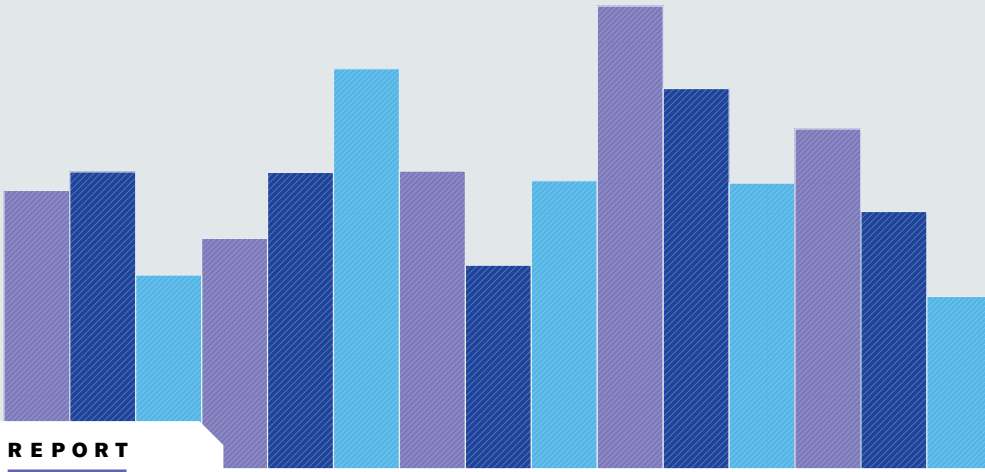


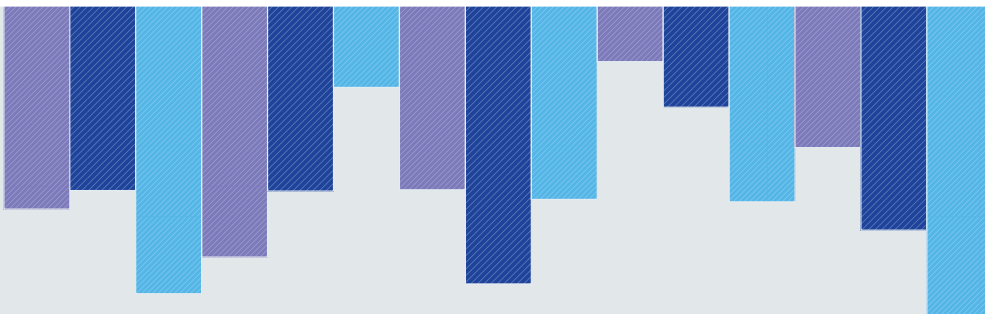


**Harvard  
Business  
Review**

ANALYTIC SERVICES



# Operationalizing Generative AI for Better Business Outcomes



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## **Beyond boundaries: Innovate, adapt, excel with generative AI**

The most exciting technological advancements merit each headline, every promise and all the buzz. Generative artificial intelligence (AI) has the power to transform organizations' processes, inform decision making and give an edge over competitors. By introducing generative AI into workflows and processes, organizations can realize tremendous benefits for their employees, customers, and bottom line.

Realizing all of AI's potential and maximizing its value requires careful preparation. It also takes integration with existing technologies, widespread employee adoption and a strong commitment and vision to going beyond basic features like AI assistants and task automation to enterprise-transforming initiatives. And organizations must properly manage high-quality data and navigate the complex landscape of AI regulations to optimize AI's use.

As we guide organizations through exploring their ideas and aspirations for ever higher returns on generative AI use case investments, Unisys is committed to driving innovation and maximizing the impact of AI across industries.

