



# MANAGING THE TWO FACES OF GENERATIVE AI

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Over the past eighteen months, generative artificial intelligence (GenAI) has grabbed the attention of organizational leaders. The technology's ability to quickly and autonomously generate media content such as text, images, and audio has unlocked opportunities that were previously too costly or complicated for organizations to pursue. For example, GenAI can help legal teams check whether lengthy contracts meet regulatory standards, support learning professionals in adapting training materials to new languages, and assist marketers by hyperpersonalizing customer engagement to vary timing, channel, and message.

Unlike traditional AI, which focuses on making predictions or classifications based on specific datasets, GenAI uses neural network architectures—such as large language models (LLMs)—to identify patterns in extensive training data and generate outputs that mirror those patterns. This allows GenAI to produce coherent and contextually relevant responses to user instructions. GenAI's perceived ease of use, coupled with its widespread public availability, has caused a growing number of people—from the front line to the boardroom—to embrace GenAI in their personal and professional lives. The combination of this consumerization and GenAI's potential use in novel applications has motivated many organizations to experiment with GenAI.

Our research examined data and technology executives' experiences with such early experiments.<sup>1</sup> We found that effective GenAI management requires that leaders distinguish between two types of GenAI implementations: (1) broadly applicable **GenAI tools** for individual use across myriad purposes, and (2) **GenAI solutions** designed for use by specific groups of organizational stakeholders to achieve strategic business objectives through integration with processes, systems, and offerings. In this briefing, we describe the unique challenges and management principles for each type of implementation.

<sup>1</sup> This research briefing draws from a series of three consecutive virtual roundtable discussions the authors conducted between Q4 2023 and Q2 2024 on the topic of GenAI with seventy data and technology executives representing fifty organizations on the MIT CISR Data Research Advisory Board and from twenty-three semi-structured interviews, each with an executive from an organization on the board, conducted between February and August 2024.

## GENERATIVE AI TOOLS

GenAI tools are broadly applicable by design. They include conversational AI systems (e.g., OpenAI's ChatGPT) and digital assistants embedded in existing productivity software (e.g. Adobe's Acrobat AI Assistant). Versatile and multi-purpose, their use is generally not predefined, but instead identified and refined by users. To date, these tools primarily enhance users' personal productivity, aiding them in tasks such as summarizing documents, brainstorming ideas, and writing first drafts of emails. One executive in our study aptly referred to the benefit of such uses as "productivity shaves," saving users a few minutes of effort with each task.

The use of GenAI tools, however, poses four key challenges to organizations:

1. GenAI tools, based on LLMs trained to predict the most likely sequence of words in a given context, often produce output that is common or "average." As a result, the quality and relevance of the output depends heavily on the specificity and ingenuity of the instructions the user enters to produce the output, called prompts.
2. GenAI tools tend to lack context, contain bias, occasionally present false or misleading information as fact, and are notoriously bad at basic arithmetic. Consequently, users must continuously evaluate a tools' output critically to avoid accepting biased or inaccurate assertions.
3. Unvetted publicly available GenAI tools can bear significant risks, particularly when employees use them for work, a practice known as Bring Your Own AI (BYOAI). The risks can include data loss, intellectual property leakage, copyright violation, and security breaches.
4. GenAI tools are costly. Providing users with licenses to tools from multiple vendors can quickly become expensive once free trials and early adoption incentives expire.

Given these challenges, educating employees is critical for the successful implementation of GenAI tools. Users need to know how to write instructions with precise problem statements, context-specific objectives, and detailed process descriptions.

For instance, a marketer looking to generate campaign ideas should provide the basic topic of the campaign and examples of successful past campaigns, and clarify the campaign’s target audience, desired tone, and intended outcomes. In addition, users need to be able to evaluate whether their use of a tool is consistent with organizational policy and verify the accuracy of the tool’s outputs. They also need to know that even when depicted as free, GenAI tools come with costs to the organization.

