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Is Generative AI changing the game for medtech?

Deloitte research suggests while GenAI has started delivering value, its potential is far greater

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Executive summary

Across industries, artificial intelligence (AI) and Generative AI (GenAI) discussions are moving from potential to value realization.¹ For medtech companies, this value can be in the form of cost reductions, cost avoidance, and new revenue generation.

To assess where medtech companies have realized value² from AI and GenAI and what could be next, the Deloitte Center for Health Solutions surveyed 85 leaders from medtech organizations during the summer of 2024 and conducted follow-up interviews. We found that:

- AI and GenAI have begun to deliver value across functions, with 42% of surveyed executives reporting benefits in product development and 35% in IT and cybersecurity functions.
- GenAI could enable medtech companies to achieve cost efficiencies of 6% to 12% of their total revenue in the next two to three years. This could be in the form of cost reductions, cost avoidances, and other benefits. For a medtech company with \$20 billion to \$26 billion in revenue, this translates to an estimated \$1.2 billion to \$3.2 billion.

However, using AI and GenAI in isolation may not drive this transformative value. Adopting a *string-of-pearls* approach—integrating multiple GenAI use cases with other AI technologies, data, and digital tools—is important for achieving cost efficiencies and other benefits. This requires appropriate “building blocks” to scale AI and GenAI, including creating an enterprise ambition for AI use and operating structures such as a Center of Excellence. These should be accompanied by new ways of working, governance for responsible and ethical AI use, and proactive communication of an AI value narrative.



AI and GenAI have started to deliver value to medtech companies across functions

Using AI to transform processes is not new to medtech organizations (see sidebar, “AI in action at medtech companies”). But beyond this anecdotal evidence at the organizational level, the industrywide impact of AI and GenAI is not well known. Our survey results aim to bridge this gap by illustrating where and how these technologies have affected medtech companies.

Our research suggests that, overall, medtech companies have moved quickly to leverage GenAI’s capabilities. Fifty-seven percent of surveyed leaders reported that their organization is implementing or scaling GenAI use cases or “quick wins” that have provided benefits across functions. The pace of GenAI adoption also appears to have accelerated the use of other AI, as our survey data indicates.

“Our strategy is to utilize AI and GenAI in our products and across all functions as much as possible.”

—VP, large medtech company

AI in action at medtech companies

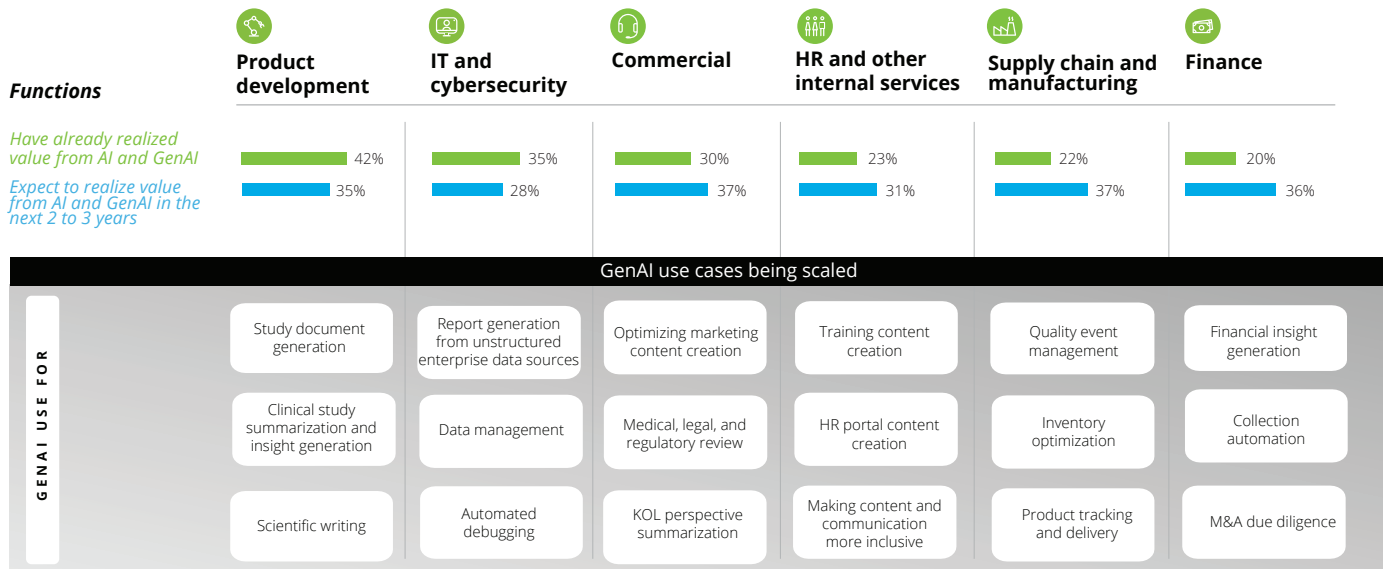
Medtech companies have used AI to save time, reduce costs, avoid additional expenses, and create revenue. Here are some examples:

Digital asset procurement optimization: Siemens Healthineers developed an AI-powered digital asset management repository, enabling its 60,000 employees to search for, use, and reuse digital assets, such as stock imagery, for marketing. This initiative saved the company an estimated EUR 3.5 million by reducing the need to purchase new digital assets.³

People analytics and workforce development: Johnson and Johnson leveraged AI to transform and modernize its HR operations. AI-driven models predict employee attrition based on industry trends, performance, and career progression. Machine learning (ML) is applied to human capital data to assess the state of skills in the workforce and help create personalized development plans and learning curricula for employees.⁴

Personalized technology: Meticuly uses AI and 3D printing to deliver custom medical implants within two to seven days. Meticuly’s ML algorithms analyze the patient’s natural bone structure, including any defects or irregularities and the impacted area, to design a bespoke implant. Such implants could reduce the likelihood of interoperative challenges.⁵

Figure 1: Value realized and expected from AI and GenAI use across functions



Q. In which of the following areas has your organization realized value from the use of AI including GenAI? In which of these areas does it expect to realize value in the next 2 to 3 years? Respondent to select only one option. [N=85]

Q. Where has GenAI helped your organization to realize benefits? Is your organization scaling the use of GenAI for this purpose? Please select all that apply. Respondents answered this question based on their visibility into GenAI use across functional areas as assessed by our screener questions. Figure shows the top 3 GenAI use cases being scaled across functional areas.

Commercial [N=58], Supply chain and manufacturing [N=63], R&D [N=69], Finance [N=54], HR and other internal services [N=55] and IT and cybersecurity [N=68]

Respondents reported that their organizations have generated the greatest value from AI and GenAI in product development (42%) and IT and cybersecurity (35%) functions (see figure 1). For product development, medtech companies have used AI for concept design and prototyping.⁶ Beyond device design, GenAI has benefited some organizations in summarizing scientific literature and drafting trial documents, such as vendor contracts and site checklists.

For IT and cybersecurity, organizations have used GenAI to generate high-quality code and improve data management processes. This includes creating meta labels, cleaning data, and anonymizing data to enhance security and usability.⁷

While close to one-third of surveyed leaders said they have already realized value from AI and GenAI across functions, another third expects to realize value across most functions over the next two to three years. In commercial operations, AI could help analyze sales and customer data to provide the next-best engagement recommendations to sales teams and improve conversion rates. Leveraging AI-driven platforms could accelerate the creation, review, and deployment of marketing and sales content to cut marketing spending.⁸ One interviewee reported that his organization is using AI

chatbots to automate order intake and solve customer queries. Given its contextualization abilities, GenAI could further improve self-service capabilities for medtech customers across digital channels.⁹

As part of digitalized supply chains, AI could automate activities such as supplier checks and management of quality events while optimizing inventory management, distribution, and warehousing. For a faster path to net-zero, AI could provide insights to optimize capital investment and energy usage and cost-effectively reduce emissions.¹⁰

AI can also assist as a self-service partner for business leaders to support agile financial decision-making. For instance, AI could provide quick access to complex financial insights such as scenario analysis for budget planning. Continuous financial data monitoring using AI and advanced analytics could also help uncover valuable investment and savings opportunities, which could improve margins.¹¹

GenAI could help medtech firms achieve cost-efficiencies of up to 12% of their revenue

By effectively deploying GenAI and other AI technologies, medtech companies could achieve cost efficiencies, including cost reductions, cost avoidances, and other benefits, ranging from 6% to 12% of revenue. For instance, a large medtech company with \$20 billion to \$26 billion in revenue could realize cost efficiencies of \$1.2 billion to \$3.2 billion through AI implementations across functions in the next two to three years (figure 2). Actual efficiencies gained could vary depending on the scale and integration of AI within an organization.