Also, as we explore the potential of generative AI, it becomes increasingly clear that its impact extends far beyond initial implementations. Just as people in the 1970's, if magically presented with a smartphone, would likely struggle to conjure all its innovative uses and features (maps, music, a camera), so, too, are organizations grappling with the possible impacts of generative AI when it comes to solving business problems. Those that seize this opportunity by investing wisely can spark innovation, satisfy regulatory standards and act as pioneers in this thrilling new age of AI. With the right resources, mindset, strategies, and culture, achieving business objectives by harnessing generative AI is more than possible. It's inevitable.

# Operationalizing Generative AI for Better Business Outcomes

As one of today's most buzzed-about technologies, generative AI (gen AI) promises to reshape entire industries, revolutionizing the way businesses design products, connect with customers, and drive employee productivity. Health care companies, for example, are using gen AI to facilitate early disease detection. Similarly, pharmaceutical companies are discovering gen AI's power to predict results before proceeding with costly clinical trials, while product developers are tapping into gen AI capabilities to create innovative design prototypes.

By leveraging vast amounts of data to create new content such as text, images, music, videos, and source code based on inputs or prompts, gen AI has prompted "a worldwide euphoria," says Bill Wong, an artificial intelligence (AI) research fellow and AI and data analytics lead at Info-Tech Research Group in Toronto. "We've entered a new frontier with applications that we've never really seen before."

To learn more about gen AI's potential for business transformation, Harvard Business Review Analytic Services conducted a November 2023 survey of 500 members of the *Harvard Business Review* audience who are familiar with their organization's current state regarding the use of gen AI and decisions about it. The findings reveal that 73% expect gen AI to be significantly or extremely valuable to their organization. Overall, 76% say their organization is using, piloting, or exploring gen AI for business purposes. **FIGURE 1**

But as with any new technology, organizations need to see value from their gen AI investments to move beyond early experimentation. In fact, 80% of respondents believe it's important to prove an ROI on their gen AI initiatives,

## HIGHLIGHTS



76% of respondents say their organization is **using, piloting, or exploring generative artificial intelligence (gen AI)** for business purposes.



73% expect gen AI to be **significantly or extremely valuable** to their organization.



41% agree their organization is realizing a positive **ROI from using gen AI**.

Due to rounding, some figures in this report may not add up to 100%.



“We’ve entered a new frontier with applications that we’ve never really seen before,” says Bill Wong, an artificial intelligence (AI) research fellow and AI and data analytics lead at Info-Tech Research Group.

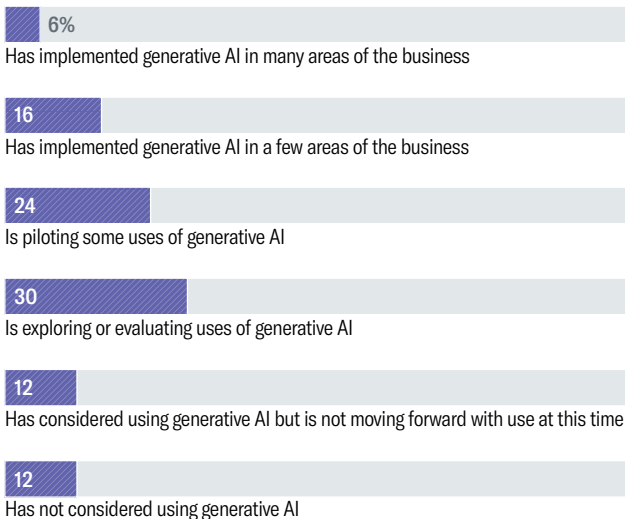
FIGURE 1

### Advancing the Ball on Generative Artificial Intelligence

Seventy-six percent of respondents are using, piloting, or exploring generative artificial intelligence (gen AI)

Which of the following best describes your organization’s current state regarding the use of gen AI for business purposes?

*My organization...*



Base: 500 respondents

Source: Harvard Business Review Analytic Services survey, November 2023

yet only slightly more than half (57%) agree their organization is seeing success from their use of gen AI, and just 41% agree their organization is realizing a positive ROI from using gen AI.

