



# LEADING DIGITAL INNOVATION

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When the business environment is volatile, organizations must continually evolve to remain competitive. Today, many organizations are investing more than ever in digital technologies—especially in data and artificial intelligence (AI)—to realize their strategic ambitions. However, study after study reports that most organizations struggle with **digital innovation**,<sup>1</sup> the process of taking an idea that uses digital technologies from inception to impact. Their approaches to digital innovation consume money, talent, and time out of proportion to the limited measurable impact they deliver.

For more than a decade, we have studied how organizations redesign their approach to digital innovation in order to reduce waste on underperforming initiatives and increase bottom-line value.<sup>2</sup> For example, the global multi-energy organization Repsol created its Digital Program to invest in Repsol's digital capabilities and thereby increased profits by 20 percent over five years—a twofold return on investment.<sup>3</sup> The program team designed an approach that helped business units launch 505 digital innovation initiatives and scale 76 percent of them over five years.

Across case studies, we found that successful digital innovators—that is, organizations that realize greater bottom-line impact from their investments in digital—do not rely on a single heroic executive or centralized unit. Instead, they

leverage three distinct but complementary types of leaders: (1) initiative leaders, (2) shared resource leaders, and (3) portfolio leaders. This briefing describes what each type is accountable for building and maintaining, and how each takes a hypothesis-driven, test-and-learn approach to succeed.

## INITIATIVE LEADERS REALIZE STRATEGIC IMPACT

Initiative leaders are managers accountable for developing and operating a digital offering that contributes to a strategic ambition of the organization. In our research, we found that successful digital innovators normally assign two leaders per initiative to co-lead a cross-functional team.

Innovation initiatives that are fully resourced up front based on a detailed business case and then evaluated only on project metrics (time, budget, scope) rather than expected organizational value are a significant source of waste. These initiatives fail to realize measurable bottom-line value because the incentives don't require it.

To increase the likelihood that initiatives will realize significant strategic value, organizations that innovate successfully establish (1) a single organization-wide definition of what counts as a successful innovation result and (2) a test-and-learn process that every initiative must follow. Initiative leaders develop their innovations incrementally, in phases; generate evidence about desirability, feasibility, and viability; and earn resources for the next phase only when that evidence indicates continued investment is warranted.

At Norway's postal and logistics group Posten Bring, top-level executives introduced what they called the Helix Model to change how the organization innovates.<sup>4</sup> Drawing on design thinking, they defined a successful innovation result as one that is desirable: it addresses a need of a group of end users such as customers, employees, or partners; feasible: it works

1 For an example of one such study, see Eric Lamarre, Shital Chheda, Marti Riba, Vincent Genest, and Ahmed Nizam, "The Value of Digital Transformation," *Harvard Business Review*, July 31, 2023, <https://hbr.org/2023/07/the-value-of-digital-transformation>.

2 This briefing draws on insights the authors developed from 2016 to 2025 from producing a series of case studies, additional interviews conducted with over 50 executives, a survey of 277 organizations one author conducted in partnership with EY, and discussions of our findings with participants in dozens of executive education courses. Nils Olaya Fonstad, Martin Mocker, and Jukka Salonen, "How to Drive Digital Innovation Without Wasting Resources," *Harvard Business Review*, October 6, 2025, <https://hbr.org/2025/10/how-to-drive-digital-innovation-without-wasting-resources>.

3 N. O. Fonstad, Martin Mocker, and Jukka Salonen, "Scaling at Scale: How Repsol Realized €800 Million from Digital Innovations," MIT CISR Working Paper No. 464, July 2024, [https://cisr.mit.edu/publication/MIT\\_CISR-wp464\\_RepsolScalingAtScale\\_FonstadMockerSalonen](https://cisr.mit.edu/publication/MIT_CISR-wp464_RepsolScalingAtScale_FonstadMockerSalonen).

4 N. O. Fonstad, "Innovating with Greater Impact at Posten Norge," MIT CISR Working Paper No. 440, January 2020, [https://cisr.mit.edu/publication/MIT\\_CISRwp440\\_InnovationPostenNorge\\_Fonstad](https://cisr.mit.edu/publication/MIT_CISRwp440_InnovationPostenNorge_Fonstad). Posten Norge changed its name to Posten Bring in June 2023.

reliably—especially at scale, when it is available to many end users; and viable: it contributes to a strategic ambition. They anchored a three-phase innovation process in this definition.

