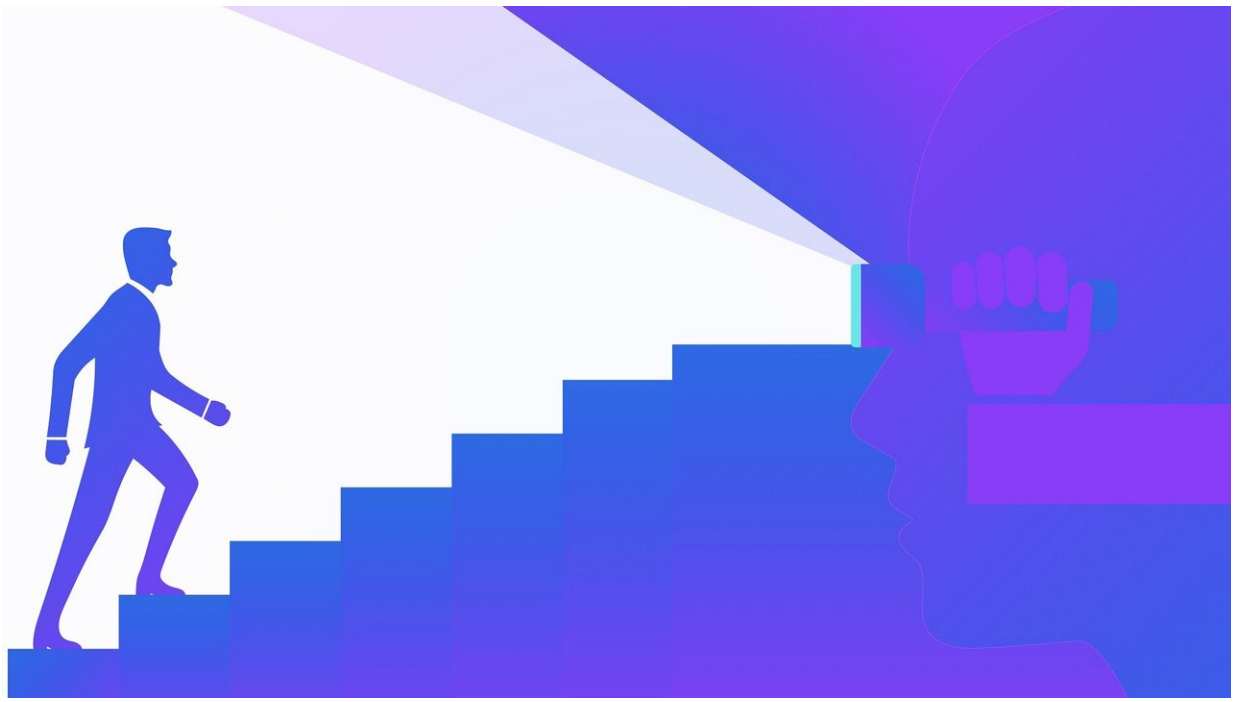
Study finds shifting mindset increases managers' willingness to invest in new technology

April 19 2021, by Sara Savat



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Forget the 30,000-foot, big-picture view. When faced with a cutting-edge technological idea, business leaders who approach the idea in more concrete "how" terms—rather than in abstract "why" terms—are less likely to be deterred by its novelty and more likely to recognize its

utility, which increases their propensity to invest, according to new research from the Olin Business School at Washington University in St. Louis.

This method of information processing, known as a low-level construal, is especially useful for leaders who lack technological expertise.

In today's rapidly changing world, companies that are willing to embrace new technologies often have an edge over the competition. Yet decision-makers who are out of their depth with a novel technology often reject it because they lack the expertise to make sense of the technology, resulting in a sense of uncertainty and general unease with the idea.

"The further removed decision-makers are intellectually from an idea, the less likely they are to invest in it," said Markus Baer, professor of organizational behavior and study co-author. "Keeping up with the rapid pace of technology can be especially challenging. But missed opportunities and failing to keep up, technologically speaking, is a recipe for failure."