Moreover, when it comes to calculating the hard-dollar value of investing in this nascent technology, gen AI appears to be falling short of expectations. Only 20% of respondents report successfully reducing operational costs, and a mere 11% say they’ve increased sales/revenue by embracing gen AI.

Perhaps lost in all the excitement about gen AI is the reality that the cost of developing and maintaining the technology’s software can be prohibitively high, offsetting any financial gains. Even when large language models (LLMs) are properly

built and trained, the huge amount of computing power required to process billions of user queries, along with the talent needed to manage them, can turn a promising venture into a money-losing proposition. Indeed, 39% of those respondents who are exploring or actively using gen AI report unexpected costs that were not initially budgeted for their gen AI efforts.

Organizations are now taking a hard look at the cost-benefit calculus involving gen AI. “With AI, we had two to three years to demonstrate a return,” says the chief information officer (CIO) at a European animal food products producer. “With gen AI, there is a much higher urgency coming from the board to achieve a return on investment.”

This paper examines the importance of building a pathway to a return on gen AI investments. It gauges the preparedness of organizations to tackle AI projects with a clear strategy, a strong business case, and ROI objectives. It also explores the cost barriers to achieving financial gains with generative AI and best practices for achieving greater value from gen AI.

### The Challenges of Calculating Costs

It’s easy to understand gen AI’s growing appeal. By generating text, images, or other data using generative models, respondents currently exploring or evaluating gen AI say their organization is realizing benefits, including improved employee productivity/efficiency (42%), the development of new capabilities/innovations (34%), and a better utilization of data (29%). **FIGURE 2**

The European animal food products maker has seen that improved productivity and efficiency firsthand because it’s currently using gen AI for a variety of tasks, including analyzing procurement documents for critical details, such as expiry dates on raw materials, to ensure the company meets regulatory and legal requirements. Other use cases for gen AI include allowing the company’s junior sales associates to instantaneously access information, such as trial research, that would otherwise require months of training.

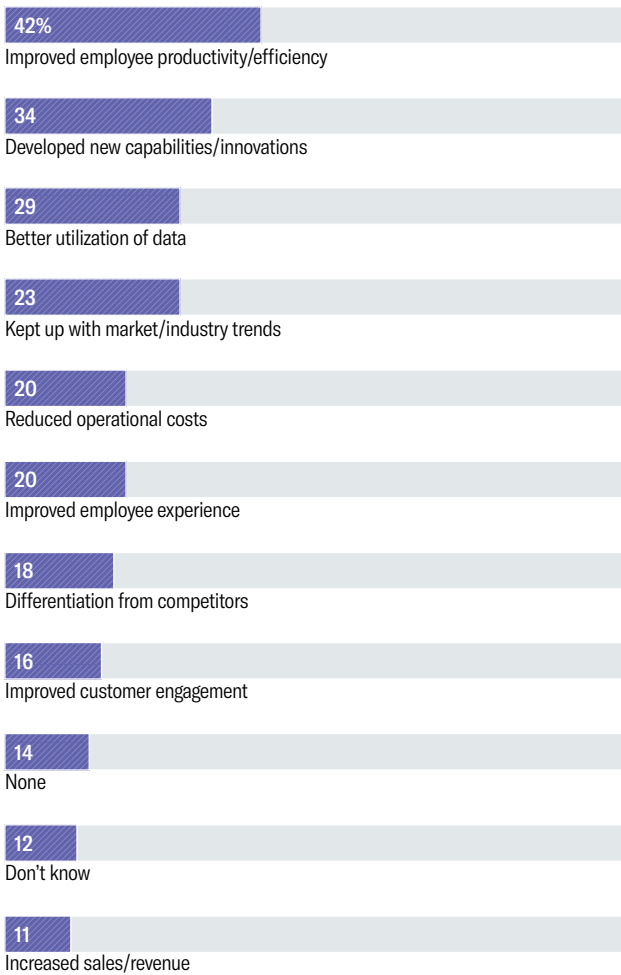
But moving beyond reaping benefits to calculating gen AI’s financial value is a challenging endeavor. Unlike cloud technology, which enables companies to replace high-priced on-premises servers with more cost-effective pay-as-you-go pricing structures, many businesses are still figuring out how to leverage gen AI and where it can have the greatest financial impact.

