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Operations Practice

When failure is an option: Fostering organizational innovation and learning

To achieve sustainable innovation, companies can embrace failure as a catalyst for driving change. Capability centers can enhance performance and promote learning in high-stakes operations.

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Moving past a fear of failure can enable greater innovation but requires organizations to shift their mindsets from viewing failure as a dead end to recognizing it as a catalyst for change. This perspective acknowledges that achieving operational excellence takes practice and that failure to innovate can ultimately prove costly or even dangerous.

In this episode of *McKinsey Talks Operations*, host Daphne Luchtenberg sits down with Markus Hammer, McKinsey's director of learning, and Amy Radermacher, McKinsey's director of innovation and learning centers. They are joined by Professor Christian Ramsauer, head of the Institute of Innovation and Industrial Management at Graz University of Technology in Austria.

Listen in as they discuss the challenges of implementing change, the role of capability centers in promoting safe experimentation, and the importance of fostering a supportive and collaborative work environment. The participants offer real-world examples to highlight failure's role in driving operational changes. Key takeaways from this session include the need for a shared vision and continuous-learning mindset, the transformative potential of failure, the valuable experiential learning provided by capability centers, and the importance of aligning technological investments with organizational objectives.

The following conversation has been edited for length and clarity.

Daphne Luchtenberg: In today's episode, we'll explore the role that failure and the fear of failure play in the pursuit of innovation. We'll examine the challenges organizations face when trying to implement large-scale change. My guests today will discuss the impact that capability centers can have to help teams face their fear of failure and share some practical examples of how to fail fast, enhance learning, and then really scale innovation. We'll also hear examples that demonstrate real-world impact and discover the art of navigating failure safely and swiftly to drive innovation and capture value for your organization.

With me today is our very own Amy Rademacher, director of the Innovation and Learning Centers. Amy, welcome.

Amy Rademacher: Thanks so much for having me, Daphne.

Daphne Luchtenberg: And Markus Hammer, McKinsey's director of learning. Markus, great to see you.

Markus Hammer: Nice to be here. Thank you.

Daphne Luchtenberg: And a special guest, Professor Christian Ramsauer, who is the head of the Institute of Innovation and Industrial Management at Graz University of Technology in Austria. Christian, thank you so much for spending time with us this morning.

Christian Ramsauer: Thanks, Daphne, for the opportunity.

Daphne Luchtenberg: I want to start with a captivating news story some of our listeners may have caught earlier this year about the failure of Peregrine Mission One,[1] in which the lunar lander *Peregrine* experienced a malfunction on its way to landing on the moon as it separated from the launch rocket. For those unfamiliar with the project, the *Peregrine* mission, among many others, is looking to accelerate lunar science by deploying practical experiments on the moon. What's most interesting about this mission is the speed at which its failure sparked the next phase of innovation and

[1] "Astrobotic readies next lunar lander following failed Peregrine moon mission," Space.com, March 19, 2024.

spurred ambitious next steps to relaunch later in the year.

Markus, I know you're not in the business of rocket science or space travel. But as someone who spends a lot of time helping teams innovate through skill building, what do you think the *Peregrine* project team did right in the face of this extensive failure?

Markus Hammer: That's a great question. Thank you, Daphne. I love the *Peregrine* example, because every business leader has encountered failure in some way or another. This example carries high stakes.

It's critical for leaders to shift their mindset from one of being stuck to one of learning. We may have failed the original purpose of the mission, but we learned from it, innovated, and redirected the project elsewhere. This is something others can learn from as they navigate operational challenges.

Daphne Luchtenberg: I think you're right. The approach to problem-solving matters. Christian, in your capacity, I'm sure you've seen the breadth of challenges teams are asked to tackle for their organizations. Can you share a bit about the operational challenges that companies face and the way their teams successfully or sometimes unsuccessfully approach them?

Christian Ramsauer: What I see is that in industry, we are often stuck to a plan and focused on executing it, without much preparation for unforeseen circumstances. It might be beneficial to establish a setup where experimentation is encouraged early on, allowing for testing of various scenarios and assessing outcomes. Additionally, having a team that remains curious and consistently asks questions can lead to discovering new solutions. This experimentation could take place outside the operational line of the factory, perhaps in a dedicated environment for experimentation, which could prove to be very helpful.

Daphne Luchtenberg: Markus, what have you found as you've been working with teams to build those capabilities? What's been successful?

Markus Hammer: As Christian just mentioned, it's the mindset of curiosity and continuous improvement. We've seen this a lot in our global training sessions and in our innovation learning centers. What truly enables all of this is the psychologically safe environment and the trust among team members. Also, as we transition to a more skill-centric world, developing leadership and problem-solving skills alongside operational expertise becomes even more critical for fostering innovation.

Daphne Luchtenberg: Companies have the pick of their centers. They can create their own in-house, or they can work with third parties, but how exactly do you see these capability centers adding value?

