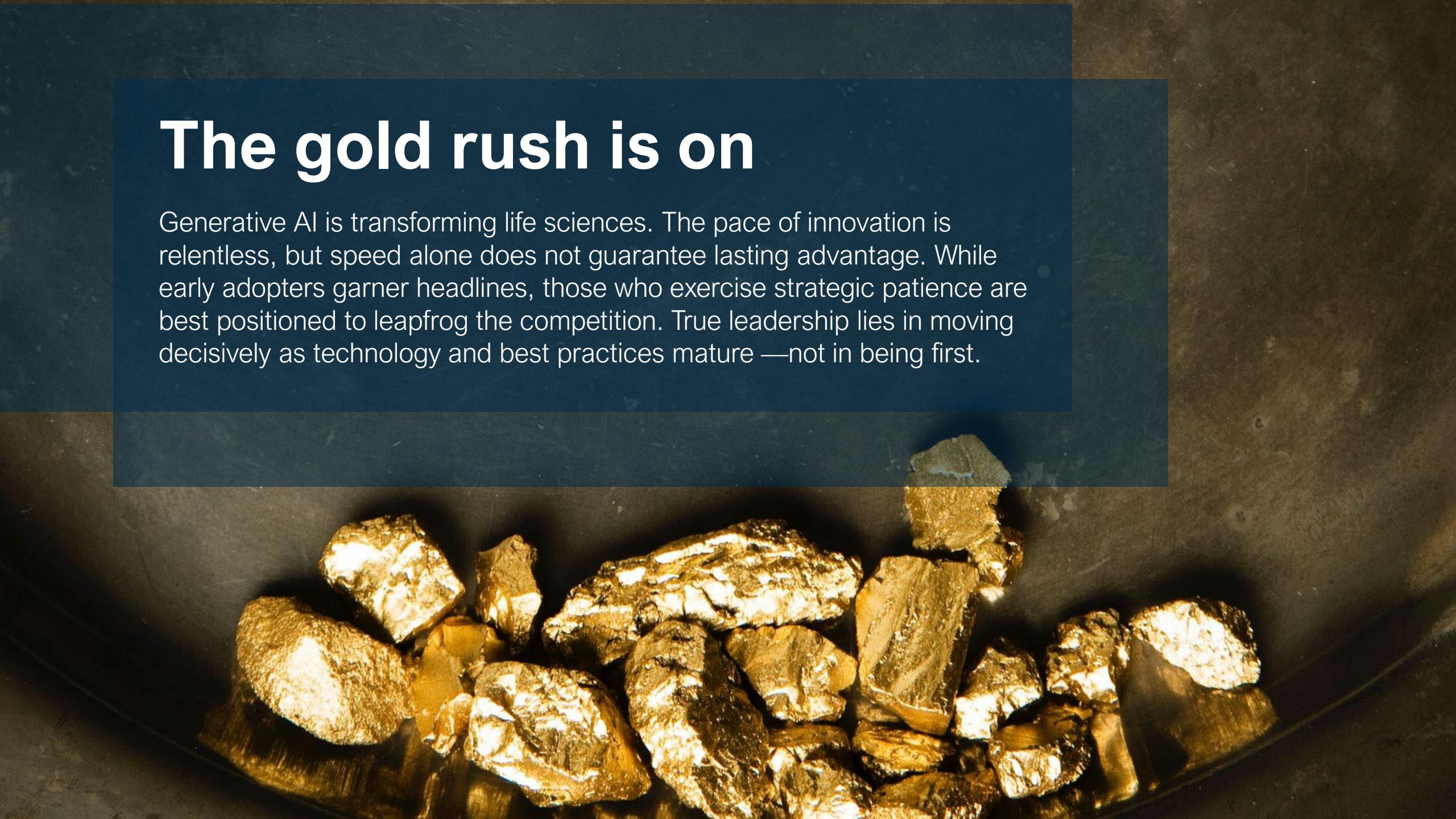
Strategic Patience in GenAI

A smarter path to AI leadership

August 2025

The gold rush is on

Generative AI is transforming life sciences. The pace of innovation is relentless, but speed alone does not guarantee lasting advantage. While early adopters garner headlines, those who exercise strategic patience are best positioned to leapfrog the competition. True leadership lies in moving decisively as technology and best practices mature —not in being first.



GenAI offers impressive promise and real-world growing pains

It's still early days for GenAI. While traditional AI has reached a level of stability that justifies investment, GenAI requires a more cautious approach. Investments should be made with eyes wide open to the risks that come with its immaturity.