FIGURE 2

## The Benefits of Using Gen AI

Improved employee productivity leads the way, followed by the development of innovations

What benefits has your organization realized to date from its use of generative AI? Select all that apply. (Among respondents whose organization is using, piloting, or exploring generative AI)



Base: 500 respondents. Not shown: 2% other.

Source: Harvard Business Review Analytic Services survey, November 2023

“There is a lack of understanding of the cost implications of gen AI versus its potential revenue,” says Rui Lopes, director of new technology assessment for Elekta AB, a manufacturer of radiation therapy and radiosurgery-related equipment for the treatment of cancer and brain disorders that is based in Stockholm. “The lowest-hanging fruit may be to build a chatbot. But what are the cost implications and the risks



“There is a lack of understanding of the cost implications of gen AI versus its potential revenue,” says Rui Lopes, director of new technology assessment for Elekta AB.

associated with that? This is such a new space that it’s not well understood.”

Better understanding the costs associated with gen AI is of utmost importance to Lopes as Elekta increasingly leverages the technology to improve operational efficiencies and potentially enhance health services. For instance, Elekta is exploring how gen AI can automate the compliance of its products with the rules and guidelines of government agencies like Health Canada by training models to answer questions about regulations and flag potential breaches. “There’s an awful lot of administration that’s required to substantiate any claims that we make to the FDA [Food and Drug Administration] or Health Canada,” says Lopes. “Generative AI can hopefully lessen the burden over time.”

Organizations are also struggling to determine how best to measure gen AI’s impact on a business. For instance, it’s relatively easy for a retailer to calculate increased online sales as a result of using predictive analytics for product recommendations. Gen AI, on the other hand, is often used as a tool for crafting marketing messages and creating email responses—tasks that are tough to put a dollar value on.

“There isn’t always great data on tasks like how many minutes in a day a customer service agent spends on writing email responses and, similarly, if they spend 40% less time writing that email, how much value that creates for the firm,” says David Greenfield, chief product officer for SOVA, a Milwaukee-based advisory, services, and product design company that specializes in AI.

Years of media hype and false narratives regarding how quickly gen AI can deliver results are also making it hard for organizations to establish accurate expectations of its impact. Certainly, if executed strategically, gen AI can deliver impressive ROI. The problem is organizations often overlook how educating employees, preparing vast volumes of data, integrating IT infrastructure, and training gen AI models can take time and seem to delay reaping rewards and realizing a higher ROI. “It takes time, effort, and money to customize

these applications to drive value for a given organization,” says Info-Tech’s Wong.

New and innovative ways for weighing gen AI’s risks and rewards are emerging. As part of this movement, organizations are trying to learn the importance of aligning gen AI goals with business objectives. They are exploring how best to scale gen AI across an organization to prevent surprises down the line. They want to figure out how to reuse core capabilities to help stretch financial resources. Organizations are also investing in employee training as a critical part of driving adoption of gen AI tools. Together, these considerations can empower organizations to properly gauge gen AI’s financial impact and cut through the hype for a more realistic assessment of this breakthrough technology’s value.

### The Pursuit of Value

Having tools and methods to measure financial impact are one thing, but it’s incumbent on organizations to identify the conditions where they can be put to the best use. The first step in building such a pathway to a return on gen AI investments is determining what an organization wants to achieve and whether these goals properly align with business objectives.

“One mistake we often see is organizations looking first at AI capabilities and then thinking about how they could use them internally,” says SOVA’s Greenfield. “It’s most effective to think about your business first and what are the areas that could drive success and then think about how AI could improve the processes that drive these business needs.”

