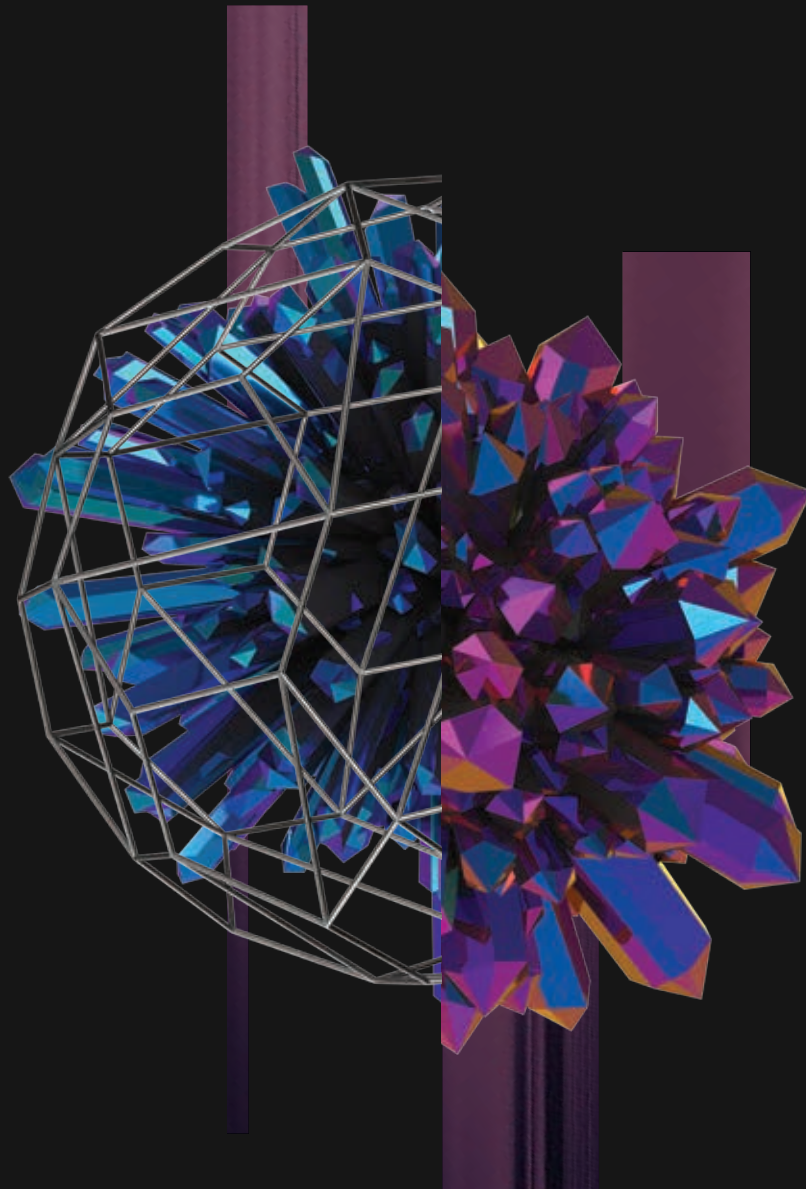


Transforming Revenue Cycle Management Through Generative AI



**Generative Artificial Intelligence (Gen AI)
Game Changer for Healthcare – RCM Perspective**

Introduction

The global Generative AI in the healthcare market is expected to reach USD 17.2 billion by 2032, with a CAGR of 37.0%, as per research from **Market.us**.

Gen AI, a subfield of Deep Learning, is emerging as a groundbreaking technology that allows users to generate content in various formats.

Healthcare-specific LLMs like Med-PaLM, ClinicalBERT, and BioGPT are set to transform the healthcare industry, specifically for providers' Revenue Cycle management. This paper discusses the potential benefits of Gen AI for Revenue Cycle Management for providers.