Repsol's Digital Program similarly adopted the desirability-feasibility-viability standard and implemented a five-stage funding and innovation process. Each business unit carried a specific cash-flow target and was expected to pursue it through many initiatives rather than a few large bets. Every initiative had two co-leaders: a product owner from the business, accountable for desirability and viability; and a technical lead from the Digital Program, accountable for feasibility.

During each phase, Repsol's initiative leaders worked to reduce uncertainty by accumulating evidence on desirability, feasibility, and viability, and on the trade-offs among them—for example, improving operational reliability at the expense of near-term contribution to cash-flow targets. Between stages, leaders presented their evidence to a venture-style investment committee to earn resources for the next stage.

## SHARED RESOURCE LEADERS HELP INITIATIVES SCALE

Initiative teams need autonomy to discover how to deliver impact quickly. However, autonomy is not the same as independence. When organizations grant initiatives independence and do not invest in coordination (e.g., to increase reuse), initiatives often duplicate work, struggle to scale, or require more time and money than justified by their impact. In the short term, teams waste resources building components already developed elsewhere. In the long term, the organization accumulates an unnecessarily complex and risky patchwork of data, systems, processes, and external providers. At the same time, too much coordination can suffocate initiatives.

Successful innovators address this coordination challenge with shared resource leaders: functional experts from digital domains (e.g., cloud computing, data and AI, user experience, cybersecurity) and non-digital domains (e.g., human resources, risk and compliance, legal). Shared resource leaders manage teams of specialists who focus on helping initiatives realize their targets better and faster by overcoming common scaling constraints. Based on the needs of initiatives, each team develops and maintains a set of reusable resources—such as internally or externally provisioned components, platforms, standards, and talent—that are designed to be desirable to initiative teams, feasible across diverse initiatives, and viable for the enterprise because they simplify operations. In doing so, they pursue a second, longer-term interest: preventing excessive complexity that would increase operating cost and risk.

Shared resource leaders learn by looking across initiatives, and continuously adapt their offerings based on evidence about initiative needs, the impact of shared resources, and the past and expected impacts of initiatives. This comparison also surfaces trade-offs that shared resource leaders must determine how to balance, such as slowing an initiative to build a component that other initiatives can also use.

At Repsol, the Digital Program invested in shared resource teams that concentrated technology and talent in areas such as data and AI, robotics, and user experience design—and explicitly tied these “hubs” to initiative outcomes. Each initiative's technology lead was staffed from one of these hubs, creating a direct link between initiative delivery and the development of reusable assets. As initiatives surfaced recurring scaling challenges, the hubs translated those needs into shared resources that multiple teams could adopt. This reduced duplication and accelerated scaling helped initiatives contribute more quickly to business unit cash-flow targets. It also strengthened Repsol's ability to attract scarce digital talent and lowered development cost per initiative, enabling business units to pursue value through a larger number of initiatives. For example, the organization's Data Analytics and AI Hub helped over sixty percent of successful initiatives use data and analytics to contribute to the cash flow targets. To prioritize resources, the hub tracked each initiative's resource use and potential impact to identify which were the best candidates for increasingly sophisticated and costly analytics.

## PORTFOLIO LEADERS DYNAMICALLY REALLOCATE RESOURCES

Portfolio leaders ensure that scarce resources flow to the most relevant initiatives. They are top-level executives who regularly update strategic priorities, realign initiatives based on their expected impact, and reallocate key resources to the initiatives most likely to deliver against the priorities.

To realize profit-related ambitions, successful digital innovators invest in portfolios of initiatives that differ by expected business outcome and time horizon. Some initiatives reduce operational costs by improving processes and employee experience; others increase revenues by improving or expanding customer services or addressing new customer needs. Some are launched in reaction to sudden opportunities and threats; others respond to longer-term commitments to investors.

Determining which initiatives should receive limited resources is difficult, and changing allocations once made is harder still. Yet volatile environments require organizations to be resilient: to respond quickly to new opportunities and threats in ways that also advance their longer-term commitments to investors. Without a fair process for updating priorities and reallocating

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resources, organizations waste money, talent, and time on low-priority or non-complementary initiatives.