As it is, organizations’ reasons for investing in gen AI vary significantly, and those investments have resulted in varying degrees of success: Among respondents who say their organization is currently using, piloting, or exploring gen AI, 67% cite improving productivity/efficiency as a key driver compared to 42% who say it’s a benefit their organization is currently realizing from gen AI. Forty-five percent say their organization is motivated to develop new capabilities/innovations, with 34% achieving this goal. And 32% say better utilizing data is a reason to invest in gen AI; similarly, 29% say it’s a reaped benefit. **FIGURE 3** A smaller proportion of respondents say their organization is looking to achieve financial gains such as reducing operational costs (30%) and increasing sales/revenue (16%).

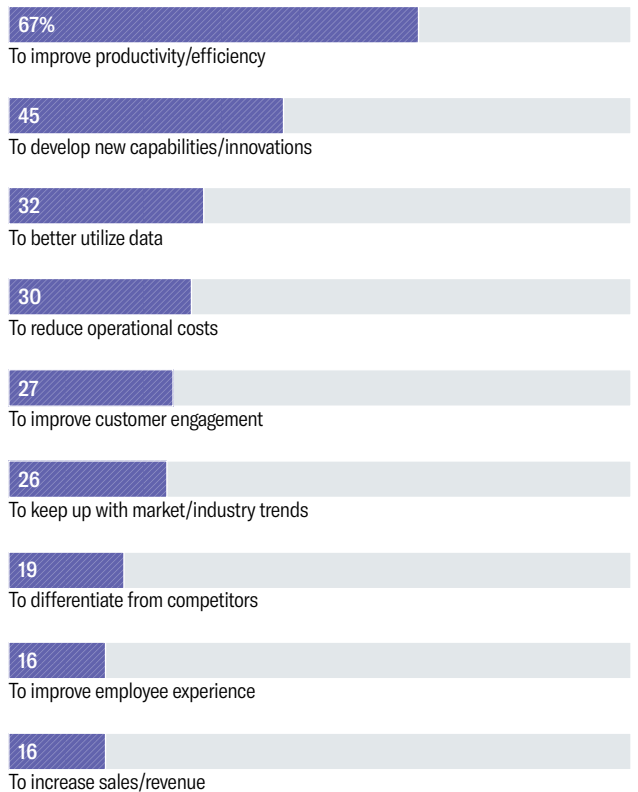
In fact, for all the hype surrounding gen AI’s ability to cut costs by replacing human beings with sophisticated algorithms, the European CIO says, “If I go to the board and say, ‘Here is our investment in gen AI and this is the savings,’ it’s a difficult sell for us because we’re a low-margin business [anyway].” Rather, he says, his organization works hand in hand with customers to identify high-value use cases that

FIGURE 3

### Productivity Improvement Provides the Impetus

It’s the top reason, but not the only one, why organizations are exploring gen AI

What are the primary factors motivating your organization’s exploration of generative AI? Select up to three. (Among respondents whose organization is using, piloting, or exploring generative AI)




Base: 380 respondents. Not shown: 1% other, 1% don’t know.

Source: Harvard Business Review Analytic Services survey, November 2023

can demonstrate “tangible results. We try to have the ROI back within a year to ensure that management is eager to start with the next initiative.” Indeed, among those who are using or exploring gen AI, 55% agree that their organization is realizing tangible business value from its use.

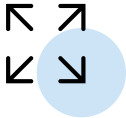
The next step to achieving an ROI on gen AI is developing a deep understanding of the costs involved and how these costs might offset any financial gains, such as upticks in employee productivity or improved customer service. For example, investments in cloud infrastructure and specialized hardware such as graphics processors are critical for supporting and training gen AI models. Because LLMs are only as effective as the data used to train them, organizations must clean



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**David Greenfield, chief product officer, SOVA**





“It’s really about selecting use cases that are scalable. If we can invent a gen AI application once and then scale it all over the world, it can bring a lot of benefits for a global company,” says the chief information officer for a European animal food products producer.

their data by removing random information, inaccuracies, missing values, and bias; identify and fully integrate data silos and unstructured data; and ensure data consistency across the enterprise—labor-intensive and complex tasks that can inflate the costs of preparing for gen AI. Running LLMs, designed to perform billions of calculations at a time, also requires huge amounts of costly computing power, not to mention the cumulative costs of licensing agreements and monthly subscription fees for gen AI applications and features.

