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# Early adoption of generative AI in commercial life sciences

Pilots of generative AI commercial use cases at biopharmaceutical and medtech companies have been promising, but success at scale hinges on a clear—and budgeted—gen AI strategy and custom solutions.

*This article is a collaborative effort by Asli Aksu, Sherin Ijaz, Nicholas Mills, Rukhshana Motiwala, Ashley van Heteren, and Oscar Viyuela Garcia, representing views from McKinsey's Life Sciences and Healthcare Practices and McKinsey Digital.*



**Generative AI (gen AI)** is poised to transform nearly every aspect of the life sciences (LS) industry. The McKinsey Global Institute estimates that gen AI could generate \$60 billion to \$110 billion annually in economic value for pharmaceutical and medtech companies, with \$18 billion to \$30 billion of that value attributed to commercial functions alone.<sup>1</sup>

As biopharma commercial leaders face intensifying competition, declining effectiveness of traditional sales models, evolving patient expectations, and increasing complexity in market access and pricing,<sup>2</sup> gen AI's ability to rapidly produce new and customized text, images, and video makes it a potentially disruptive force in marketing and sales. Commercial leaders could use the technology to generate consumer insights, create targeted marketing materials, and transform healthcare interactions through automated chatbots and virtual assistants acting as pharma representatives.

At the end of 2023, we surveyed more than 100 pharmaceutical, biotech, and medical-device leaders about their activity related to commercial applications of gen AI.<sup>3</sup> In this article, we share the important results and insights from that survey and a course of action to consider.

## Results of the survey

Our survey of LS leaders yielded the following four insights:

- **At-scale adoption remains limited.** Most commercial LS organizations (74 percent) have experimented with five or fewer gen AI use cases.
- **The early impact is promising.** Commercial leaders reported an average improvement of about 30 percent in patient and healthcare personnel (HCP) engagement and in satisfaction scores when they applied gen AI to insight generation and content personalization.

Increased efficiency is the most common lift in metrics across all use cases.

- **Purposeful prioritization is a major differentiator.** Commercial LS leaders with defined gen AI strategies and dedicated budgets were twice as likely to see meaningful results—such as increased revenue, positive HCP perception, higher patient feedback, and improved efficiency—than those without them. Companies with broad portfolios of use cases (including insights and HCP and patient interaction) reported the largest positive impact of gen AI.
- **Companies plan to build their own gen AI capabilities.** Although most LS companies currently use off-the-shelf products, 79 percent plan to develop their own gen AI solutions tailored to their unique requirements.

## Early-stage adoption of gen AI in commercial LS

Our survey was designed to find out how widely gen AI is being used, what types of applications are being explored, and what the impact of the technology is, focusing on the advantages of customized solutions over generic ones.

According to our findings, 13 percent of commercial LS leaders report that their organizations have not begun experimenting with gen AI, while 61 percent say their organizations are in the early stages, having tested five or fewer use cases.

Given that the models that underpin gen AI applications are still being improved, some leaders are hesitant to implement the technology at scale. Chief among their concerns is the perception that the technology is “not truthful enough” (given the potential for hallucinations) and “not understandable (a black box) and too complicated.”

<sup>1</sup> “Generative AI in the pharmaceutical industry: Moving from hype to reality,” McKinsey, January 9, 2024.

<sup>2</sup> “Modernizing the biopharma commercial model to maximize patient value,” McKinsey, March 20, 2024.

<sup>3</sup> McKinsey Life Sciences Commercial Survey, December 2023.