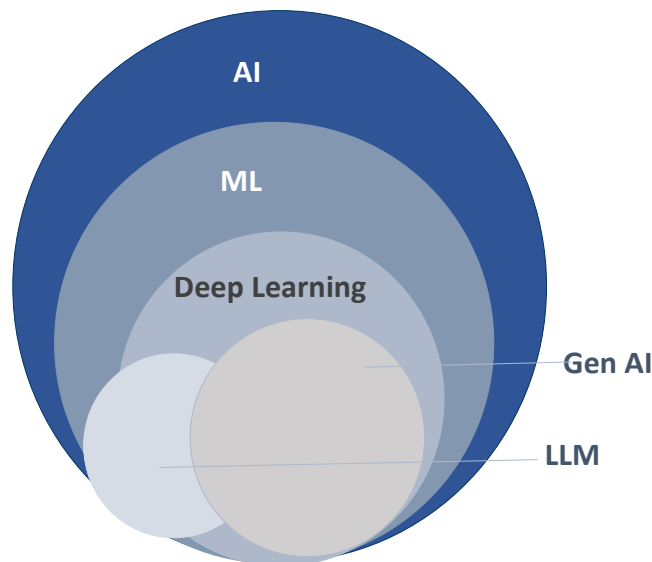


Exhibit 1.A - Illustrates Generative AI is a subset of Deep Learning. LLM are also a subset of Deep Learning.

RCM: Key Challenges and Opportunity

Global healthcare is presented with enormous challenges ranging from increasing patient population, complex diseases, data overload, and the need for swift and accurate decision-making.

Healthcare systems are under pressure to provide quality care while controlling costs and maintaining high standards of patient safety. However, workforce shortage, administrative demands, and the need for efficient care delivery are resulting in burnout, reduced job satisfaction, and potential implications on patient care quality.

Research suggests that effectively deploying automation and analytics alone could eliminate **\$200 billion to \$360 billion** of spending in US healthcare. A majority of these savings can come from administrative functions within the RCM value chain, including scheduling, coordinating care with insurers, documentation, and claim or bill adjudication.

Despite these potential benefits, healthcare leaders have been hesitant to embrace tech-enabled performance improvements due to previous automation and analytics projects that failed to deliver expected value, both in administrative functions and beyond.

Research reveals that primary care providers need **26.7 hours on average** to effectively complete administrative responsibilities and provide care to patients on a given day. At least two-thirds of a U.S. physician's work is non-patient facing.

Typical and foremost challenges in the RCM space have been higher administrative burdens, coding accuracy, a plethora of eligibility checks (Prior authorization/ medical necessity checks/ Advanced beneficiary notice/ insurance verification, etc.), multi-payor contracts, and technology integration.

However, with over 60% of organizations adopting AI in at least one function, it indicates that Gen AI is becoming mainstream and has the potential to revolutionize RCM (please see Exhibit 1.D).

GenAI Augmented RCM Transformation

Generative AI holds significant potential in transforming healthcare RCM; addressing several key challenges and optimizing various aspects of the financial operations, allowing RCM teams to handle a higher volume of cases with existing resources.

Healthcare organizations can leverage generative AI technologies to simplify and automate the complexity of billing, coding, and documentation. It can help physicians manage billing and collections, assist in generating accurate medical codes, reduce errors, improve the efficiency of the billing process, identify areas of improvement, and provide personalized recommendations.