Amy Rademacher: It actually touches on much of what Markus and Christian were discussing. For many organizations, the experimentation Christian mentioned, if conducted in real-time operations, can be quite terrifying, leading to a shutdown of creative thinking and innovation—the exact opposite of the psychological safety Markus talked about. However, a capability center provides organizations with a risk-free environment in which to experiment, enabling them to feel comfortable with failing fast and learning from those experiences. This rapid improvement in organizational innovation can significantly enhance performance going forward.

Daphne Luchtenberg: And Amy, what does a good capability center look like? What does it have to have, and how much can you leave up to the imagination?

Amy Rademacher: It's interesting; we've found that the most powerful capability centers are highly realistic simulations. Organizations or entities custom design them to immerse individuals and teams in what's possible, creating an environment that's truly representative of what they might encounter on a day-to-day basis. This approach allows them to build the skills they need effectively. In practice, this translates into a strong emphasis on learning by doing, as that's how adults learn best and retain skills in the long run.

For example, let's consider an organization focused on innovation in manufacturing operations. A capability center in this context would resemble a custom-built functioning shop floor environment, complete with operators, real production equipment, and embedded technology, providing a holistic learning experience across technical and management dimensions.

It's critical to touch on all of the learning dimensions, because we've seen that when companies don't, their chances of failure in making change stick and ensuring long-term success in their innovation journey dramatically change. To add to this point, the focus on learning by doing becomes especially important when the environment accurately reflects what individuals encounter on a day-to-day basis. The most powerful capability centers are those centered around this from–to journey, where individuals and teams can be immersed in the current state of where the organization is today.

Daphne Luchtenberg: Thanks, Amy, that was great. Christian, bringing you back in. What is the role of a neutral environment for problem-solving?

Christian Ramsauer: When you have a neutral place, its experiments are not dangerous, so when you try things out, nothing can happen. It's risk free. And this is the great thing about the capability center at my university. We operate the Schumpeter Laboratory for Innovation for students and employees from companies to try out ideas risk free.

In the business or factory setting, trying things out usually comes with immediate added costs or other issues. Sometimes it's even dangerous. Therefore, neutral experimentation environments, hosted outside the company by other organizations, are even better, because you're away from the company's DNA. Being hosted by somebody else can greatly ease up and free up additional brainpower or creativity, leading to new solutions.

Daphne Luchtenberg: I love this idea of failing fast and maybe having fun while you're failing. Amy?

Amy Rademacher: It's not only about having fun and enjoying the process, but it also adds an element of excitement and enjoyment to the overall transformation the company is undergoing. Getting workers on board and motivated to make the necessary changes is incredibly important. So, that element of fun really drives things forward.

One last thing I'd like to mention is stepping beyond skill building here. One of the really neat and powerful aspects of capability centers is that for the teams and individuals who go through them, it serves as a shared reference point that helps build the glue between the team and individuals, even within the network. This cohesion is incredibly important for helping the transformation and

ensuring the organization-wide new innovation approach sticks for the long run.

Daphne Luchtenberg: It allows them to be successful—a sense of achievement, I suppose.

Amy Rademacher: Exactly.

Daphne Luchtenberg: Markus, I want to bring you back in. Obviously, in technology companies, this idea of failing fast has been a key driver for innovation and success. As you say, the impact of the failure is not going to be so disruptive. But what about industries that are much more prone to disruption when a failure occurs? How do you help those teams become comfortable with experimentation and potential failure?

Markus Hammer: First of all, it's important to recognize the real need for productivity growth. The McKinsey Global Institute recently published a report showing that productivity has actually declined in advanced economies by 1 percent over the last few decades. So it's not just stagnation; there's a reduction in productivity. Therefore, there's a need to build capabilities and introduce new technologies and digitization, which could help boost productivity by 0.5 percent to 1 percent.

As we all are aware, with generative AI around the corner and already starting to scale, there's another potential 0.5 percentage points increase in productivity that can be gained by quickly adopting that technology. Capability centers really help in building the skills and capabilities required to successfully introduce and scale new technologies, all while minimizing risks. This enables people to become more innovative and effective problem solvers, ultimately leading to the business impact we all aspire to and that society truly needs.

Daphne Luchtenberg: Markus, I imagine that you've been in the industry, and Christian and Amy, you're probably there as well—I suppose what you would be saying is if you are working in an industry where a failure can be so much more disruptive, if anything, the imperative is even greater to work in these fail-safe environments so that you can really move things forward.

Markus Hammer: You cannot easily shut off a power plant or a chemical reaction. Therefore, you really need to step out of that environment and innovate and learn, bringing those learnings and skills back into the real production environment. It's totally relevant, as you said, across industries, particularly for those where you cannot experiment and fail on the line.

Daphne Luchtenberg: Yes, and Christian?

Christian Ramsauer: Today, we have highly cost-effective virtual reality technologies that we can use in various areas, not just in innovation and product development, as BMW and other companies have been doing for years, but also in operations. With virtual reality, you can simulate an entire factory. You'd need to build the model and then explore scenarios to see the outcomes. So today, with virtual reality and simulation, you can do a lot to ensure fail-safety.

Additionally, it's crucial for executives, the C-level individuals, to understand that investing in these capabilities opens up new potential for growth and productivity in the future. And I think that's something we need to make sure that executives know—that this is a good investment for the future.