To arrive at these estimates, we analyzed anticipated cost savings percentages from AI and GenAI use across the various categories—selling, general, and administrative costs (SG&A); R&D expense; and cost of goods sold (COGS)—as reported by surveyed medtech leaders. We applied these percentages to publicly reported financial data from the top 10 medtech companies by revenue in 2023.¹²

Overall, our survey respondents anticipate AI and GenAI to reduce SG&A costs by 7% to 19% over the next two to three years, which could benefit the commercial and shared services functions, including HR, finance, and IT. For a large medtech company, this could mean an estimated savings of up to \$1.5 billion through efficiency gains and vendor cost optimizations. Similarly, a large medtech company could save up to \$1.4 billion (5% to 12%) in COGS by applying AI to activities such as predictive maintenance, contract creation, and vendor management in supply chain and manufacturing.

As discussed previously, more surveyed leaders reported realizing value from AI and GenAI in product development than other functions. According to survey respondents, applying AI and GenAI could save up to 20% of R&D costs, translating to \$0.3 billion in savings for a large medtech company over the next two to three years.

Figure 2: Estimated potential efficiency gains via AI use for a large medtech company in the next 2-3 years

Type of costs	Top 10 medtech firm average cost*	Potential savings % from use of AI in the next 2-3 years*	Potential savings estimate	Functional areas likely to benefit
Selling, general and administrative costs (SG&A)	\$7.2B	7%-19%	\$0.5B - \$1.5B	Commercial, Shared services
Cost of goods sold (COGS)	\$11.7B	5%-12%	\$0.6B - \$1.4B	Supply chain and manufacturing
R&D costs	\$1.5B	7%-20%	\$0.1B - \$0.3B	Product development
Estimated potential savings for a large medtech company in the next 2-3 years			\$1.2B - \$3.2B	

Methodology:

* Potential dollar savings are based on applying savings estimates collected through our survey to the average of different costs—R&D expenses, cost of goods sold (COGS), and selling, general, and administrative (SG&A)—reported in the financial statements of the top 10 medtech companies in 2023. Cost savings percentages applied are based on interquartile ranges from the survey data.

Q. To your best estimate, what share of cost savings could AI including GenAI enable your organization to achieve in the next 2 to 3 years? Please pick the % of impact AI has had across the following cost categories. (N=85)

However, using AI and GenAI in isolation may not drive transformative benefits. Medtech companies may need to undertake a *string-of-pearls* approach. By stringing together multiple workflows through GenAI and other AI, data, and digital technologies, companies could transform entire processes. This approach creates a series of business process enhancements that build on

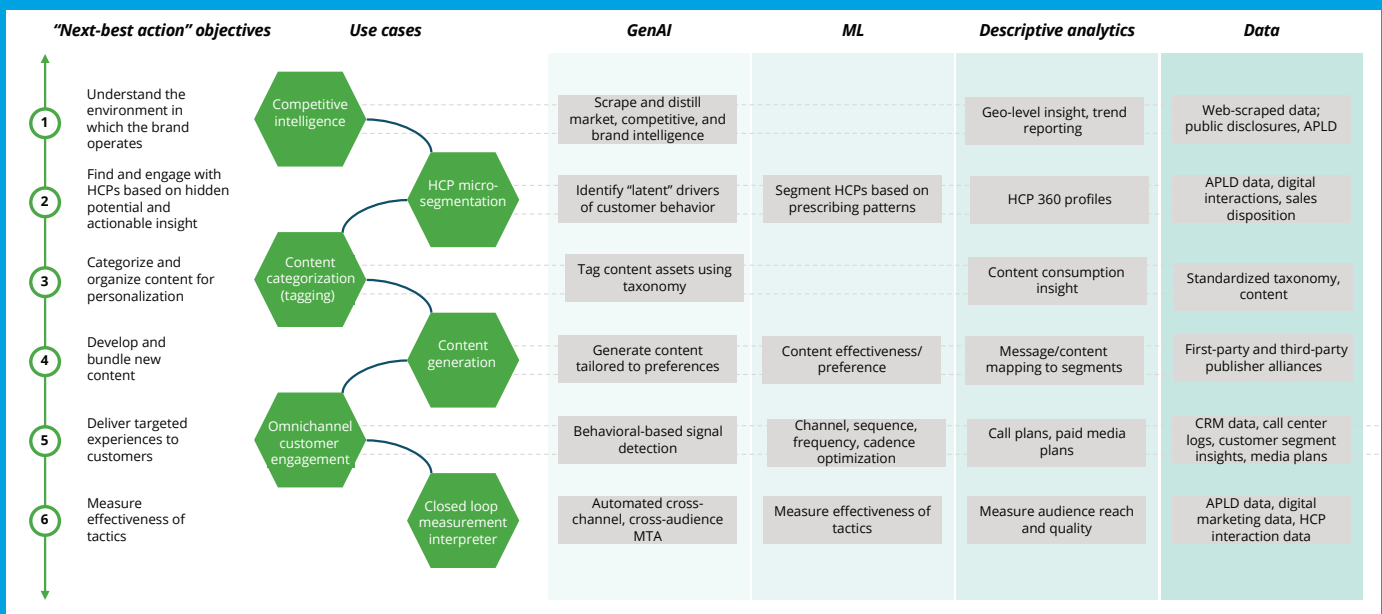
one another to drive efficiencies and compound value (see sidebar, “Enhancing health care practitioner engagement with a *string-of-pearls* approach”). Such an approach can be applied to processes across functions—from R&D to commercial and shared services.

