Industrial and Organizational Psychology, **2** (2009), 357–359.
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What Practice Needs From Science Regarding Innovation Management

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From a practitioner's perspective, this article is stimulating and much needed if the science and practice of innovation is to become both grounded and effective. Although more empirical evidence is required, the propositions proffered seem reasonable and will benefit from future refinement. As the authors stated, rigor is a primary demand for science, whereas relevance is a primary demand for the practice of innovation management (p. 330; Bledow, Frese, Anderson, Erez, & Farr, 2009). We offer one more demand that practice can ask of science, which is specificity. This is not wholly missed in their argument; Bledow et al. state that ''the pathways and processes leading to innovation are manifold and different contexts call for different solutions'' (p. 49). However, where science can help practice is by exploring the different contexts in which innovation is to thrive, thus guiding practitioners to the best methods for innovation management. We offer a few areas where practical advice is needed.

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The Dynamics of Incremental Versus Radical Innovation

Beginning with the types of innovation outlined (p. 308), one would presume that the requisites for successful *incremental* and *radical* innovation might be somewhat, or perhaps even vastly, different. Knowledge flow, as an example, is a more explicit explorative activity, and the direction of knowledge flow might be more important for the type of innovation in which the organization wishes to engage (p. 329, see also Deschamps, 2008). Incremental innovation might be best stimulated through top-down knowledge flow where a clear problem is presented to a team with directives to find a solution. Horizontal or bottom-up knowledge flow might be more advantageous for instances of radical or disruptive innovation.

Although we agree that a dialectic perspective on innovation management is perhaps more beneficial than a dichotomous perspective, would that always be the case when radical innovation is being pursued? Radical innovation does introduce more challenges in managing the tensions between the organization's current business practice and the new directions offered by the innovation (Christensen, 1997), but this raises the question as to whether radical innovation might be better achieved when a separation exists between the new product development department and that

https://doi.org/10.1111/j.1754-9434.2009.01159.x Published online by Cambridge University Press

of the rest of the organization. Separation would allow for the free exchange of ideas and provide opportunity for ideas to grow and develop without being stymied by the internal processes of the organization. In a recent video made by an astronaut of the National Aeronautics and Space Administration (NASA, 2009), the bureaucracy of NASA was famously exposed demonstrating the many barriers that can arise when innovation moves people out of their comfort zones. Although satirical, at the end of the video the NASA employee is later hired at Google, shares her ideas with her new manager, and they conclude that they could even sell her idea to . . . NASA! NASA's candidness and willingness to expose their bureaucratic challenges is commendable but hardly unique to the government sector. Determining whether the pathways to radical versus incremental innovation differ, if they do, will be beneficial to all organizations and help managers avoid the pitfalls that may hinder innovation efforts.

Helping Organizations Become Innovative

An additional, and perhaps more pragmatic, request that practitioners receive from client organizations is how to change the existing organization to become more innovative. In light of current economic conditions, the need to stay ahead of the competition and maintain market share is ever more concerning. Getting the ''right people on the bus'' is always important, but the best advice that industrial–organizational psychology can offer to an organization cannot be limited to changing selection procedures to ensure that all leaders are transformational or all hires in new product development are ''open'' and ''conscientious.'' Identifying which organizational practices, values, beliefs, or assumptions stand in the way of innovation and which practices enhance innovation is valuable information that organizations need to know. By knowing the boundary conditions of innovation, organizations stand a better chance to be successful at both the explorative and exploitative functions of innovation.

Directions of Knowledge Flow

The authors write about the benefits of top-down and bottom-up knowledge flow, but additional directions of knowledge flow that occur from outside to inside of the organization can also prove useful for innovation. Market-in knowledge flow, which occurs between organizational members and their clients, customers, or stakeholders, or organization-out knowledge flow, knowledge shared between the organization and its competitors or a larger professional community, can be valuable instigators for innovation (e.g., Cordon & Vollmann, 2008). Our own initial research has indicated that organizations that encourage employee interaction with clients or have a strong customer focus tend to be more innovative—as measured by growth assumptions built into an organization's stock price (Kotrba & Denison, 2007). In some contexts, considering a client's perspective in the innovation process can be extremely valuable and can save much time and resources by preventing the organization from pursuing a product or service offering that would not be well received in the market. This is the question to be answered: Do organizations with established market-in, organization-out knowledge flow processes generate more innovative ideas?

Innovation Criterion Space

This brings us to our last point, which is how to quantitatively or systematically judge whether an organization is innovative. This question is not new and is something researchers and practitioners have struggled with for some time (e.g., Moore, 1991; Rogers, 1962), but it still poses a significant challenge to the study of innovation and is one that is not clearly addressed within the paper. Is innovation the novelty or uniqueness of the end product? The timeliness in which a product is brought to market? Or the realized return on investment of time,

https://doi.org/10.1111/j.1754-9434.2009.01159.x Published online by Cambridge University Press

money, and resources dedicated to new product development? From our own experience, it has been challenging to study innovation because there is little standardization across organizations in which to make comparisons; what may be viewed as innovation in one company might be a standard practice or already established product offering in another. In order for the science of innovation to be of benefit to the larger business community, more precision is needed in this area beyond stating that innovation includes ''creative ideas and their implementation'' (p. 305). If a tree falls in the forest and no one is there to hear it, does it still make a sound? Likewise, if an organization successfully develops a new product *and* brings it to market but no one buys it is that still considered innovation?

Conclusion

We conclude our commentary with enthusiasm for the direction of innovation management and believe that the ideas offered have much value to the future practice of innovation in organizations. We speak only for ourselves when we say that we wait for future information and exchanges with the scientific community regarding innovation management.

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