoming increasingly recognized by companies and governments alike as being important for both national and corporate growth and performance. This is so critical that countries around the world have launched programs and policies designed to enhance their countries' innovation performance and companies have focused efforts in this area as well. The latest such initiative being the appointment of senior-level open innovation executives in the "C" suite by leading companies around the world. For governments, it is generally about developing policy and programs that will improve their countries' rankings in innovation publications such as the Global Innovation Index. For companies, it is about increasing revenues, reducing costs, and enhancing competitive advantages.

How one helps grow innovation has been a subject of intense interest not only for government and industry but for academia as well. A recent search on ABI ProQuest for peer reviewed articles with innovation in their title resulted in 24,532 articles, including 13,933 published since 2010, with many studies looking at activities related to innovation. The literature is so deep that many meta-analysis and literature review articles have emerged that are not just about the generic innovation field but subdomains within innovation, for example:

- a meta-analysis of success factors for service innovation [*Storey et al.,* 2015];
- a bibliometric review of the open innovation literature [*Randhawa et al.,* 2016];

- a review of the literature on accelerating the speed of innovation [*Ellwood et al.,* 2016];
- a review of the literature on culture's impact on innovation [*Tian et al.,* 2018].

These articles have provided readers with a multitude of both hard and soft factors that can result in corporate innovation. Hard factors such as the appropriate competitive environment, government assistance and policies, financial resources, and firm size have been linked to innovation. Soft factors such as organizational culture, in particular openness, have also been linked to innovation. There have also been a host of studies that have identified organizational structural elements, as well as appropriate knowledge and human capital.

Clearly, based on the depth of research in innovation and its recognized importance to corporate performance, it is critical to ensure that today's managers are equipped with the knowledge necessary to create and carry out appropriate innovation strategies. Recent research looking at the influence of firms' management on innovation in emerging economies [*Crowley, Bourke,* 2018; *Terzic,* 2017] makes the need for this kind of management development program even more important in such economies. For example, a review of research on innovation in Russia by Filippov noted:

"The main conclusion of these studies on Russia's innovative performance is that while the country possesses a strong science base, a well-developed education system and devotes substantial resources to R&D; its actual innovation activity remains disappointing… The main problem, as stated, is that the S&T system does not produce nearly as much innovation as expected, and even more so, the private sector" [*Filippov,* 2011, p. 187].

Given these problems, the Russian government has developed extensive policy and programs around innovation. Gokhberg and Roud [*Gokhberg, Roud,* 2015] examined various government initiatives in this area with mixed results.

Further, from a country perspective, given the mass of literature linking innovation to regional and national economic performance, this kind of knowledge development and training for government officials who develop innovation programs is also important. This suggests that those designing policies and programs meant to improve their regions' or countries' innovation should do so based on research that clearly identifies the factors linked with innovation.

It is not only this explosive recent growth in research and knowledge about innovation best practices that fuels the need for management and government officer innovation development programs, it is also the expansion of our understanding about where innovation can be applied, call this "corporate innovation breadth". Innovation used to be talked about from the perspective of product/service innovation, the development of new products and services that would provide an organization with an economic advantage. The OECD in defining innovation [OECD, 2018] broadens this traditional view describing four types of innovation: product innovation, process innovation, marketing innovation, and organizational innovation.

- *Product innovation*: A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness, or other functional characteristics.
- *Process innovation*: A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment, and/or software.
- *Marketing innovation*: A new marketing method involving significant changes in product design or packaging, product placement, product promotion, or pricing.
- *Organizational innovation*: A new organizational method in business practices, workplace organization, or external relations."

Keeley et al. [*Keeley et al.,* 2013] in their best-selling book on innovation identified ten types of innovation that they broke into three categories:

- *Configuration*: Profit model (the way in which you make money); Network (connections with others to create value), Structure (Alignment of your talent assets); Process (unique best practices for doing your work)
- *Offering*: Product performance (distinguishing features and functionality); Product system (complementary products and services)
- *Experience*: Service (support and enhancements that surround your offerings); Channel (how your offerings are delivered to customers and users); Brand (representation of your offerings and business); Customer engagement (distinctive interactions you foster)

The book offers the 10 types of innovation mentioned above and then over 100 tactics surrounding each of these innovations. For example, under process innovation (under configuration), the authors offer

the following tactics: crowdsourcing, flexible manufacturing, intellectual property, lean production, localization, logistics systems, on-demand production, predictive analytics, process automation, process efficiency, process standardization, strategic design, and user-generated design.

