

Opinion:

Unlocking the power of AI in MedTech

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In just two months, ChatGPT attracted an impressive 100-million users, far exceeding the record for the fastest user registration on any platform to date.¹ This rapid adoption shows the widespread recognition of Artificial Intelligence’s (AI) potential across various industry sectors – including MedTech.

INTRODUCTION

In the MedTech industry the potential of AI is significant, promising substantial benefits for people’s health. AI opens doors to generate value in new ways, positioning MedTech firms at the forefront of transformative advancements in healthcare delivery and patient outcomes.

However, as companies navigate the initial stages of integrating AI, they face numerous challenges along the way. The technology’s wide-ranging applications and the industry’s strict regulations, still catching up to AI advancements, make it tough to pinpoint the best starting point. These uncertainties prevent some companies from adopting AI.

Generative AI is projected to grow faster in healthcare than any other industry, with a compound annual growth rate of 85% through 2027, to reach a total market size of \$22 billion.²

At Arcondis, we believe the time to act is now. Companies that hesitate are missing out on the opportunity of being early adopters in a technology projected to grow faster in healthcare than any other industry. By postponing the adoption of AI, companies risk falling behind in long-term efficiency gains.² Embracing the technology will enable them to automate simpler tasks and prioritise their focus on innovation and tackling complex problems.

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AI can analyse patient health data to improve rapid diagnosis and treatment planning. The COVID-19 pandemic, coupled with the increasing shortage of healthcare workers globally has accelerated the adoption of AI-based technologies in diagnostics, patient management, and workflow optimisation within healthcare settings.

VALUE CREATION

How to distinguish traditional AI from Generative AI

Traditional AI analyses historical data to uncover patterns and insights. Generative AI takes it a step further and focuses on creating novel content using various types of training data such as text, images, audio, video, genomic data, and even electroencephalogram (EEG) signals.

Each type of data undergoes processing through a specific mathematical algorithm known as a machine learning model. For instance, text data is processed by Large Language Models (LLMs), which are the backbone of tools like ChatGPT. The impact that these technologies can have in the value chain of MedTech companies is significant and includes:

- Higher levels of personalisation in customer interactions.
- Enhanced efficiency achieved by minimising manual labour and accelerating processes.
- Utilising enterprise data more comprehensively and efficiently, thereby strengthening decision-making and problem-solving capabilities.
- Enhanced creativity, facilitating the development of innovative design and product development.

BENEFITS ACROSS THE ENTIRE VALUE CHAIN

Generative AI has the potential to impact every aspect of the value chain. For the purposes of this article, we will be focusing on high impact use cases with rapid implementation potential. These are the priorities when starting to implement Generative AI tools in the company value chain. This approach allows companies to prioritise initiatives that offer rapid benefits, providing a foundation for future growth and enhancing organisational capabilities and confidence.

1. Operations

AI-powered image recognition can significantly enhance quality control efficiency in the operations of MedTech companies. By leveraging advanced computer vision algorithms, this technology identifies defective items during manufacturing, ensuring products meet high standards from the outset. With the ability to predict demand and optimise inventory management, AI also streamlines procurement processes. These integrated tools not only facilitate regulatory compliance but also streamline

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production, ensuring high-quality products are consistently delivered with efficiency.

2. Sales and marketing

In today's sales world, face-to-face communication is becoming less common, emphasising the need for strong digital skills to connect with customers and leads. By integrating AI into customer relationship management systems, companies can leverage different data sources, including reports from client visits, past interactions, and online information. This ensures that interactions with customers

feel personal and tailored to their needs. By analysing customer data and behaviors, AI enables companies to create targeted and personalised marketing campaigns that resonate with every individual's preference and interest.

3. R&D

Generative AI is proving to be a game-changer in software development, a sector where expertise is scarce and salaries are inflated, often constituting more than 50% of a company's total expenses. By introducing AI tools like GitHub Copilot X, which has been trained on an extensive dataset



of over a billion lines of code, software developers can now translate natural human language into code suggestions. Early tests have shown a remarkable 55% increase in task completion rates, promising significant cost savings. Generative AI platforms can also generate value by creating innovative solutions to complex problems, automating ideation processes, and increasing creativity in the research phase.²

4. Post-sales

As MedTech companies experience growth, the number of questions and queries customers have regarding products also increases. Companies tend to rely on engineers to provide detailed product information to customers, which often means scanning through technical documentation, a time-consuming process which takes engineers away from value-generating activities.

To tackle this challenge, AI can step in by developing an interactive chatbot for customers to interact with as a first point of contact. The chatbot efficiently directs clients to the relevant technical documentation, saving valuable time for both customers and the company, especially since up to 30% of post-sales customer queries originate from user errors that the chatbot can easily resolve by guiding customers to the correct information². In the case where the chatbot is unable to address the query, it forwards it to the post-sales department for further assistance. At Arcondis, we deploy similar solutions for our clients, including Schiller, that relieves strain on their support teams while providing scalable solutions for future needs.