Investing in GenAI is a commitment to agile, continuous risk management, with a relentless focus on learning and adapting as the field develops.

Moving too fast can derail leaders

In life sciences, the drive to keep pace can inadvertently push organizations toward hasty, high-risk deployments. Without a clear strategic roadmap, rushing into generative AI can lead to:

- Diminished returns
- Operational risk
- Strategic missteps

Treat GenAI investments as ‘bet-the-company’ decisions

Build for the enterprise, not the function

Isolated experiments can spark early excitement, but sustainable advantage comes when AI capabilities are designed for enterprise-wide integration, supporting core business objectives

Invest in resilience

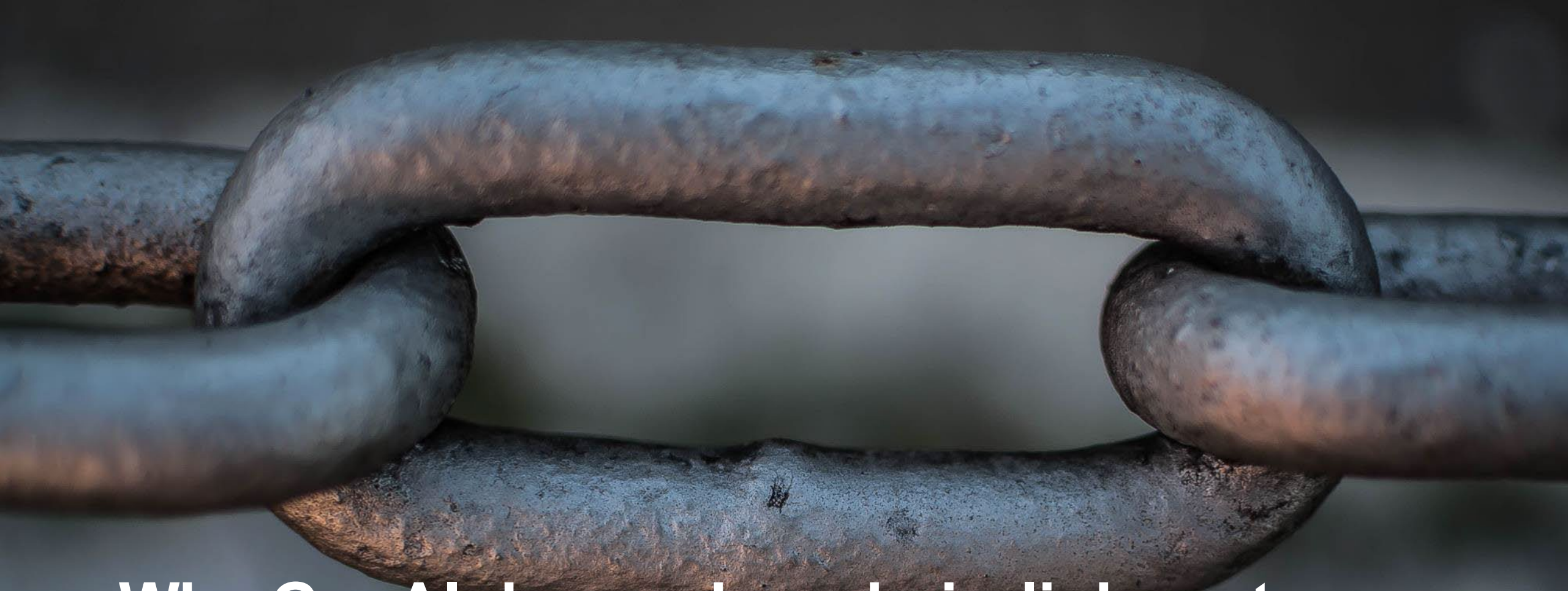
Strengthen data quality, ensure adaptable infrastructure, and foster cross-functional talent. Strategic patience enables scalable growth as the technology matures, avoiding technical debt

Govern relentlessly

Treat every AI initiative as mission-critical. Robust oversight, clear decision rights, and well-defined success metrics are non-negotiable for capturing lasting value

Act with strategic intent

Each initiative must tie directly to strategic goals. Avoid chasing novelty. Prioritize initiatives that act as springboards for enterprise-scale transformation



Why GenAI demands a chain-link system

With GenAI, success isn't built on isolated wins or flashy tech. It's achieved through the integration of every essential domain (e.g., data, infrastructure, talent, change management, governance). Your GenAI strategy is only as strong as its weakest capability. Coordinate your investments. Diagnose your weakest link. Fix it before you move on. Organizations that relentlessly shore up every link create systems that competitors can’t easily replicate, and position themselves to scale at speed when the time is right. That’s how lasting advantage is built.