In short, the growth in our knowledge of what leads to innovation and the understanding of where innovation can be applied has led to the need for and the development of programs to bring these best practices to today's managers. Top universities have developed these kinds of programs. Stanford, for example, has developed an innovation and entrepreneurship certificate program to help participants develop innovative organizations. MIT created a professional certificate program in innovation and technology. Harvard Business School has developed several innovation leadership and management programs including: Leading and Building a Culture of Innovation and Leading Product Innovation and Disruptive Innovation.

This special issue of *Foresight and STI Governance* adds to this growing body of innovation knowledge and innovation best practices by looking specifically at innovation within Russia and China. The articles look at drivers of corporate innovation as well as various roles that government policy can play in enhancing Innovation.

Roelfsema and Zhang look at the choice of product innovation (R&D and product development) and internationalization (market innovation) at 13,874 Chinese firms. In examining various factors, the authors point to the need for a differentiated government policy that recognizes the need for different incentives to encourage innovation depending on a firm's productivity. In this case, the authors note a complex relationship that needs to be understood to create a capability-based series of government support programs.

The paper by Zavyalova et al. looks at the innovation ecosystem in China and examines the various tools, programs, and mechanisms that are designed to enhance innovation activity in companies. The study uses broad innovation measurements that capture several elements of the OECD innovation definition and several innovation dimensions from Keeley et al. According to the results of detailed interviews with 60 companies, the role of training and personnel development as a means to enhance innovative activities is confirmed with those lagging behind in innovation exhibiting low staff training and development.

The Nissen et al paper looks at the role of IT management in another kind of innovation activity – digital transformation. In adopting a case-based approach (interviews at five Russian companies), the paper develops deep insight into the role that IT can play in enhancing innovation at Russian companies. In terms of improving innovation, the authors identified two companies in their study for which IT played a role in business innovation, another company at which IT was an enabler, and two at which it provided more of a support function. The lack of qualified personnel (human capital) was seen as a key challenge once again suggesting the need for appropriate training. The study also points to the need for senior management of a firm to be trained to understand how innovations can be developed. Call this innovation literacy training, the need for senior management to understand different approaches for innovation management including, in this case, IT management.

The hypothesis in the Davidson et al. paper is that companies' willingness to innovate is largely determined by the external environment, although internal factors were also considered. The study looks at one kind of innovation, new products or services, and notes that this kind of innovation is linked to both firm and regional factors such as state support, institutional environment, state support, corruption, and human capital (trained staff) as well as firm size. Based on the factors linked with corporate innovation, the authors recommend regional innovation policy that takes into account the identified factors. The need for appropriate human capital supports some of the training initiatives mentioned in this paper while the identification of factors linked with corporate innovation in Russia supports the need for government policy-makers to similarly understand critical success factors of corporate innovation in order to design appropriate programs. It also points to a number of unique Russian environmental factors that would need to be reflected in innovation-related government policy.

Taken together, the four studies in this special issue suggest that governments considering innovation programs need to understand the factors that lead to corporate innovation if they are to effectively design programs that will enhance innovation. Three of the papers point to the need for developing appropriate corporate knowledge and human capital for innovation. They point also to the need for management training programs. There is even within the two Russian studies an indication that training programs and policy will have to include factors that are unique to the local environment.

This paper concludes with a lesson from Canada in innovation policy and programs. In 1970, the Canadian Senate Special Committee on Science Policy in support of Canada's economic performance concluded

with the following statement "Since 1916…the main objective of Canada's science policy has been to promote technological innovation by industry... Almost every decade since the 1920's has witnessed renewed attempts by successive governments to achieve it but on the whole they have all failed" (cited from [CCA, 2013]). In examining Canada's innovation efforts since then, Peter Nicholson, President of the Council of Canadian Economies wrote "In the more than four decades since this report, nothing has changed to alter the essential truth of its conclusions" [*Nicholson,* 2016, p. S39]. In a presentation about the lack of innovation improvement in Canada given to Canadian technology executives, Calof and Sedivy noted that Canadian innovation policy did not always reflect current best innovation practices nor respond to Canadian cultural factors [*Calof, Sedivy,* 2017]. Based on this experience, perhaps in recommending both training for managers and government policy-makers which will result in innovation policy that reflects research identified by best practices, this should be supplemented based upon research that identifies any local economic, cultural, or other factors that need to be integrated into training and policy.

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