## Succeeding with Generative AI Tools

Providing enterprise-sanctioned access to a select number of GenAI tools is step one in creating a safe space for employees to experiment while reducing the allure of BYOAI. It’s a new cost of securing the business. To enable GenAI tool use effectively, we further recommend that leaders:

- **Develop clear usage guardrails and guidelines.** A cross-functional leadership team representing technological, legal, privacy, and governance interests should establish policies on sanctioned and unsanctioned GenAI tool use. Guidelines should specify which tools are permissible (and under which conditions) and articulate associated risks and their potential consequences. For instance, one executive in our study noted that their organization’s GenAI policy centered on data input and output risks, specifying “always okay” uses (anything involving publicly available information) and “never okay” uses (anything involving personally identifiable information, strategic information, or proprietary data), with a clear process for seeking approval from the team managing AI governance when in doubt about a specific use.
- **Invest in ubiquitous training.** Organizations should prioritize establishing what we call AI direction and evaluation (AIDE) practices for employees to benefit from using GenAI tools. AIDE proficiency requires teaching employees to effectively instruct and interrogate GenAI tools, understand the underlying models, and use the tools ethically and responsibly. It also includes training in evaluating model outputs by, for example, improving employees’ domain-specific knowledge or critical thinking skills.
- **Standardize on a select set of vendors.** As several executives pointed out, tracking all alternatives and pricing structures in a growing GenAI tools market is daunting. We recommend forming a cross-functional team of potential GenAI tool users to help the IT organization determine which tools hold the most potential for your organization. As a way to provide access to sanctioned GenAI tools, one organization we studied set up a GenAI “app store” where employees can apply for tool licenses. In exchange, employees are asked to share their “value stories”: narratives that describe how a tool has benefited them.

## GENERATIVE AI SOLUTIONS

GenAI solutions are based on business case-driven development initiatives that address strategic business objectives and create value for specific groups of organizational stakeholders—ideally at scale. For example, a GenAI solution for a call center might use an LLM to process the content and tone of conversations and provide real-time coaching to agents. Such solutions generate financial returns through increased efficiencies or revenue growth, such as improved agent productivity and customer retention in the call center context. Like other business case-driven initiatives, organizations fund GenAI solutions after they meet innovation criteria for end-user desirability, technical feasibility, and business viability and show greater promise than competing opportunities.

While GenAI solutions share similarities with other AI initiatives, the solutions present three unique challenges:

1. As employees across all levels discover ways GenAI can improve processes, augment systems, and enhance offerings, suggestions for new GenAI solutions will proliferate. If this pent-up demand is not addressed, organizations risk the development of “shadow GenAI,” where groups of stakeholders independently pursue unsanctioned GenAI solutions with the help of eager vendors.
2. A few large vendors own and control most of the foundation models<sup>2</sup> that underpin GenAI solutions, retaining rights over model mechanics, distribution, and usage. This opacity complicates organizations’ understanding of the models and their ability to assess biases and predict model behavior, introducing risks such as exploitation of GenAI model behavior, data leaks, and inaccurate outputs. Uncertainty regarding future usage, model performance, and complex pricing models also makes it difficult to estimate long-term operating costs of GenAI solutions.
3. The value that an organization can ultimately realize from GenAI solutions depends on its chosen development approach (see table 1). Each of three approaches—buy, boost, and build—involves trade-offs in transparency, context-awareness, and cost, which development teams must navigate.

Implementing GenAI solutions requires the involvement of stakeholders across the organization. In particular, it takes experts from the functions or domains that the GenAI solutions are intended to enhance to ensure that the solutions create their intended value.

<sup>2</sup> Foundation models are large, pre-trained machine learning models built on extensive datasets, which serve as the basis for rapidly and cost-effectively developing a variety of GenAI solutions.