Success is limited by the weakest link; an enterprise strategy is needed

One weak link can erode enterprise value and lead to cascading breakdowns

- If a company's data is poor, investing in powerful GenAI models won't deliver reliable outputs.
- If compliance or risk oversight lags, a strong tech stack can trigger regulatory headaches.
- Siloed pilots and inconsistent policies cause fragmentation, wasted investment, and organizational fatigue.

What happens when you get it wrong

- Over-invest in GenAI without shoring up your weakest link and you risk stagnation, ballooning costs, stalled adoption, and compliance or reputational fallout.
- Competitors that build coordinated, end-to-end capabilities will leave disjointed organizations behind.

How leading companies get this right

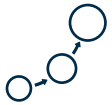
- Winners invest to shore up weaknesses and assess the system as a whole. In other words, they optimize for the enterprise, not for a function.
- There is a focus on integrating technical, operational, and risk management capabilities, constantly scanning for emerging weak spots, and orchestrating changes across the whole enterprise.
- The competitive advantage is not in building a better mousetrap, but in being able to discern which upgrades matter and implement those that do faster than others.

Four traps for the unwary serve as a word of caution

Generative AI introduces substantial risks, such as the four traps noted below.

Real-world cases, such as MD Anderson's partnership with IBM Watson and initial radiology automation efforts, demonstrate that leaping too early—without robust data, cross-functional alignment, and strong governance—can undermine both value and trust.

Strategic patience in these environments helps organizations avoid the "early adopter tax" and learn from others' missteps.



Tech Immaturity

We're still early GenAI's journey, and much will change in a short time.

Hallucinations

Highly visible examples emerge daily, showing overreliance on GenAI to produce output without human oversight.

Cybersecurity

Every generation creates risk; the more frequent the use, the higher the likelihood of a cyber incident.

Model Collapse

GenAI models rely on fresh, trusted data—without it, performance degrades over time.

GenAI “hallucinations” and inaccuracies introduce risk

Especially in regulated environments, inaccurate or fabricated AI-generated outputs can severely undermine trust and decision-making.

Examples of GenAI challenges within regulated industries

Public Health Report Invalidated

The Make Our Children Healthy Again report cited fake and duplicate studies, some entirely non-existent, exposing clear signs of AI-generated content and compromising public trust.[1]

AI in Clinical Decision-Making

A case example showed AI suggesting a drug treatment for Lyme disease with known risks in pregnancy, despite the case subject being a pregnant woman, highlighting risks when AI-generated clinical support lacks human oversight.[2]

Legal Fallout: Mata v. Avianca

A lawyer used ChatGPT for case research, submitting fabricated citations and rulings. The judge confirmed the chatbot invented them, despite claims they were in trusted databases.[3]

Note: GenAI “hallucinations” are outputs generated by AI that contain fabricated, false information.

Sources: 1. MAHA Report, 2. Rethinking Hallucinations: Correctness, Consistency, and Prompt Multiplicity, 3. When AI Gets It Wrong: Addressing AI Hallucinations and Bias

GenAI raises the stakes on cyber risk, and most are unprepared

THE RISK

Relying on GenAI opens the door to new and bigger cyber threats. Every time sensitive data moves through AI systems, exposure grows; putting operations, innovation, and reputation on the line. More AI means more targets, more attack surfaces, and higher stakes every step of the way.

When AI is used in drug discovery and key business functions, every added instance of data storage or processing creates a flashpoint for cyberattack. Companies that treat AI as just another tool are missing the risk: with GenAI, a single breach could mean game over.[1]

THE EXPOSURE

Only 17% of pharmaceutical organizations have automated controls to prevent data leakage through AI tools.[2]

83%

Are flying blind without basic safeguards.

Sources: 1. R&D World, 2. Contract Pharma

Company maintained models are at risk of “model collapse”

Model collapse happens when AI models repeatedly train on their own outputs, compounding errors and steadily eroding quality and accuracy.[1,2]

In life sciences, these risks are theoretical. They can undermine drug discovery, misinform users, threaten patient safety, and erode regulatory trust. To avoid model collapse, focus on continuously feeding the model original, trustworthy data.