What's a business leader to do?

"Research suggests that managers tend to undervalue ideas that fall outside their area of expertise and overvalue ideas that are squarely in their wheelhouse," Baer said.

"And it gets worse. The further removed they are intellectually from the idea, the more likely they are to view it as too 'out-there' and as less useful, both of which make it less likely that decision-makers will financially commit to the idea."

To overcome this expertise gap, previous research has suggested managers should engage in a type of deliberate cognition that involves

drawing on prior experience with similar ideas to evaluate new technological ideas. However, that's not possible when the idea is truly novel.

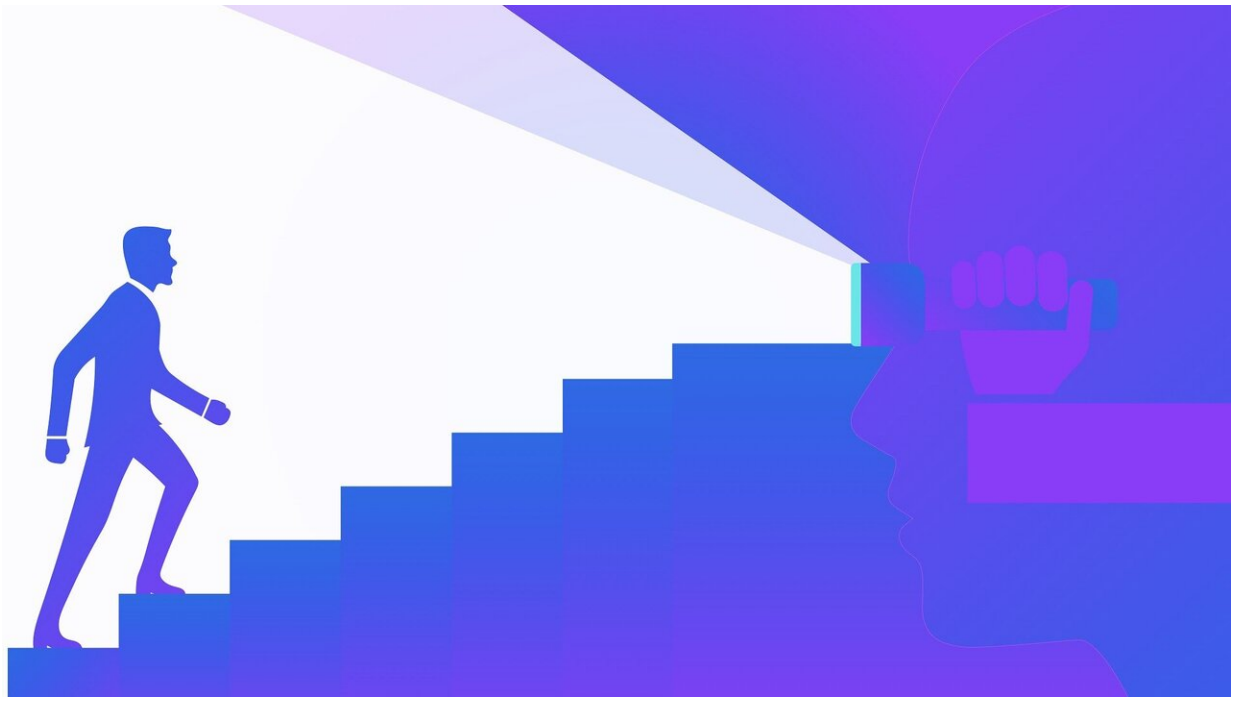
Baer—along with Matthew P. Mount of Deakin University and Matthew J. Lupoli of Monash University, both in Australia—wanted to better understand the ways in which managers process information about novel technological ideas and how that influences their interpretation and likelihood to invest.