Complicating matters, says Vaibhav Kumar, senior director at the Association of Data Scientists in Karnataka, India, is the fact that “companies aren’t always sure how much infrastructure they’ll need, such as cloud support and servers, until the implementation begins.”

Even organizations that take the time to carefully calculate the costs of gen AI can encounter unanticipated expenses if they fail to factor in scalability. In these early days of gen AI, many organizations are experimenting with pilot projects that may not consume the same resources when fully deployed. One way to control costs is by building on the infrastructure and capabilities created during the experimentation phases of a project. For example, the European CIO says, by establishing a cloud-based foundation for gen AI, his organization can enable multiple use cases with a high ROI while managing costs.

“It’s really about selecting use cases that are scalable,” he says. “If we can invent a gen AI application once and then scale it all over the world, it can bring a lot of benefits for a global company.”

Consider, for example, a retail company that creates a digital assistant to generate automatic responses to customer inquiries and then reuses its user interface, search capabilities, and LLMs to design a tool for investigating shipment delays.

In addition to reusing core capabilities for scalability, standardization can also help organizations better calculate the costs of gen AI. For instance, Elekta's Lopes says the company has developed “a standardized way of deploying small explorations so that they’re easier to measure” over time.

“It can seem counterintuitive for the innovation process but it’s actually very helpful for organizations to have a real handle on evaluating the value and costs of each of its applications rather than just a gut feel,” he says.

## The Tally on Talent

Beyond technology expenditures, developing and managing large AI models requires qualified talent—a high-priced commodity in today’s competitive labor market. “In today’s market, starting salaries can range from \$200,000 to \$350,000 for a good prompt engineer with just one year of experience,” says Wong.

In-house talent must also develop an understanding of the intricacies of gen AI systems. “The promise of generative AI was that people without engineering or technical competence would be able to participate in this revolution and that domain experts could control their destiny through the tools created for generative AI,” says Lopes. “But it’s been more difficult than the [product] brochure suggests.”

To bridge this knowledge gap and get workers up to speed, many organizations are investing in employee training. For example, the European CIO says his company now offers its employees digital literacy training through the use of fun and interactive learning modules so that they “can set direction, vision, and potentially identify opportunities” for gen AI throughout the organization.

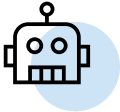
By establishing clear objectives, calculating costs, and bolstering talent, organizations can begin the tough task of creating a strategy for deploying gen AI in a way that is most likely to deliver ROI.

“Some organizations may find gen AI generates benefits, but unless they develop a plan up front, they will deploy numerous silo-based systems, all unintegrated, because they lack guidance on where they should invest and how to prioritize their investments,” says Wong.

In the case of Elekta, a slow and steady approach to gen AI is proving to be the most effective. “First we deploy applications in a controlled environment internally so that we can assess, analyze, and understand how these solutions live and breathe in a simulated environment,” says Lopes. Recent proofs of concept at Elekta include exploring how gen AI can improve efficiencies in preparing tender offers, accelerate and improve writing code for software, and improve document management.

One reason for this careful approach, Lopes asserts, is the fact that gen AI deployments often require “refocusing capacity. We have to stop what we’re doing to do something else.” That’s because many of today’s organizations are





Deploying a gen AI-powered chatbot, for instance, may require shifting strategic assets, such as cloud infrastructure or engineering teams, from one project to another. Gradually rolling out gen AI initiatives grants organizations the time needed to carefully reallocate and rebalance these assets.

operating with limited human and technological resources. As a result, deploying a gen AI-powered chatbot, for instance, may require shifting strategic assets, such as cloud infrastructure or engineering teams, from one project to another. Gradually rolling out gen AI initiatives grants organizations the time needed to carefully reallocate and rebalance these assets.