Compounding errors

With each generation, small mistakes are reinforced and magnified as the model keeps training on its own flawed data

Loss of uniqueness

Rare but important data (the “long tail”) gets drowned out, making the model less meaningful and missing critical edge cases that matter in life sciences

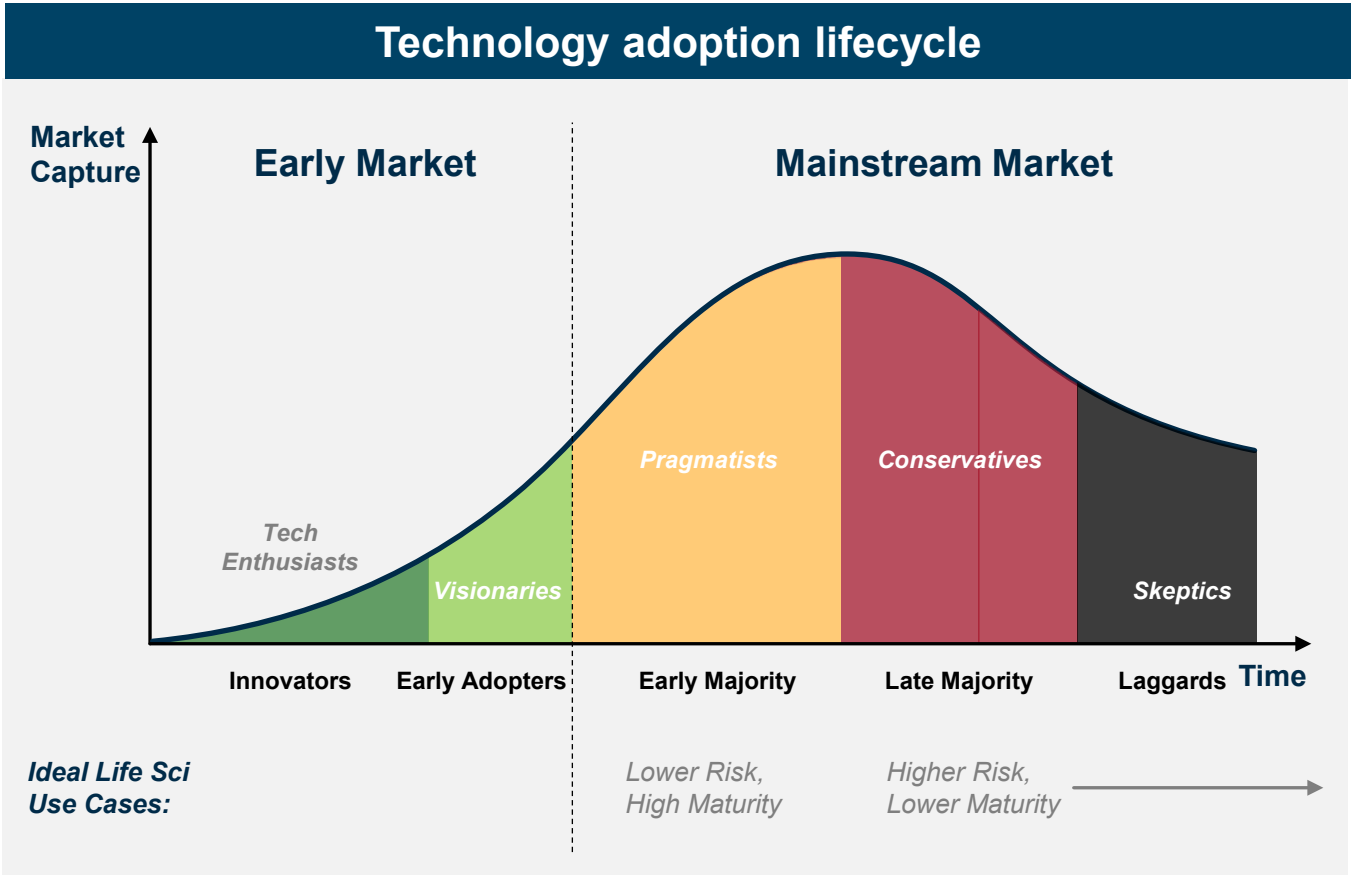
Feedback loops

Without human intervention, the system can enter a loop where quality quietly slides, leading to unreliable or even dangerous outputs

Sources: 1. Some Signs of AI Model Collapse Begin to Reveal Themselves
2. AI Models Collapse When Trained on Recursively

History shows the Late Majority often leapfrog early movers

Historical technology adoption curves show that late adopters often outperform by skipping costly mistakes



While the "early majority" **may benefit from building capabilities** that drive competitive advantages, they also **may face several risks** until the underlying technology has truly matured:

- **Unreliable performance**
- **Integration challenges**
- **Security and privacy risks**
- **Lack of best practices**
- **Talent gaps**
- **High costs / low ROI**