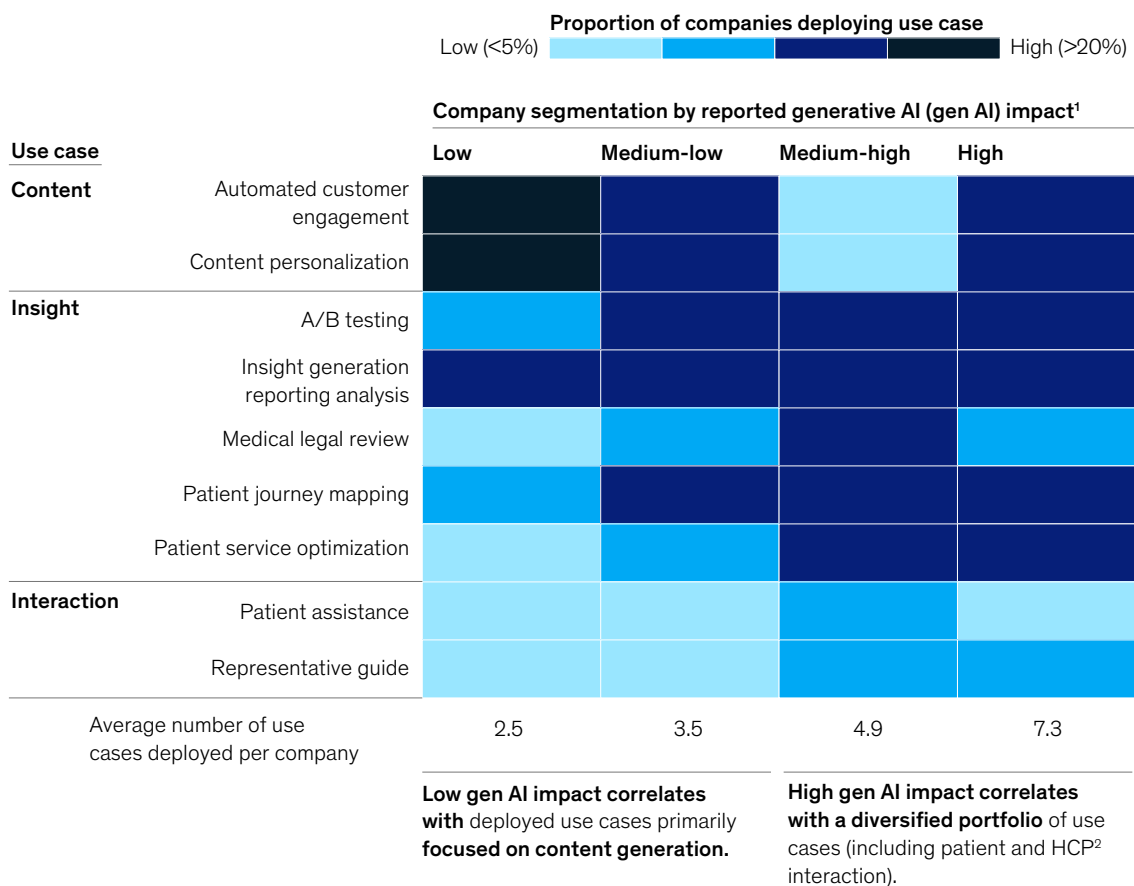
### Type and impact of use cases of gen AI in commercial LS

Commercial LS entities are exploring gen AI across three primary areas: insight generation, content generation, and HCP and patient interactions (Exhibit 1). Insight generation and summarization use cases aim to enhance treatment and diagnosis by enabling a better understanding of patient and HCP journeys. Content generation focuses

on automating and personalizing engagement materials. HCP and patient interaction use cases seek improvements through advanced chatbots and automated systems. Although nearly 70 percent of leaders have seen their organizations explore insight generation, only 50 percent have ventured into content generation and only about 36 percent into improving HCP and patient interactions.

Exhibit 1

### Life sciences companies with the largest reported positive impact from generative AI have a more diversified portfolio of use cases.



<sup>1</sup>Segmentation in quartiles of reported impact (understood as lift in metrics related to efficiency, healthcare personnel and patient satisfaction, overall brand sentiment, etc).

<sup>2</sup>Healthcare personnel.