Enhancing health care practitioner engagement with a *string-of-pearls* approach

A *string-of-pearls* approach with GenAI at the core could enable companies to deliver appropriate content to health care practitioners (HCPs) through appropriate channels at an appropriate time.

As part of this approach, GenAI and ML could analyze prescriptions, sales data, and digital interaction data to micro segment and target HCPs for engagement. Based on this segmentation and AI-driven insights on content consumption patterns, GenAI could categorize, organize, and create new content. ML algorithms could then determine the sequence and frequency of content delivery across channels and measure the effectiveness of these tactics to optimize omnichannel engagement (figure A).

Figure A: Orchestrating omnichannel engagement with GenAI



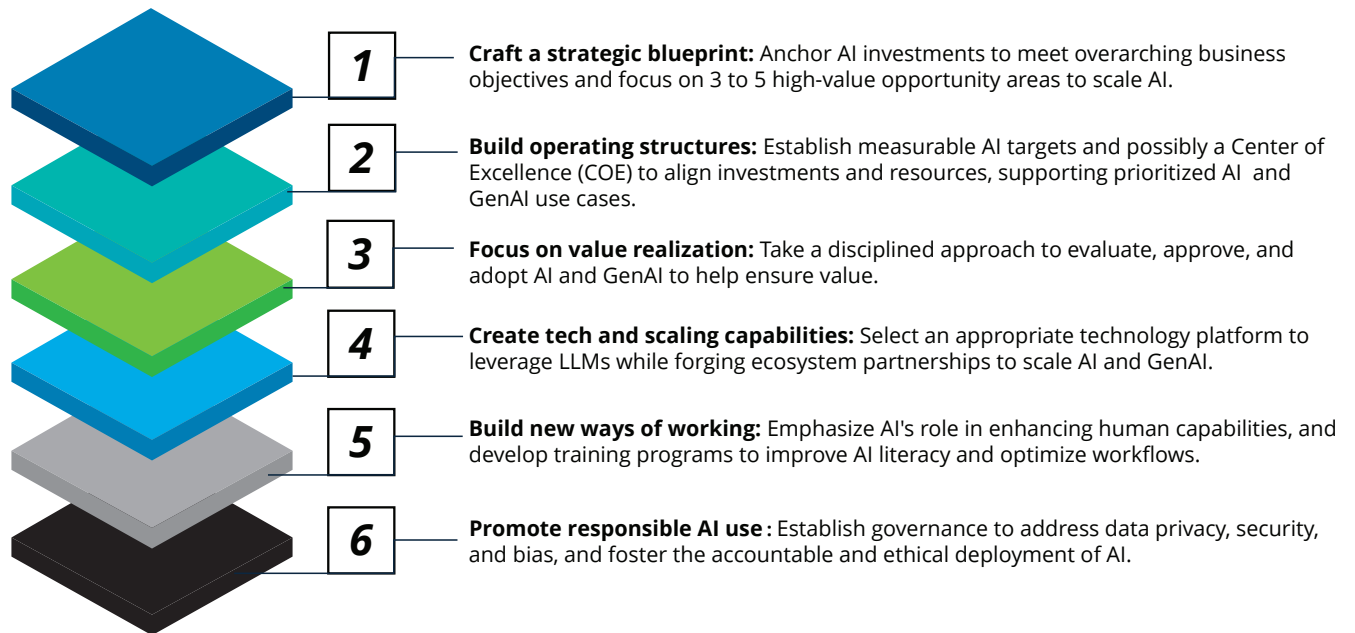
Source: Deloitte analysis

Building blocks to maximize value from AI and GenAI

Interviewees highlighted that though many medtech organizations have kick-started their AI and GenAI journey, they may just be scratching the surface. As one interviewee commented, “I feel we are

leveraging less than 10% of AI’s potential.” We outline six key building blocks for medtech companies to leverage AI and GenAI to a greater extent (figure 3).