*This creates an opportunity for **the "late majority" to leapfrog the "early majority"** by adopting more mature technology and **avoiding early adoption pitfalls***

Sources: 1. Crossing the Chasm in the Technology Adoption Life Cycle

Smart operators win by learning from early adopters and benefiting from maturity

Mobile Phones in Emerging Markets

Countries like India, Ghana, and Nigeria bypassed landline infrastructure and adopted mobile networks directly, achieving faster, cheaper nationwide coverage without massive fixed-line investment.[1,2]

Smarter Cloud Adoption

Industries like banking and healthcare delayed moving critical systems to the cloud[5,6,7]. This patience paid off with better security, standardized compliance (e.g., HIPAA, FedRAMP), and lessons from early missteps in cost, migration, and vendor lock-in.[3,4,8,9,10,11,12]

Modular ERP Migrations

Early adopters rushed full ERP rollouts and faced major disruption[13,14]. Companies like Walmart and TD Bank now succeed through phased implementations, tight data governance, and experienced system integrators, minimizing risk and cost.[15]

Mobile Payments in China

With limited credit card adoption, China skipped plastic altogether, moving directly from cash to mobile wallets. The result: lower transaction fees, faster adoption, and avoidance of POS hardware costs.[16,17,18,19]

Blockchain in Enterprise

Blockchain pilots in the 2010s struggled with scale, standards, and compliance.[20,21] Today, banks like JPMorgan and Citi are reaping the benefits of blockchain after years of experimentation, handling high-volume on mature, interoperable platforms with regulatory clarity.[22,23,24]

Strategic patience often helps the best operators avoid paying the “early adopter tax"

Acronyms: HIPAA = Health Insurance Portability and Accountability Act, FedRAMP = Federal Risk and Authorization Management Program, ERP = Enterprise Resource Planning, POS = Point of Sale.

Sources: 1. Our World in Data, 2. World Economic Forum, 3. Unisys, 4. Journal of Cloud Computing, 5. APPSEC Engineer, 6. National Library of Medicine, 7. BizTech, 8. CMS CyberGeek, 9. International Journal of Engineering and Computer Science, 10. Amazon Web Services, 11. Databricks, 12. Maruti Techlabs, 13. Harvard Business Review, 14. CNET, 15. Investopedia, 16. Wired, 17. CGAP, 18. Brookings, 19. Business Today, 20. CoinDesk, 21. Federal Reserve Bank of Chicago, 22. Financial News, 23. LF Decentralized Trust, 24. Microsoft

Life sciences has seen the cost of rushing in

While others make bold claims about the scope of opportunity for AI in life sciences, there are several examples where the benefits of AI were not realized by early adopters

Bold claims about AI

In a recent study, Accenture and Wharton predicted that digital and physical agents could shoulder 55% of total biopharma workforce hours[1,2]

Data, organizational, and macro challenges

Most companies struggle with data silos, lack of interoperability, and unclear data governance, which are foundational elements for AI to deliver on its promises

Challenges faced in early adoption of "traditional" AI can serve as lessons for future GenAI utilization

Sources: 1. Drug Discovery and Development, 2. Accenture

Cautionary Case: Cancer Treatment at MD Anderson Cancer Center

Between 2013 and 2017, MD Anderson Cancer Center partnered with IBM Watson to develop an AI-based tool, the Oncology Expert Advisor, intended to assist in cancer treatment decisions

MD Anderson's collaboration with IBM Watson has become a cautionary example of an ambitious AI initiative faltering without procurement discipline, clinical alignment, and strong performance governance

Despite early fanfare, the project ultimately failed without ever being deployed in clinical care

A 2016 audit uncovered serious governance and oversight issues:

- The IBM contract was not competitively bid
- More than $62 million was spent without a formal budget or deliverables
- The tool was incompatible with MD Anderson's newly adopted EHR

The project suffered from lack of clear performance metrics, weak project management, and poor integration with clinical operations

- Fallout led to the termination of the partnership and resignation of several key executives

Sources: 1. Forbes, 2. Journal of the National Cancer Institute, 3. ARS Technica

Cautionary Case: Medical imaging interpretation

Radiology was initially seen as a leading use case for AI, with high potential for automating image interpretation and improving diagnostic efficiency

This example illustrates how clinical hesitancy, reimbursement barriers, and workflow challenges have limited observed financial impact and tempered early optimism about AI in radiology

Clinical hesitancy due to limited evidence that AI improves accuracy

- Studies have found that incorrect AI outputs can lead to higher false-positive and false-negative rates compared to unaided interpretation
- Lack of evidence heightens skepticism among radiologists, especially for complex or ambiguous cases