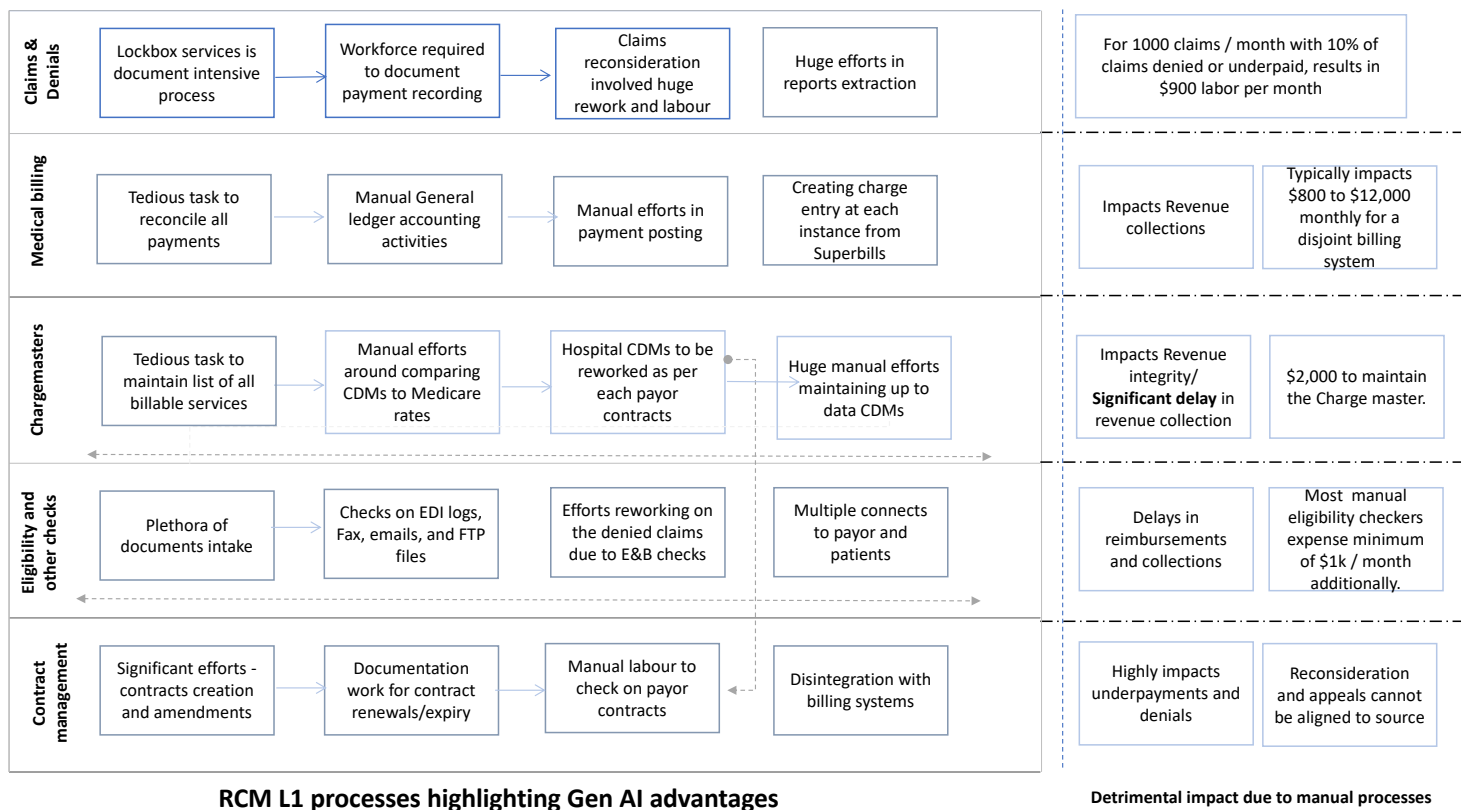


Exhibit 1.B – Documentation heavy processes presenting high opportunity for Gen AI

Exhibit 1.C highlights one of the above RCM area of inefficiencies – Medical coding and charge capture – where Gen AI can play a big role:

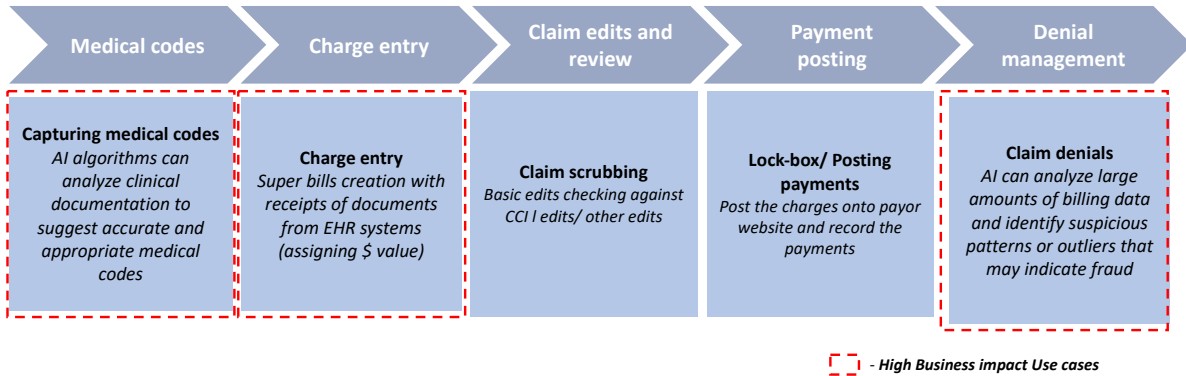


Exhibit 1.C – RCM medical coding value chain

Generative AI Opportunities Across RCM Value Chain

Below framework represents the RCM processes heatmap elaborated in Gen AI world:

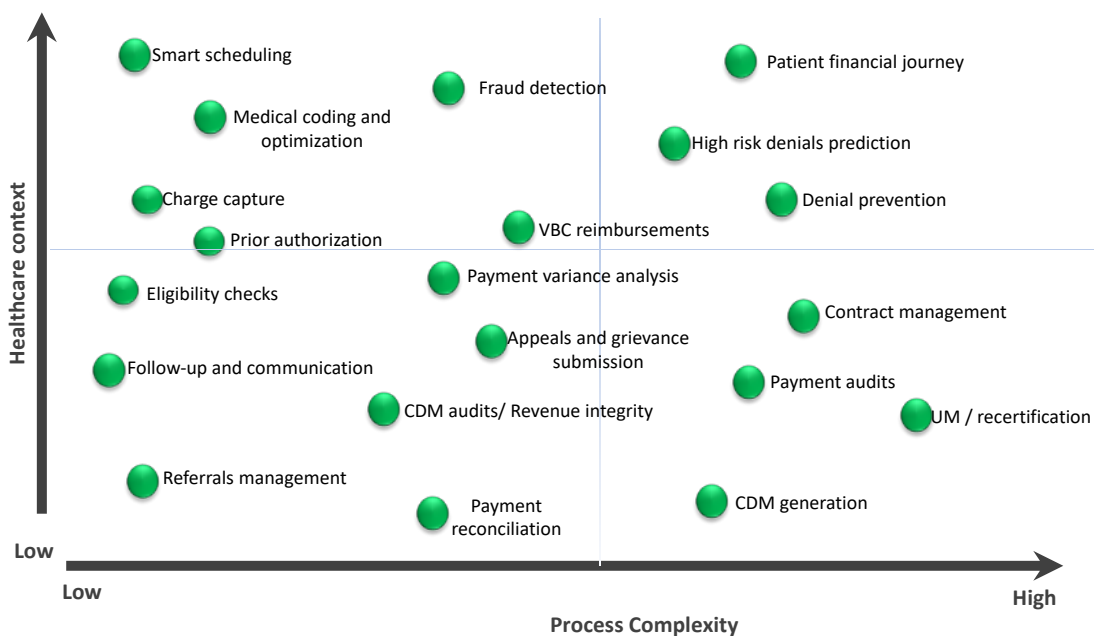


Exhibit 1.D – Re-imagine RCM with Generative AI

Front End:



Patient Scheduling

1. Market Need:

Patient scheduling is a critical yet complex task that involves coordinating appointments, managing resources, accommodating patient preferences, and optimizing healthcare providers' time. Dealing with wait times is one of the main concerns around patient scheduling. Patient 'no-shows' is another challenge, making it difficult for front office staff to manage provider schedules.

2. Gen AI Opportunity:

Generative AI can match patients with suitable providers and time slots, reduce wait times, offer personalized scheduling options, and maximize appointment utilization. By analyzing historical scheduling data and predicting appointment demand patterns, generative AI can help healthcare facilities better anticipate peak times and allocate appointments, accordingly, reducing patient wait times.

3. Business Value:

Operational excellence, minimized wait times, personalized patient engagement, optimized resource allocation, reduced administrative burden, and enhanced operational efficiency.

Eligibility and Benefit Checks

1. Market Need:

Healthcare providers spend approximately **12.64 minutes** checking each patient's insurance verification. The E&B verification process is a huge checklist comprising plan details, coordination of benefits, referral checks, prior auth checks, ceiling on the benefit limits, and calling the payor for additional services such as behavioral and mental health, substance abuse, and addiction.

2. Gen AI Opportunity:

Generative AI can quickly verify patient insurance coverage by accessing real-time databases and external sources, minimizing the risk of outdated information. Provide patients with personalized explanations of their coverage and out-of-pocket expenses. It can access multiple unstructured data sources to determine coverage.

3. Business Value:

Improved POS (Point of Service) collections, reduced denials, reduced admin burden, speeding up healthcare delivery.

Prior Authorization

1. Market Need:

A 2022 AMA survey found that **94%** of physicians reported care delays associated with prior authorization. The PA process is not only an administrative process, but one that can have severe effects on patient outcomes and care. Over one-third of physicians have a staff member who exclusively works on prior authorization admin tasks.

2. Gen AI Opportunity:

Utilize medical data to identify appropriate medications for patients and their disease state and determine medical necessity for PA approval.

3. Business Value:

A major benefit for patients whose condition may worsen while they wait for PA approvals.

Devising Contracts

1. Market Need:

With the rise in value-based care contracts and risk sharing arrangements, payer contracts are becoming complicated and hard to understand and thus hard to negotiate.

2. Gen AI Opportunity:

By utilizing various documents such as spreadsheets and lengthy contracts, physicians can gain a better understanding of how to negotiate contracts, and ask relevant questions. Analyzing historical provider contracts, legal standards, and regulatory requirements, initial contract drafts can be automatically generated.