Figure 3: Building blocks for leveraging AI and GenAI



Source: Deloitte analysis

1. Craft a strategic blueprint

Scaling AI across the enterprise may no longer be a question of “when” but “to what extent.” Medtech companies should view AI and GenAI investments as core enablers of their enterprise strategy rather than as experimental projects. While executing a multitude of use cases can deliver value, a focus on depth versus breadth could be more beneficial.

Action steps:

- **Frame a strategic blueprint:** Define the business ambition for AI use and anchor investments to meet short- and long-term business goals.
- **Identify bold plays:** Determine three to five high-value opportunity areas where AI and GenAI use could provide the most value and focus on scaling for impact.

2. Build operating structures

Building distinct operating structures, such as establishing an AI Center of Excellence (COE), could help medtech companies cross-leverage talent and resources to weave AI and GenAI into their business. Such COEs, while not necessarily a requirement for success, should enable prioritizing and managing AI and GenAI investments and should include an explicit capability for value realization.

Action steps:

- **Source and prioritize use cases:** Identify and prioritize a portfolio of AI and GenAI use cases relevant to identified opportunity areas.
- **Create a roadmap:** Develop a plan to align investments and resources to support use-case development and scaling.
- **Set measurable AI targets:** Build explicit metrics of value to be captured through use-case enablement. Assigning measurable targets to AI leaders can further promote AI advocacy and ensure accountability.

3. Focus on value realization

Sustaining the enthusiasm and momentum to scale AI requires a disciplined approach to assessing and making appropriate investments and communicating their value. AI appears to be just another step on the digital transformation path for companies. By focusing on building and communicating an ongoing value narrative from AI use, companies could prevent disillusionment, especially as newer digital technologies become the next “shiny thing.”

Action steps:

- **Track and realize value:** Create mechanisms to measure outcomes and optimize investments while assessing progress toward AI ambitions.
- **Articulate an enterprise value story:** Create and promote a narrative of AI impact on identified opportunity areas to relevant stakeholders—from the board and CEO to business leaders.

4. Create technology and scaling capabilities

Build enterprise architecture that collates key components required to quickly create and deploy AI and GenAI applications, tools, and capabilities. Such architecture should include access to open-source and proprietary platform capabilities to utilize large language models, sandbox environments, and common solution archetypes.

Action steps:

- **Determine an appropriate platform(s):** Select a cost-effective platform, or platforms, to support capability development (e.g., semantic search, information extraction, classification, simulation exercises) tailored to execute multiple GenAI use cases.
- **Build ecosystem partnerships:** Identify and work with industry consortia and working groups as they emerge. Continuously evaluate platforms and partnerships to enhance AI and GenAI capabilities and infrastructure.

5. Build new ways of working

While initial experiments may have progressed, large-scale AI deployment involves a stronger focus on bridging the trust gap with AI, which GenAI could likely exacerbate. As one interviewee pointed out, “We want to make AI a part of our culture and part and parcel of the way we do things going forward.” This involves fostering willingness among business users by clearly demonstrating value, providing adequate training, and creating guardrails for the responsible use of AI and GenAI tools.

Action steps:

- **Focus on human augmentation to encourage adoption:** During rollouts, demonstrate how AI enhances human capabilities rather than just automates tasks.
- **Build AI fluency:** Develop training programs to improve AI literacy, covering AI concepts, applications, and limitations. Optimize workflows to ensure seamless AI integration and user proficiency.

6. Promote responsible AI use

Medtech companies should establish clear guidelines and promote ethical practices around AI to help ensure responsible deployment. The string-of-pearls approach can only be effectively leveraged if companies ensure AI use is harmonized with the evolving regulatory environment.

Action steps:

- **Establish ground rules:** Govern the ethical use of AI by addressing issues such as data privacy, security, and bias.
- **Shape internal governance:** Enable business users to understand and contend with risks from AI use (e.g., data security and privacy) and model outputs (e.g., hallucinations and biases, lack of transparency).
- **Promote transparency and accountability:** Clearly document processes and communicate openly about AI model/tool capabilities and limitations.

Conclusion

The medtech industry appears to be at an inflection point—scaling AI and GenAI for transformation is important. Organizations should consider making “bold plays” that integrate these technologies into their operations.

In upcoming publications, we will focus on how medtech companies can execute bold plays through a *string-of-pearls* approach and the impact these could have on functions such as R&D, supply chain, and commercial.



Endnotes

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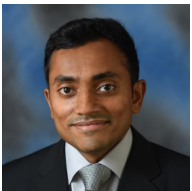
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