Reimbursement remains a major hurdle for AI Tools

- Tools like those from Analytic struggled due to limited payment pathways and slow adoption by providers

Workflow disruption and lack of clear ROI remain major barriers

- Even when tools perform well technically, they often fail to integrate smoothly into clinical workflows
- Without strong evidence of improved outcomes or financial value, adoption remains cautious

Sources: 1. Nature, 2. Radiology

Cautiously Optimistic Case: Drug Discovery and Development

Impact of AI on Drug Development

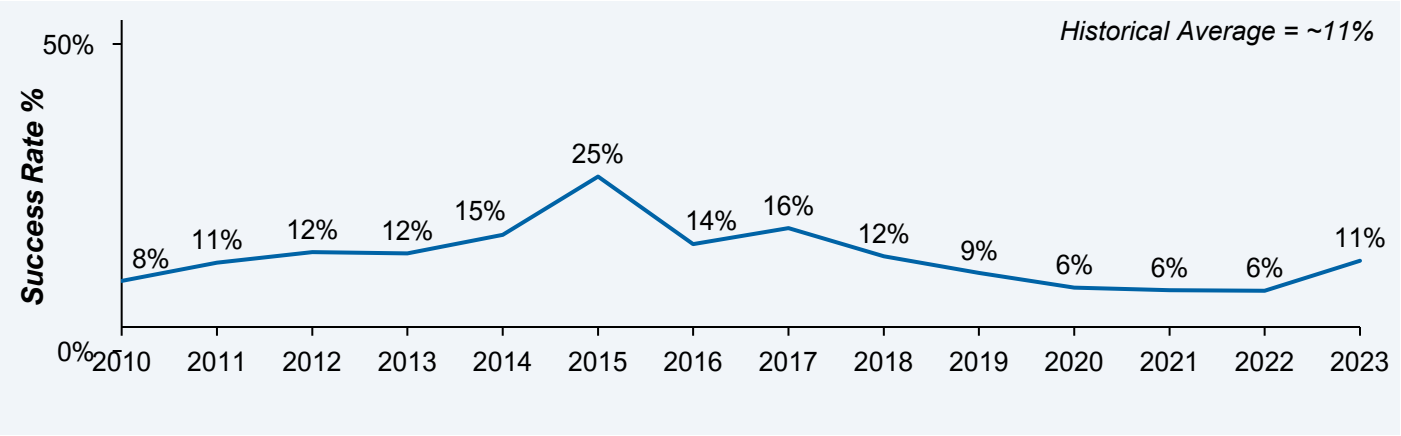
164
Investigational drugs developed using AI as of February 2024.[1]

~90%
Phase I success for AI-discovered molecules, above industry average.[2]

~40%
Phase II success for AI-discovered molecules, at industry average.[2]

There is reason for cautious optimism —while AI improves early-stage success, **~90% composite failure rates** across the R&D journey persist

Composite Success Rate of Therapeutics, 2010-2023[3]