## Succeeding with Generative AI Solutions

Making GenAI a cross-functional effort is step one in realizing value from GenAI solutions. In addition, we recommend that leaders:

- Establish a formal, transparent GenAI innovation process.** To avoid falling into what one executive called a “GenAI laundry list mentality,” organizations need clear governance structures, early and consistent stakeholder engagement, and a focus on scalable solutions. For instance, the executive’s organization created a senior-level working group to guide its GenAI initiatives, tapping diverse sources like hackathons and external consultants to surface stakeholder ideas for GenAI solutions. By prioritizing rapid prototyping and strategic alignment, the organization ensured its solutions were effectively vetted and scaled, minimizing risks associated with shadow GenAI efforts and maximizing value across the organization.
- Formulate guidelines for GenAI development decisions.** Leaders need to differentiate GenAI development approaches to help teams make informed decisions. Buying GenAI solutions increases speed but with less context, and teams opting for this approach should closely scrutinize vendors’ policies and capabilities. Boosting GenAI solutions is a better approach when there’s a pressing need for high contextualization. Building GenAI solutions permits competitive differentiation through customization, allowing teams to leverage proprietary data to outperform commercial solutions on specific use cases.
- Create a GenAI vendor partnership strategy.** Effective partnerships with GenAI vendors rely on mutual understanding

and long-term collaboration. Vendors benefit from direct feedback on organizations’ willingness to pay and insights into how they will use their offerings to create value, while organizations gain from vendors’ transparency, advice, and custom support. Viewing GenAI vendor partnerships as ongoing relationships rather than one-time transactions fosters adaptability and continuous improvement, benefiting both parties.

## A HOLISTIC GENERATIVE AI STRATEGY TO SECURE TOMORROW’S SUCCESS

GenAI offers leaders not one, but two distinct opportunities for implementation: enabling their workforce with GenAI tools to enhance individual productivity, and developing GenAI solutions that generate financial returns by changing processes, systems, and offerings at scale. Leaders in large organizations should pursue both, creating a virtuous cycle where increased employee awareness and proficiency with GenAI tools drives new GenAI capability building and inspires innovation with GenAI solutions.

For those early in their GenAI journey, the best starting point is the targeted adoption of a few GenAI tools from trusted vendors, accompanied by hands-on training to improve AIDE practices and close oversight to mitigate organizational risk and costs. Those further along in their journey should shift their focus to developing those GenAI solutions that most contribute to strategic business objectives. Buy or boost GenAI solutions when you need to move fast and gain competitive parity. Opt to build when you need a differentiated GenAI solution that is hard to imitate and provides a competitive advantage.

By approaching the two faces of GenAI in this manner, you will ensure that today’s experimentation lays a solid foundation for future value realization.

**Table 1: Generative AI Solution Development Approaches**

|              |   |
|--------------|---|
| <b>Buy</b>   | The vendor provides, runs, and maintains the solution and its model, allowing quick GenAI adoption without having to invest in model development or fine-tuning. Pricing is typically usage-based (e.g., per user, per token). Off-the-shelf GenAI solutions are often opaque and geared to a narrow context (e.g., a function, an industry).   |
| <b>Boost</b> | The vendor provides, runs, and maintains the model, but the organization enhances it to create a solution—often using proprietary data. Common boosting approaches include fine-tuning the model to perform better in specific contexts; and employing Retrieval Augmented Generation (RAG), which appends relevant contextual data to user prompts. RAG requires that data scientists and domain experts prepare domain-specific data, convert it into numerical representations (called “vectors”), refine retrieval algorithms, and provide feedback on the accuracy and relevance of generated output. While RAG provides more context to otherwise opaque models, it increases prompt length and thus usage costs. |
| <b>Build</b> | The organization fully assumes responsibility for developing, running, and maintaining the solution and its model. Fully training a GenAI model from the ground up is expensive, so most organizations instead opt to fine-tune an open-source foundation model. This approach lowers usage costs but requires significant up-front computational investment and advanced data monetization capabilities: data management, data platform, data science, acceptable data use, customer understanding, and AI explanation. <sup>3</sup>   |

3 For more on advanced data monetization capabilities, see B. H. Wixom, I. A. Someh, and C. M. Beath, “[Building Advanced Data Monetization Capabilities for the AI-Powered Organization](#),” MIT CISR Research Briefing, Vol. XXII, No. 6, June 2022.

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