Deciding which projects are most deserving of additional resources, however, isn't easy. Fortunately, robust metrics can aid in the prioritization process, enabling leaders to build a strong and defensible business case for new investment. In some instances, these metrics are straightforward. For example, the European CIO says his organization has long relied on human agents to translate its employee training modules "into 15 main languages and sublanguages" for its nearly 10,000 employees worldwide. With gen AI, however, the European animal food products producer has managed to reduce the time it takes to translate the company's training manuals "from weeks to minutes"—a boon for employee productivity as measured by reduced hours spent on mundane translation tasks.

In fact, 62% of respondents say their organization uses productivity/efficiency gains to assess the performance of gen AI initiatives, followed by reduced operational costs (48%), customer experience/satisfaction improvement (46%), and increased innovation (41%). **FIGURE 4**

In the case of Elekta, Lopes asserts the company's engineers rely on gen AI to create software code for its health care products. "Factors such as increased coding efficiency and code completion rates have been really useful and have provided the most tangible metrics of efficiency for gen AI today," he says.

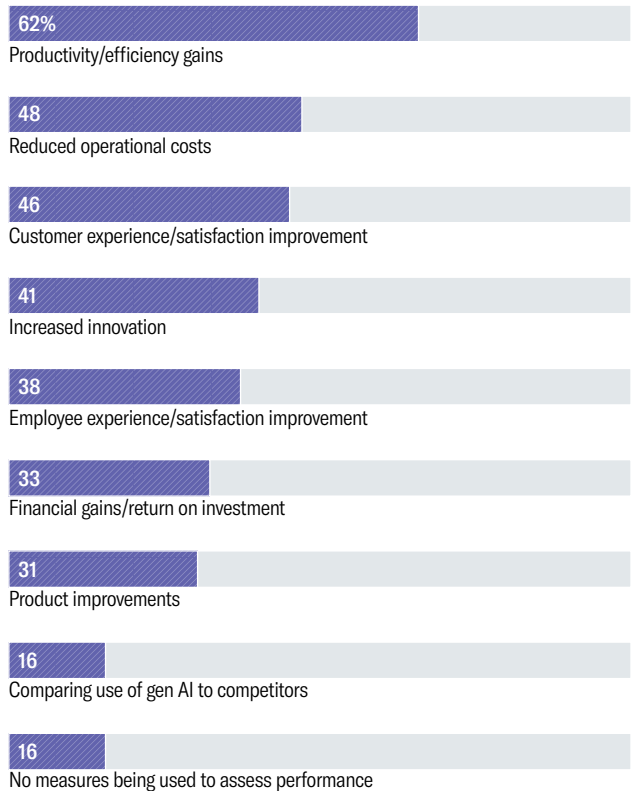
But gen AI's benefits don't always fit the formula for an obvious ROI. For instance, gen AI can slash operational

FIGURE 4

**Metrics for Success**

Gen AI's most measurable impact is with productivity/efficiency gains, followed by reduced operational costs

What measures is your organization using to assess the performance of its generative AI initiatives? Select all that apply. (Among respondents whose organization is using, piloting, or exploring generative AI)



Base: 380 respondents. Not shown: 6% don't know, 2% other.

Source: Harvard Business Review Analytic Services survey, November 2023

costs by replacing salaried workers with sophisticated algorithms. "But what will prevent that from happening in a hurry is that we don't really entirely understand where these technologies can replace people," says Manav Raj, assistant professor of management at the Wharton School, University of Pennsylvania, in Philadelphia. "It's a learning and iterative process."