3. Business Value:

Identify revenue shortfalls, streamlining negotiations, and reducing legal risks.

Middle Office:



Medical Codes Generation and Optimization

1. Market Need:

Medical coding involves translating patient diagnoses, treatments, and procedures into standardized codes for billing and record-keeping.

2. Gen AI Opportunity:

By analyzing medical records, physician notes, and other relevant documents, accurate procedure and diagnosis codes can be generated automatically. This can be especially useful for billing purposes, as Gen AI can read patient records and generate the appropriate codes. Generative AI can also assist in identifying codes that should be attached to the primary diagnosis code.

3. Business Value:

Improved accuracy, improved clean claim ratio, reduced billing errors, and decreased denial rate.

Clinical Functions:



Charge Capture and Reconciliation

1. Market Need:

Charge capture involves accurately recording the services and procedures provided to patients, while reconciliation ensures that the charges recorded align with the services delivered and billed. Charge capture is a highly complex discipline with ample opportunity for error. It typically involves data from multiple source systems requiring manual intervention to retrieve, compile, and reconcile. In addition, providers are faced with constantly changing regulations and payer rules that lead to significant revenue leakage.

2. Gen AI Opportunity:

By analyzing patient records, clinical documentation, and electronic health records, Generative AI can automatically identify the services and procedures provided to patients.

This reduces the chances of missed charges and allows for real-time capture of charges as services are rendered. Additionally, it can help identify instances of duplicate charges, reducing the risk of overbilling and improving charge accuracy.

3. Business Value:

Improved accuracy, streamlined workflows, optimized revenue capture.

Medical Billing / Fraud Detection

1. Market Need:

Medical billing errors have been a continuous challenge for providers as well as clearing houses performing claim edits.

2. Gen AI Opportunity:

By analyzing historical data on fraudulent claims, Gen AI can identify patterns which are indicative of fraudulent claims (for example, Under coding, billing for non-performed services, or duplicate billing). This learning can be used to assess new incoming claims generating a risk score that indicates the likelihood of fraud. AI can help analyze large amounts of billing data and identify suspicious patterns or outliers that may indicate fraud.

3. Business Value:

Improved Accuracy, reduced administrative burden on healthcare staff, improved clean claim ratio, and decreased denial rate.

Back-end Functions:



Denial Management

1. Market Need:

Denials represent a significant challenge in the Revenue Cycle Management (RCM) process, causing disruptions and hindering reimbursement. Such denials lead to appeals which start another process which can be time-consuming and resource-intensive.

2. Gen AI Opportunity:

Once the parameters (codes/ departments) causing the highest denial amount are identified, Gen AI can assist in creating a corrective action plan. This may include correcting service or reason codes, attaching necessary documentation, and sending the plan to the appropriate provider for prior review.

3. Business Value:

Minimize financial losses and administrative burdens.

Follow-Up and Communication

1. Market Need:

Follow-up and communication are crucial components of RCM, ensuring that claims move efficiently through the reimbursement cycle while maintaining patient satisfaction. Research shows that practices only collect 12% of their accounts receivable outstanding balances at the time of service. The common factors impacting A/R follow-up are Data entry errors/ increased backlog of A/R claims/ multiple follow-ups with payers on accounts using phone, email, and web tools.

2. Gen AI Opportunity:

Generative AI analyzes patient data to create communication plans that provide timely updates on claim status and payment options. Notifications reduce the need for manual follow-up calls, improving transparency and patient satisfaction.

3. Business Value:

Enhance patient engagement, streamline operations, and optimize financial outcomes, fostering a seamless and efficient RCM experience for both patients and healthcare organizations.

Key Considerations to Realize the Potential of Generative AI For RCM Transformation

As organizations increasingly explore the potential of Generative AI to revolutionize RCM, it is important to keep the following in mind:

1.Data Quality and Availability: Generative AI relies heavily on high-quality diverse, and comprehensive data. In RCM, data sources may be fragmented, inconsistent, or contain errors. Organizations must ensure reliable data for effective AI model training and accurate predictions.

2.Data Privacy and Security: Healthcare data is sensitive and subject to strict privacy regulations like HIPAA. Organizations must ensure to safeguard patient information while utilizing it for AI purposes with robust security measures and compliance with privacy laws.