Source: McKinsey Life Sciences Commercial Survey, December 2023

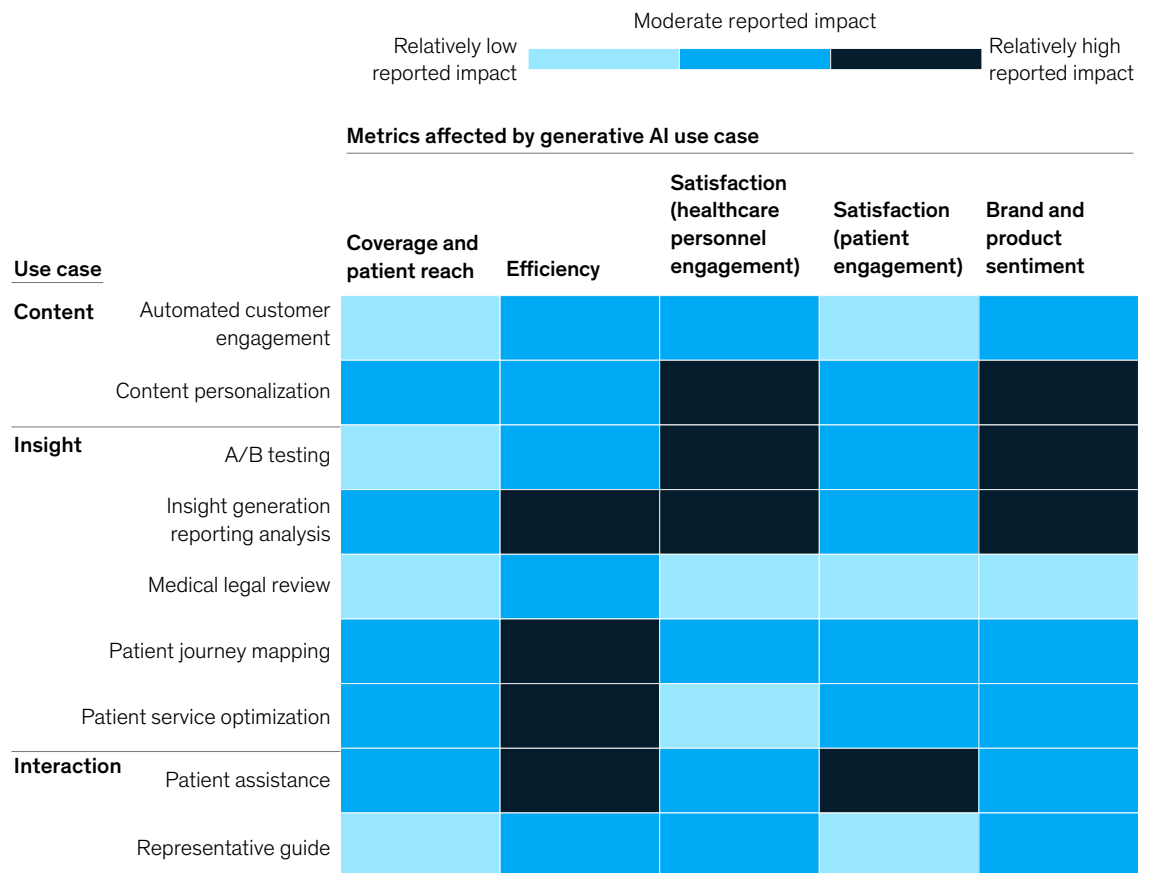
### Impact of gen AI adoption

Our research reveals considerable differences across use cases in the impact of gen AI adoption (Exhibit 2). Across all use cases, efficiency is the most common impact type, followed by HCP engagement satisfaction and brand and product sentiment. To date, less impact has been reported for patient reach or engagement.

The largest impact we observed was an increase of more than 30 percent in HCP engagement quality from the implementation of gen AI to generate insights and personalized content. We likewise observed a nearly 30 percent increase in patient engagement and satisfaction when gen AI was used for patient services insights and patient interaction chatbots.

Exhibit 2

## The observed impact of generative AI in life sciences commercial applications varies by impact category and use case.



Source: McKinsey Life Sciences Commercial Survey, December 2023

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LS companies that are seeing the lowest total impact are focusing primarily on content and insight generation and are more likely to use off-the-shelf solutions. Companies seeing the highest total impact are focusing on interaction use cases, embedding gen AI across their go-to-market value chain for maximum effect.

#### **Customized versus off-the-shelf gen AI solutions**

Organizations that use customized gen AI solutions report double the impact of organizations using off-the-shelf options, such as ChatGPT or LLaMA. Currently, 64 percent of LS companies rely on off-the-shelf solutions and only 36 percent opt for customized developments. The relatively higher adoption of off-the-shelf solutions correlates with the observation that only 8 percent of LS organizations have allocated more than \$5 million for gen AI. However, future projections indicate a shift: 79 percent of companies plan to develop gen AI solutions tailored to their unique requirements, and 21 percent intend to continue using off-the-shelf solutions.

#### **The imperative for a gen AI strategy**

Notably, our research shows that commercial LS leaders whose companies have a strategy and dedicated budget in place for gen AI are twice

as likely as those without a strategy to see real impacts on their businesses—such as increased revenue, improved HCP perception, enhanced patient impressions, and greater efficiency. This outcome is consistent across companies of all sizes. Even though 57 percent of LS leaders recognize the importance of having a gen AI strategy as an organizational priority, only 45 percent believe their organization has a clearly defined one.

Surveyed LS companies whose gen AI budgets exceed \$1 million report that the technology's impact is nearly twice (roughly 1.7 times) that of companies with smaller budgets. The adoption disparity between small biotech firms and large pharmaceutical companies is also notable: only 28 percent of small biotech firms (with revenues less than \$1 billion) have implemented a gen AI strategy, compared with 58 percent of large pharmaceutical companies.

Although most commercial LS leaders report that their companies are advanced in data and analytics, about 40 percent of all respondents admit to having limited technical knowledge of gen AI and large language models. Despite that, about two-thirds of LS companies are piloting gen AI applications without external technical support. Of those that seek partnerships, many

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do so either with technology firms (28 percent) or with marketing agencies investing in gen AI capabilities (16 percent). Leaders primarily evaluate partnerships based on the partner's ability to tailor solutions to specific contexts or regulatory requirements, to ensure reliability and accuracy, and to integrate the solution into new workflows.

### Addressing the talent gap

Nearly 75 percent of commercial LS leaders plan to hire ten or fewer gen AI specialists—primarily for technical roles, such as data scientists, data engineers, and machine learning engineers, and secondarily for operational positions. The current and projected dearth of gen AI talent at LS organizations underscores a need for workforce development and upskilling as the technology becomes increasingly

intertwined with company operations.<sup>4</sup> The talent challenge will become more acute as more organizations shift toward developing or customizing their own gen AI solutions.

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Generative AI has the potential to revolutionize commercial life sciences, enhancing engagement, efficiency, and innovation. These survey insights underscore the need for strategic planning, investment, customized solutions, and talent development to successfully harness this technology. Commercial functions that do so can unlock significant value, improve patient care, and drive operational excellence.

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<sup>4</sup> "The human side of generative AI: Creating a path to productivity," *McKinsey Quarterly*, March 18, 2024.

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