Their research findings, forthcoming in Strategic Management Journal, offer a way for business leaders to overcome organizational inertia and recognize new technological opportunities.

Abstract vs concrete?

Baer, Mount and Lupoli conducted two experiments to study how expertise distance and information-processing style influence perceptions of novel technological ideas and likelihood to invest.

The first experiment took place "in the field" and involved 300 senior R&D and innovation investment decision-makers who work for organizations that were exploring Quantum Key Distribution (QKD) as a novel cybersecurity technology. QKD is a secure communication method that relies on cryptographic protocol involving components of quantum mechanics. Participants were given information about the technology and then were asked to rate how novel and useful the technology was. Finally, they were asked to specify the proportion of their annual disposable income they would be willing to invest to bring QKD to market.



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The second experiment, an online survey, included nearly 500 middle- and upper-level managers. Participants assumed the role of a senior executive of a fictitious, application-based taxi company "AppCab" faced with the prospect of investing in a fleet of self-driving cars. They were randomly assigned to one of the four conditions—expert/concrete thinking, expert/abstract thinking, non-expert/concrete thinking or non-expert/abstract thinking.

Respondents in the expert groups were given detailed information about the self-driving cars, while respondents in the non-expert group were given general background information about the taxi industry. Respondents in the high-level construal groups were asked a number of "why" questions to switch their thinking to an abstract mode, while respondents in the low-level construal groups were asked "how"

questions to shift their thinking to a more concrete mode. They also were asked questions about the perceived novelty and usefulness of the technology. Finally, they were asked to rate how likely they were to invest in the fleet of self-driving cars.

"Across our two studies, we show that decision-makers who are distant from a highly novel technological idea in terms of domain expertise are less likely to invest in it. However, our results also show that the effect of expertise distance is entirely dependent on how abstractly vs. concretely they approach the idea," the authors wrote.

Shifting managers' perspectives

As the current research demonstrates, how decision-makers process information influences their interpretation of novel technological ideas, which ultimately shapes their investment decisions.

"Highly novel ideas, when evaluated by decision-makers who have no expertise in the relevant domain, are perceived as too uncertain and too risky," Baer said. "Changing how they approach the idea can help managers mitigate the negative effect of expertise distance."

Many leaders believe they need to focus on the big picture and leave the day-to-day tasks and small details to lower-level managers and employees. Indeed, there can be benefits to this high-level perspective. Decision-makers engaged in high-level thinking are future-oriented and tend to focus their attention on abstract, broad information related to distant goals.

However, when it comes to evaluating novel technology, this type of high-level construal thinking can hold leaders back.

"Most decision-makers have a preference for rationality and predictive

accuracy over the uncertainty inherent in novel technological ideas," Baer said. "When leaders focus only on the high-level, abstract features of the technology, they tend to over-emphasize the novelty and risks of the idea, which, in turn, decreases their likelihood to invest.

"Our research shows this type of thinking can compound the negative effects of decision-makers' expertise distance on the propensity to invest in novel ideas."

In contrast, decision-makers using low-level construal are present-oriented and tend to focus their attention on concrete, narrow information related to the benefits and feasibility of adopting the novel technology. By focusing on the idiosyncratic, technical details of highly novel ideas and aspects of feasibility, decision-makers may be more inclined to perceive the idea as being useful and, by extension, less novel and risky, Baer said.

Ultimately, the research highlights the unique value of adopting a more concrete way of thinking when faced with radical technological change.

"By shifting the way in which they evaluate novel ideas—from abstract to concrete—managers will improve their ability to recognize the potential value of groundbreaking ideas, maintaining a technological edge on the competition," Baer said.

Provided by Washington University in St. Louis

Citation: Study finds shifting mindset increases managers' willingness to invest in new technology (2021, April 19) retrieved 5 May 2024 from https://phys.org/news/2021-04-shifting-mindset-willingness-invest-technology.html