5. AI as a product

Apart from the benefits this technology offers across the value chain, Generative AI can itself serve as a product, directly influencing people's health. Already, numerous companies are emerging to offer such solutions, which primarily:

- Improve image quality in medical imaging and enhance diagnostic precision.
- Automate interactions between patients and healthcare providers to enable physicians to invest more time in patient care.
- Provide support throughout medical procedures, assisting physicians in performing surgeries with greater success.

Generative AI offers great value as a stand-alone product within the MedTech sector, yet it also comes with notable considerations. MedTech executives are right to filter between mainstream media hype and the actual risks and challenges inherent in AI technology. The “black box” nature of AI raises concerns around transparency and explainability, setting it apart from traditional MedTech technologies.⁴

RISKS ASSOCIATED WITH AI – LEGAL AND REGULATORY IMPLICATIONS

Determining liability in the event of AI errors or harm to patients poses a regulatory dilemma. Add to this the potential bias in AI algorithms which can enhance disparities among different demographic groups, and some business leaders might lean toward a wait-and-see approach. These are critical considerations MedTech companies should bear in mind during technology development and implementation, yet it should not act as a barrier to its adoption. The main challenges that Generative AI adoption poses are:





Data Access:

Developing robust Generative AI solutions requires seamless and efficient access to high-quality data. This involves integrating and managing data from diverse sources and various formats, complicating effective data utilisation.

Security:

Handling sensitive data securely while complying with strict privacy regulations is crucial. This challenge includes implementing robust security measures to protect data from unauthorised access and breaches, particularly in fields like healthcare where data confidentiality is paramount.

Regulatory Compliance:

Meeting regulatory standards for Generative AI applications can be complex and time-consuming. Navigating evolving regulatory frameworks and ensuring adherence to these standards is essential for the legal and ethical deployment of AI technologies.

Accuracy:







Providing accurate and reliable information is vital, especially in critical fields like healthcare. The challenge lies in developing AI models that produce precise and interpretable outputs, balancing high performance with transparency and reliability.

These challenges contribute to the lagging development of legal and regulatory frameworks, a common

phenomenon with disruptive technological advancements.

HOW TO UNLOCK THE POWER OF GENERATIVE AI IN MEDTECH

For MedTech companies embarking on or planning a commercial Generative AI journey, the best way to start is by identifying and prioritising potential use cases, particularly scenarios that doesn't affect patient or user safety. **Start Now. Start Lean. Think Big.**

-  **Start now**
-  **Start small and agile**
-  **Learn and scale**
-  **Empower your teams**
-  **Share success internally**
-  **Align with the company strategy**

These use cases offer significant opportunities for internal process efficiency and external value without impacting the end user directly. Examples include streamlining administrative tasks, improving data management, or enhancing supply chain operations. These applications can provide immediate benefits to the organisation, boosting efficiency and productivity. The key advantage is that these simple use cases do not need to be validated, making them quicker and easier to implement.

By focusing on these areas, AI's power can be leveraged effectively and set a strong foundation for tackling more complex challenges in the future. Once the AI is implemented and KPIs and metrics established, it is critical to measure effectiveness and to review AI models and processes for continuous performance and accuracy, creating a feedback loop to improve efficiency.

Companies should empower their employees, providing them with the confidence and encouragement to lead AI initiatives. Additionally, companies must examine their data and analytics capabilities, as well as design thinking, agile execution, and change management, as they integrate AI and share these successes internally.

To stay ahead in the MedTech industry, companies should also consider how to incorporate Generative AI into their overall strategy.

When implementing new AI solutions, it is essential to address the risks associated with AI internally, irrespective of any regulatory delays, as regulations eventually catch up. For instance, companies need robust governance to handle ethical, legal, and technological concerns referred to as "responsible AI⁵".

CONCLUSION

The adoption of Generative AI is transforming the MedTech landscape, providing early adopters with a significant competitive edge and accelerated advancements in global health.

Start now, start lean, think big are the keys to start designing and delivering a successful AI strategy.

Demonstrating the tangible benefits of Generative AI to employees will advance greater acceptance and collaboration, while implementing risk mitigation strategies will ensure ethical and safe use.

As the MedTech industry continues to evolve, embracing AI will be crucial for driving innovation and improving patient outcomes. The time to start is now!

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About Arcondis

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Our solutions and services include Digitalisation, Data, IT & Infrastructure; Product Lifecycle Management; Industry Compliance & Managed Services and People & Culture. As an independent solutions and Managed Service provider, we have the flexibility to prioritise our clients' best interests without being constrained by exclusive partnerships. We follow an outcomes-based approach – from strategy to hands-on delivery and beyond.

With a well-established reputation built over two decades, we have earned the trust of leading companies in Pharma, Med-Tech, Healthcare and Start-ups. Headquartered in Switzerland, we employ more than 250 specialists and professionals, with offices in North America, Europe and APAC.

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