3.Integration with Existing Systems: Integrating Generative AI solutions with existing RCM software and workflows can be complex. Organizations must ensure seamless integration to avoid disruptions and ensure smooth operations.

4.ROI and Value Demonstration: Demonstrating the return on investment (ROI) of Generative AI implementation in RCM can be challenging, especially in terms of quantifiable financial outcomes. Organizations should focus on demonstrating the value of Generative AI in terms of improved efficiency, accuracy, and compliance.

5.Regulatory Compliance: AI solutions in healthcare must adhere to regulatory guidelines and standards. Organizations must ensure compliance with healthcare regulations for legal and ethical reasons.

6.Continuous Learning and Adaptation: Generative AI models need to continuously learn and adapt to changing payer policies, industry trends, and regulations. Organizations must implement mechanisms for model updating and ongoing improvement.

By carefully considering these factors, organizations can position themselves for improved efficiency, accuracy, compliance, and ROI with Generative AI.

Key Takeaways

Generative AI is reshaping the landscape of healthcare Revenue Cycle Management (RCM). It is not confined to efficiency gains and acts as a catalyst for the transformation of an entire ecosystem, where financial and patient care imperatives harmoniously coexist.

Generative AI's role as an intelligent documentation assistant ensures that coding accuracy is elevated, reducing the risk of denials arising from coding discrepancies. The technology's adaptive learning ensures that it evolves in tandem with shifting payer policies, industry dynamics, and regulations. Patient experience also takes center stage, as Generative AI tailors communication plans based on patient preferences and behaviors, fostering engagement and transparency.

With Generative AI's potential to predict, optimize, and enhance, the future of healthcare RCM is brimming with possibilities for transformative success.

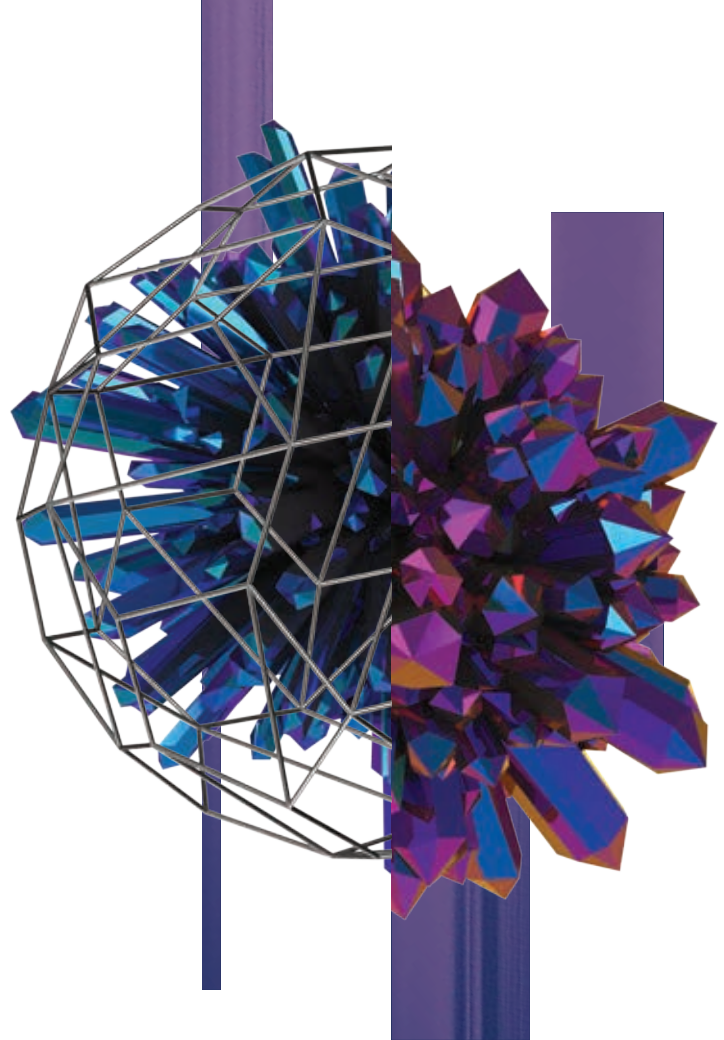
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About CitiusTech

Our vision is to inspire new possibilities for the health ecosystem with technology and human ingenuity. At CitiusTech, we constantly strive to solve the industry's greatest challenges with technology, creativity, and agility. Together with the world's leading Healthcare and Lifesciences organizations and our partners, we aim to accelerate the transition to a human-first, sustainable, and digital healthcare ecosystem.

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