Portfolio leaders address this challenge with an organization-wide and transparent test-and-learn process. They make criteria and decisions visible, revisit them regularly, and stop initiatives that no longer merit investment.

At Spanish financial services organization BBVA, the CEO and other top-level executives introduced a process called the Single Development Agenda (SDA) to ensure the organization's resources were allocated to innovation initiatives most aligned with current strategic priorities.<sup>5</sup> Every quarter, corporate and business unit leaders updated their strategic priorities. They then realigned more than two thousand initiatives to the priorities, ranking initiatives by likely impact and reallocating talent accordingly. Initiatives that no longer aligned were stopped; each quarter, about 10 percent did not continue.

### THREE TYPES OF LEADERS OWN AND HARNESS DIGITAL INNOVATION

Our research has found that organizations that are successful innovators invest in a system of three complementary types of leaders—initiative leaders, shared resource leaders, and portfolio leaders—to own and harness digital innovation.

5 N. O. Fonstad and J. Salonen, "Four Changes: How BBVA Generated Greater Strategic Value," MIT CISR Working Paper No. 452, October 2021, [https://c isr.mit.edu/publication/MIT\\_CISRwp452\\_BBVA-SDA\\_FonstadSalonen](https://c isr.mit.edu/publication/MIT_CISRwp452_BBVA-SDA_FonstadSalonen).

All three types succeed by continuously improving how they generate insights about key aspects of their innovation process, how those aspects evolve and interact, and how trade-offs are best managed.

Organizations orchestrate these three types of leaders in different ways. BBVA dedicated 40 staff globally to manage its portfolio using the SDA process, with over 250 others based in and funded by BBVA's organizational units. The organization's IT and data units managed shared resources. Every business unit was responsible for initiatives. Repsol's Digital Program team managed the organization's portfolio; the team also managed the five-stage innovation process and the hubs providing shared resources. Other business units were responsible for initiatives. Both organizations linked all three types of leaders to clear strategic outcomes and invested in a variety of educational resources to build the leaders' skills and confidence.

To reduce waste and increase impact, empower initiative leaders, shared resource leaders, and portfolio leaders to test and learn in a disciplined way. Most importantly, link the work of all three leadership roles to your organization's strategic ambitions so that each can prioritize resources and insights toward what is most likely to matter. Assigning responsibility to a single executive or unit risks underinvesting in a broader leadership capacity required to deliver impact systematically. Who leads digital innovation in your organization?

Table: Successful Innovators Rely on Three Types of Leaders

TYPE OF LEADERS	ROLE	FOCUS	KEY ACTIONS	TRADE-OFF EXAMPLE
<b>Initiative leaders</b>	Business and digital managers	Build and maintain an offering that is desirable, feasible, and viable	<ul style="list-style-type: none"> <li>• Generate evidence of an offering's desirability, feasibility, and viability</li> <li>• Progress in phases; earn continued investment based on evidence</li> </ul>	Increasing reliability at scale vs. first to market
<b>Shared resource leaders</b>	Functional experts (digital and non-digital)	Build and maintain shared resources that help initiatives to scale and simplify operations	<ul style="list-style-type: none"> <li>• Learn from initiatives about common scaling constraints and how shared resource use affects success</li> <li>• Productize shared resources</li> </ul>	Speed to market vs. building shared, reusable resources
<b>Portfolio leaders</b>	Top-level executives	Build and maintain an initiative portfolio that allocates resources to initiatives best aligned with evolving strategic priorities	<ul style="list-style-type: none"> <li>• Regularly update strategic priorities with transparent criteria</li> <li>• Realign and rank initiatives based on evidence of likely impact</li> <li>• Reallocate scarce talent and funding to top initiatives</li> </ul>	Continuous innovation and new revenue streams

## MIT CENTER FOR INFORMATION SYSTEMS RESEARCH (CISR)

MIT CISR helps executives meet the challenge of leading increasingly digital and data-driven organizations. We provide insights on how organizations effectively realize value from approaches such as digital business transformation, data monetization, business ecosystems, and the digital workplace. Founded in 1974 and grounded in MIT's tradition of combining academic knowledge and practical purpose, we work directly with digital leaders, executives, and boards to develop our insights. Our research is funded by member organizations that support our work and participate in our consortium.

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