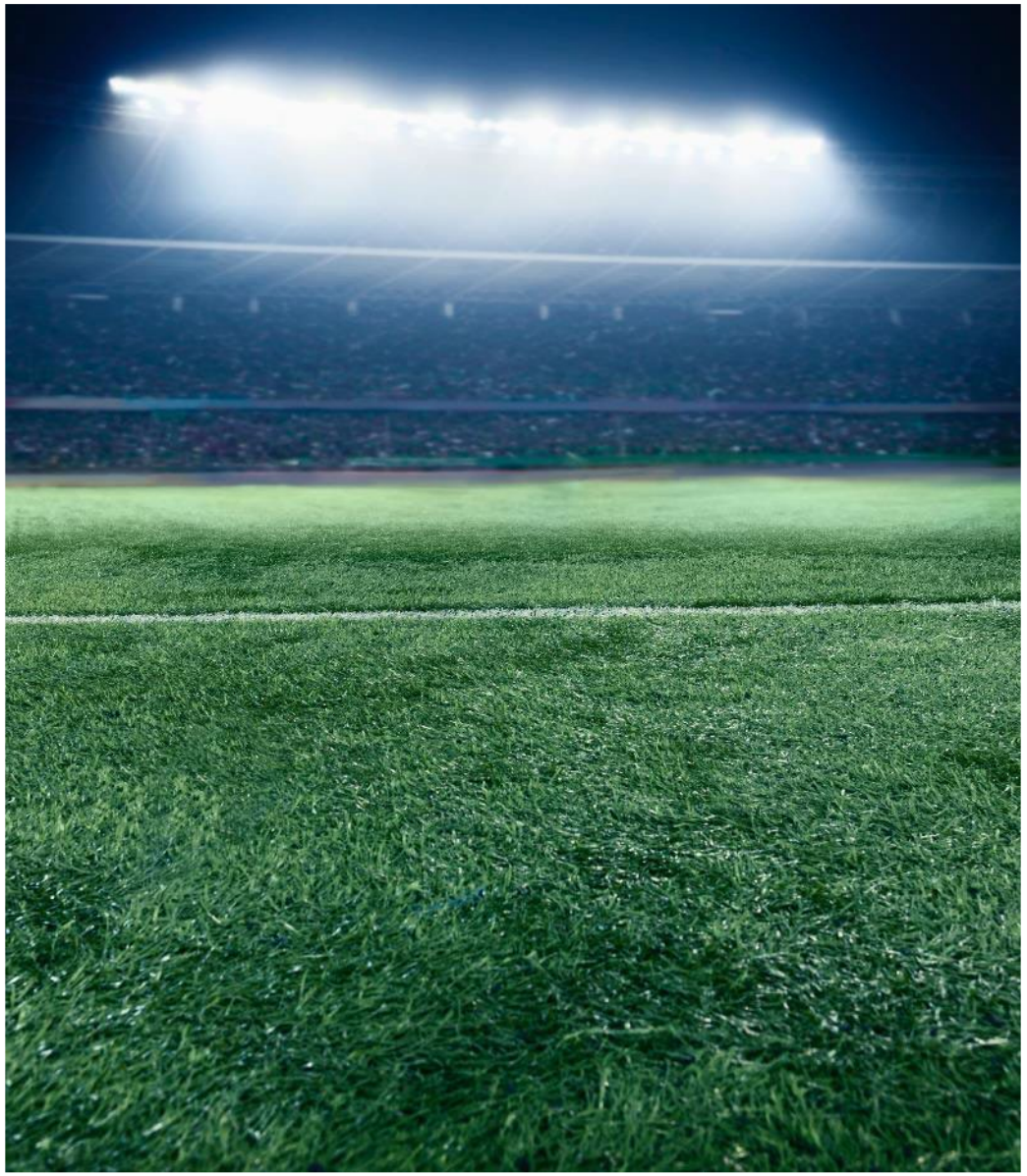


Several AI-designed drug candidates have failed or been discontinued in trials, including those from Exscientia, BenevolentAI, and Sumitomo Pharma.

Overfitting and flawed assumptions are potential root causes of these limitations, underscoring the need for higher quality, comprehensive data.

These setbacks reinforce a broader trend: despite a decade of AI-driven efforts, meaningful breakthroughs have been slow to emerge. GenAI may strengthen these approaches, but it will not solve foundational challenges overnight.

Sources: 1. JAMA, 2. Drug Discovery Today, 3. IQVIA



Strategic patience is an active play; not sitting on the sidelines

Early adoption can lead to skills, infrastructure, and business processes that contribute to competitive advantages over time, driving organizational ability to shape new markets.

Strategic patience is an active approach, not a passive stance.

Leaders should:

- Invest today in rock-solid data governance, security, and adaptable workforce capabilities
- Experiment judiciously in proven, lower-risk domains, cultivating organizational experience alongside foundational strength
- Continuously scan the landscape for inflection points that signal when to accelerate investment

To start, go where others have had success

Life sciences organizations can begin experimenting with generative AI within lower risk use cases in relatively mature functions with robust historical data to train models

Clinical operations

- Documentation (e.g., clinical study reports)
- Patient and site identification
- Data processing
- Clinical trial design

Manufacturing/ logistics

- Manufacturing process optimization
- Supply chain optimization

Commercial

- Sales force deployment
- Market access
- Pricing scenario modeling
- Market assessments
- Marketing collateral design

Back-office functions

- Finance
- HR
- IT
- Procurement
- Internal training and development

Piloting GenAI in these lower risk use cases, while investing in data infrastructure and establishing governance, allows organizations to maximize benefits while minimizing drawbacks