In fact, sometimes the decision to hold off on deploying gen AI can be just as costly as any up-front investment. For example, when it comes to using digital assistants, the European CIO says he's "not convinced yet that we've seen a return on investment. But the question is, 'If we don't use it,



“Leadership should establish responsible AI—the human-based principles that organizations need to guide their developers in the development and deployment of this technology to minimize unintended consequences that may occur,” says Info-Tech Research Group’s Wong.

are we reducing our efficiency compared to competitors who are using the technology?”

Organizations could have difficulty rallying team members around gen AI when the payoff isn’t always clear. Strong leadership, according to Greenfield, carries the day in such situations. “One of the key success factors we see from leadership is in encouraging gen AI adoption, learning, and experimentation,” he says. “Employees need support in the up-front phases where they are testing and learning and not yet reaping the rewards.”

Good leadership can also activate responsible AI, a growing movement among organizations using artificial intelligence.

“Leadership should establish responsible AI—the human-based principles that organizations need to guide their developers in the development and deployment of this technology to minimize unintended consequences that may occur,” says Wong.

For example, management can foster a corporate culture that prioritizes principles such as fairness, transparency, and accountability to ensure gen AI models not only deliver value but do so in a way that empowers employees and positively impacts society and the environment. Influential managers can also encourage CFOs to develop a higher tolerance for indirect future business outcomes from gen AI. Given the costs associated with launching gen AI initiatives, an immediate ROI isn’t always possible or even likely. However, CFOs who are taught it’s acceptable to extend their timeline on returns could compound their results.

Developing strategies for the deployment and use of gen AI is becoming increasingly important as expenditures on everything from IT infrastructure to employee training increase. While 61% of respondents say their organization is currently making financial investments toward the use of gen AI, 70% expect overall financial investment in gen AI to increase in the next 12 months, making it more important than ever to find ways to derive value from it.

## Cautiously Optimistic

Certainly, there are no guarantees that the rewards of using algorithms to create business value will outweigh the risks. However, there are signs that significant battles are being won in the boardroom—for example, presently among respondents using or exploring gen AI, 65% say that the value they get from investing in gen AI is worth the cost.

But reaching beyond experimentation to scaling and fully operationalizing gen AI systems in ways that deliver continuous and measurable financial returns will require clear objectives so that gen AI goals are aligned with corporate policies. Accurate cost calculations that factor in scalability can prevent financial misfires. The right talent can turn gen AI capabilities into bottom-line benefits. Organizations must also begin to embrace a new perspective on measuring success.

Because for all of today’s preliminary wins, the European CIO says, “When it comes to generative AI, it’s a little bit too early to claim victory.”

## METHODOLOGY AND PARTICIPANT PROFILE

Harvard Business Review Analytic Services surveyed 500 members of the *Harvard Business Review* audience via an online survey fielded in November 2023. Respondents qualified to complete the survey if they were familiar with their organization's current state regarding the use of gen AI and decisions about it.

### Size of Organization

**22%**  
10,000 or more employees

**32%**  
1,000-9,999 employees

**12%**  
500-999 employees

**21%**  
100-499 employees

**12%**  
50-99 employees

### Seniority

**26%**  
Executive management/  
board members

**43%**  
Senior management

**20%**  
Middle management

**11%**  
Other grades

### Industry Sectors

**13%**  
Technology

**12%**  
Education

**10%**  
Business/  
professional services

**10%**  
Financial services

**9%**  
Government/  
not-for-profit

**9%**  
Health care

All other sectors,  
less than 8% each

### Job Functions

**17%**  
General/executive management

**12%**  
HR/training

**9%**  
IT

**9%**  
Marketing/  
communications

All other functions,  
less than 8% each

### Regions

**51%**  
North America

**23%**  
Europe

**13%**  
Asia Pacific

**6%**  
Latin America

**5%**  
Middle East/Africa

**1%**  
Other

Figures may not add up to 100% due to rounding.



# Harvard Business Review

ANALYTIC SERVICES

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