

From Theory to Practice – and from Practice to Innovation: How Knowledge Evolves with Technology

In 2018, two colleagues and I published a study in *Mundo PM* magazine whose central question remains highly relevant today. We examined the use of a framework designed to integrate social media into knowledge management in project management. More important than the specific findings at the time generated using tools such as WhatsApp, Lotus Notes, PM Social, and SharePoint is the study's enduring relevance to a fundamental question for organizations seeking to innovate: How can scientific knowledge be translated into practice while, at the same time, practical experience is used to refine scientific knowledge itself in ways that advance innovation?

The study followed a Design Science Research (DSR) approach, a methodology aimed at addressing classes of problems through the creation and evaluation of artifacts. Its logic is particularly well suited to innovation: build a solution, put it into use, observe how it interacts with its real-world context, and refine it accordingly. The research organized this process into stages encompassing problem awareness, objective definition, artifact development, demonstration, evaluation, and communication.

In the study, the SM4PM framework was deployed in a real-world setting and subsequently evaluated by participants. The results were not treated merely as confirmation of the original proposal. Instead, user feedback generated new insights that led to the framework's refinement and redesign. This is precisely the kind of logic that can be applied to innovation management.

Innovation rarely arrives fully formed. Even when it rests on a strong conceptual foundation, introducing it into an organizational setting produces unexpected effects. Users interpret the solution in different ways, processes expose constraints, new needs emerge, and previously unforeseen opportunities come into view. When an organization is equipped to capture this evidence, experience becomes more than execution – it becomes a source of knowledge.

The 2018 study provides a concrete illustration of this dynamic. The evaluation showed that the solution was generally well received, but it also revealed challenges in how participants perceived the integration among the tools. Rather than treating those challenges as mere implementation failures, the researchers used the findings to improve the artifact. The refinement introduced additional forms of integration through both processes and people, making the purpose of the tools – and their relationship within the broader system – clearer.

For innovation, the lesson is fundamental: the outcome of an experiment is not simply the validation or rejection of an idea; it is raw material for the evolution of knowledge.

This perspective moves beyond the traditional view that innovation is simply a matter of adopting new technology. Technology is a means, not an end. The real differentiator is an organization's ability to learn from how technology is used. In other words, an innovative organization is not necessarily the one that adopts the most tools, but the one that can turn the use of those tools into knowledge, learning, and continuous improvement.

The study showed, for example, that technology could support knowledge creation, transfer, storage, retrieval, and application. It also demonstrated that different tools could

play complementary roles and that integration depended not only on technical connections, but also on processes and people.

That finding translates readily to today's digital innovation landscape. In 2018, social media represented an important technological frontier for knowledge management. Today, artificial intelligence (AI) can be seen as occupying part of that frontier. This does not mean that AI and social media are equivalent technologies. The parallel lies in their ability to expand the ways people, information, and knowledge can interact.

AI adds a new layer to that relationship. It can help organizations organize, synthesize, retrieve, and interpret large volumes of information; identify patterns; support decision-making; generate alternatives; and accelerate experimentation cycles. Its effectiveness, however, will depend on organizational context, processes, people, and the quality of the knowledge on which it relies. As with the tools examined in the study, simply making a technology available does not ensure adoption or automatically produce innovation.

The strategic question, then, is to move beyond "What can AI do?" and ask instead, "What does the organization learn by using AI, and how does it embed that learning into the way it operates?"

That question elevates the technology discussion to a more mature, systems-level perspective. An AI application may be developed on the basis of theoretical assumptions and established best practices. Once it is put into use, however, its outcomes, limitations, and interactions with users generate new knowledge. That knowledge can then feed back into the model, the process, or even the underlying theory that guided the application's design. The result is a continuous learning cycle.

That cycle was the study's primary contribution. The authors developed a framework that helped practitioners perform their work more effectively – an example of theory translated into practice. At the same time, users' reasoning and experiences drove refinements to the framework, illustrating how theory can emerge from practice and how innovation can arise from the ongoing exchange between the two. According to the authors, this interaction strengthens both scientific knowledge and practitioners' work while fostering innovation.

The research also reinforced the idea that knowledge must circulate, be interpreted, combined, and applied. It found evidence that different technological mechanisms contributed to these processes and that knowledge could become embedded in practice as work was being carried out. From this perspective, innovation management can benefit from an approach similar to the "Holistic Knowledge Funnel" presented in the study. Innovation begins with dispersed ideas, experiences, and knowledge; moves through interactions among people and technologies; is organized and transformed; and ultimately flows back into the organization as actionable knowledge. The process does not end when a solution is implemented. It continues for as long as experience generates new learning.

The 2018 study can therefore be read today as a reflection on how organizations learn while they innovate. The tools have changed, but the principle remains. Then, the conversation centered on social media; today, it includes artificial intelligence, automation, collaborative platforms, and other emerging technologies. Tomorrow, the technologies will be different again.

What endures is the ability to connect scientific knowledge with practical experience. Theory provides direction, criteria, and explanations. Practice provides evidence, context, and new problems to solve. When the two work in concert, organizations generate knowledge and innovation from what they learn by doing.

Rather than simply keeping pace with the next technology, competitive advantage will come from learning from it faster – and channeling that learning into innovation.

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Further reading:

Narazaki, R. Y., Pedron, C. D., & Chaves, M. S. (2018). Teoria & Prática: Aplicação de um framework para guiar o uso integrado de mídias sociais no suporte à Gestão do Conhecimento no Gerenciamento de Projetos. *Mundo PM*, 83, 18–26.

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