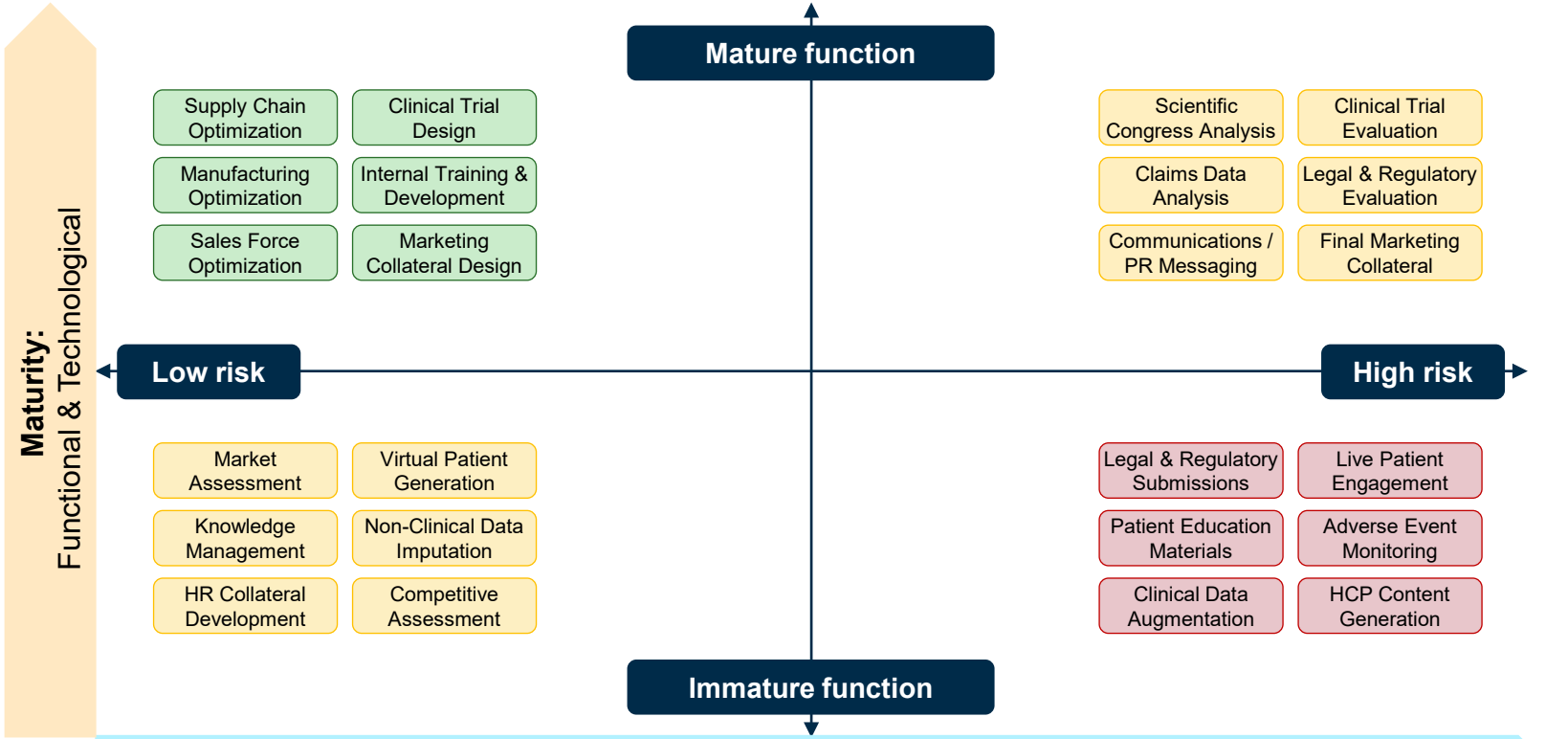
How to pick battles that deliver value

Life sciences organizations should consider maturity of functions / use cases and overall risk to evaluate whether GenAI should be explored in the near-term

Evaluating GenAI: Balancing Risk, Maturity and Market Opportunities

Maturity Considerations

- New vs. Mature Therapy/Product
- Extent of historical training data available
- Extent of established standards and best practices



Risk Considerations

- *Non-clinical* ⟷ *Clinical*
- *Design / Evaluation* ⟷ *Execution*
- *Internal* ⟷ *Market Facing*

Your next moves to leapfrog when ready

Actionable roadmap for Late Majority movers

Invest in foundational capabilities	Build out robust data infrastructure, governance frameworks, and a cross-trained, AI-ready workforce
Experiment in targeted, mature areas	Focus experimentation on areas with abundant historical data and well-established business processes
Monitor leading practices intensively	Track competitive signals, evolving regulatory standards, and measurable peer group outcomes to optimally time investments
Plan for enterprise scale from Day One	Take a page out of the tech playbook and build dedicated product development teams that build, deploy, scale, and serve your enterprise GenAI products

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Thank you

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