Daphne Luchtenberg: That's an important point. When we talk about making transformations stick, it isn't just about the operators on the shop floor being trained and finding the solutions, but it's actually how does an entire team as well as the decision makers bring together a new operating model, a new way of making decisions to live the innovation. Amy, there are some examples of companies who have done this super well. Can you talk a little bit about them?

Amy Rademacher: Definitely. Before diving into specific examples, let me just outline a bit about the approach we've seen successful companies take as they're thinking about scaling up the processes we've been talking about and also scaling up their innovation journey at a company-wide level. What we've seen is that successful organizations start by defining their vision of where they want to go and the underlying business objectives they want to achieve with the transformation. Then they take stock of where they are today to understand the starting point and where they need to go.

We've been speaking a lot about capability centers and skill building and how people are the underlying foundation behind making the innovation journey successful for the long run. So then you have to think about what cohorts of folks you need to involve in the transformation, what they need to learn, and create customized learning journeys so that the objectives for each cohort are met and they'll be able to build the skills they need to be successful. For many organizations, capability centers are a core part of this learning journey integrated with several other elements, including fieldwork to bring it back to your day-to-day operations, go-and-see visits to also see what's possible and what other organizations are doing, self-paced online learning, and a number of elements that are integrated together to provide holistic learning across various different environments.

To bring it to life, one organization we saw doing this, a consumer goods company, focused on increasing manufacturing productivity. They wanted to use innovation to lower production costs and boost revenue across their 18 global sites. They focused on upskilling 3,000 colleagues to drive the change, showing significant scale. Today, they've implemented 20 innovation-driven use cases across their sites, resulting in a more than 20 percent increase in productivity throughput and a $45 million cost savings to date. They've started with the first three sites, just the tip of the spear as they continue through their overall journey.

Daphne Luchtenberg: Wow, that's impressive, and that just shows you it's worth making the investment.

Amy Rademacher: It is, but there are actually some watchouts to keep in mind as well. A recent McKinsey Global Survey found that, along these lines and considering the importance of innovation, companies are planning to dramatically increase their investment in automation and robotics, even reaching up to 25 percent of their capital spend.[2]

But there are a couple of things to keep in mind. We often see that these efforts fail, for three main reasons: lack of vision, which we've been discussing regarding knowing where you want to go earlier; second, a poor understanding of the technology at play here; and third, a misalignment across the organization and the principles needed to make it happen.

Daphne Luchtenberg: Christian, you've seen countless organizations embark on these journeys. What is the right first step?

[2] "Unlocking the industrial potential of robotics and automation," McKinsey, January 6, 2023.

Christian Ramsauer: How to get out of the comfort zone, I would say. I think for executives, it's not so easy to start with. If I were an executive at this time, I would assess my team and consider what constitutes the right team for something new, innovative, and creative in my business. I would then evaluate the team's performance in terms of capability building, identifying those who are truly willing and able to grow as individuals and within a team, and find potential future executives. Building on that, I would determine who can drive the organization forward—tomorrow, in a year, or in five years. It's crucial to identify the right people in my company for this journey, as it is a long one.

There is often resistance, and I believe it requires executives, particularly C-level individuals, who fully support this journey. If you have C-level individuals who believe in it, it's just a matter of time until it works. It may take a little while, but it's an investment in the future of the corporation.

Daphne Luchtenberg: Amy, you alluded to that as well, which is setting that vision, keeping fast to it, and making sure you're constantly coming back to it. Markus, if I were to ask you, what are some of the critical success factors of innovation in teams in business today?

Markus Hammer: Building on what Christian just said, having the right team and a vision, as Amy alluded to, is what you aspire to. So that's one thing to look for: having the right people on board. Then you move on to the team experience—ideally, utilizing one of the capability centers, designed as learning environments, to build critical problem-solving and innovation skills, product design skills, and getting familiar with AI and other digital technologies like virtual reality that we mentioned earlier.

It's really important to emphasize pilots. Innovation comes through this rapid cycle of trying things out. If you fail, you learn something, and then you continue, as we discussed in the beginning about the *Peregrine* expedition. This applies similarly to large-scale transformations: you pilot, you learn, and then you start to scale. Not everything will go according to plan, and new technologies may arise, and sometimes team members change along the way. Of course, there's also the macroeconomic context we all operate within.

But you need to have the right team, vision, and skills, supported by the right environments and grounded in a continuous-learning mindset, along with an environment of psychological safety and trust. There is a lot of trust required to be successful.

Daphne Luchtenberg: Fantastic. Thank you to all three of our speakers today. We've been discussing the role of failure and the fear of failure in driving innovation and operations, as well as ways in which learning programs can be constructed to assist organizations on their transformation journeys.

Professor Christian Ramsauer is head of the Institute of Innovation and Industrial Management at Graz University of Technology. **Amy Radermacher** is director of innovation and learning centers and is based in McKinsey's Minneapolis office, and **Markus Hammer** is director of learning and is based in the Vienna office. **Daphne Luchtenberg** is a director of communications and is based in the London office.

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