Capgemini

How are *life sciences engineering leaders* balancing speed, agility, and compliance, in an age of disruption?

Life Sciences Engineering and R&D Pulse Report 2026

Report scope

This report presents the key insights from the Life Sciences Engineering Pulse 2026, part of our broader cross-sector Engineering & R&D Pulse.

It is based on a global survey of 200 senior life sciences leaders from large organizations across pharmaceuticals, biotechnology, medical devices, and digital health.

Respondents are senior decision-makers responsible for engineering across the entire product lifecycle – from early R&D and design to regulatory and quality compliance, industrialization, supply chain operations, and commercialization.

The quotes and case studies included are illustrative in nature, may be drawn from publicly available sources, and do not necessarily reflect the views or statements of survey respondents.

Report demographics

The data in the report was gathered by the Capgemini Research Institute in August 2025 via a survey of executives at organizations with more than $1 billion in annual revenue. This data is from a subset of 200 Life Sciences C-level and Senior Leadership across North America, Europe, APAC, and the Middle East.

Subsector breakdown:

- 45% Pharmaceuticals
- 28% MedTech
- 19% Biotechnology
- 7% Lab automation and research tools
- 1% Digital health and Software-as-a-Medical Device (SaMD)

What you will learn

A practical lens on the forces driving change – and the solutions leading organizations are adopting.

Few industries share the life sciences' weight of responsibility.
Every drug approved, every device deployed, every therapy developed has a direct bearing on human health and quality of life. Yet the organizations entrusted with that responsibility are operating in one of the most complex environments in recent memory – one defined by geopolitical volatility, intensifying global competition, accelerating technological disruption, structural cost and time pressures, and an unprecedented pace of technological change driven by AI.

The question this report asks is a simple but urgent one: are life sciences organizations prepared to meet this moment? Based on the evidence gathered from senior executives across the sector, the answer is that while ambition is high, the gap between strategic intent and operational readiness remains significant – and the window to close it is narrowing.

Our aim was threefold: to understand the forces shaping the industry's strategic agenda; to benchmark where organizations currently stand in their engineering transformation journeys; and to identify the solutions, models, and technologies that leading organizations are deploying to stay competitive. In doing so, we sought not only to surface individual challenges, but to provide a collective view – one that allows leaders to benchmark their progress, learn from peers, and find shared solutions to shared problems.

Key findings

What we found was a sector that is simultaneously brimming with opportunity and burdened by challenges that threaten competitiveness, resilience, and innovation.

"***Organizations are aligned on vision – but not yet prepared to deliver at scale.***

The findings of this report deliver a clear message: the convergence of geopolitical volatility, accelerating AI adoption, deepening talent shortages, and sustained cost and timeline pressures is fundamentally reshaping life sciences engineering.

These forces are creating an important gap between strategic ambition and execution readiness—one that the industry can no longer afford to ignore."

Nirlipta Panda
Vice President and Global Head of Industry
Life Sciences | Capgemini Engineering
nirlipta.panda@capgemini.com

The urgency of life sciences transformation is real

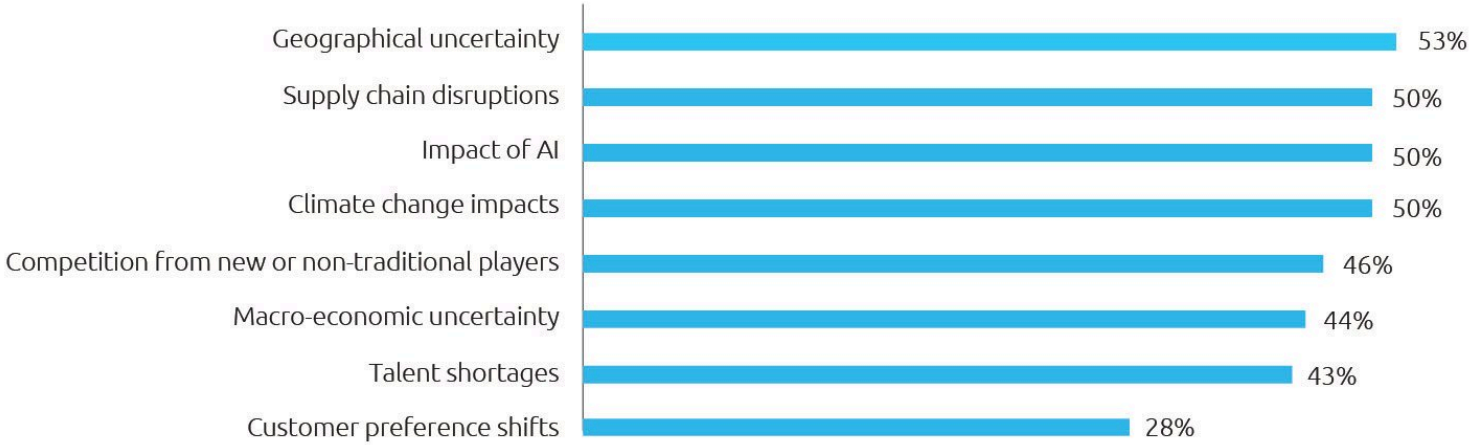
The pressures reshaping the life sciences sector

Geopolitical uncertainty emerges as a major concern, with 53% of life sciences executives naming it as a major threat and 57% acknowledging gaps in their readiness to manage its impact. From tariffs and trade barriers to sovereignty mandates and global conflicts, leaders face a fragmented world where cross-border collaboration is harder. Supply chain fragility reinforces this vulnerability: half of respondents see disruptions – including raw material scarcity – as a major threat, and 47% say they are not adequately prepared for them.

Talent shortages, particularly in critical disciplines such as engineering, digital, and AI, are another persistent pressure point. Nearly half, 43%, identify skills scarcity as a significant threat, and almost as many acknowledge they are unprepared to fill these gaps.

Compounding this is the rapid acceleration of AI technologies, including generative and agentic AI. Half of respondents see AI as a major threat, but also an opportunity, though respondents are largely confident in their preparedness for the coming AI wave, at least more so than other challenges.

Considered a major treat over the next 3-5 years (Chart 1)



Finally, longstanding concerns loom large. **Cost rises** (82% report increases over the last three years) and **lengthening innovation timelines** (91% say development cycles have lengthened) are seen as problems in need of solutions. Development horizons can be 8-10 years, 3-4 of which are dedicated to regulatory processes. 90% say that, to stay competitive, they need to reduce time spent on design and development by 5-15%. That will need to include more efficiency in compliance.

All this is against a backdrop of rising global competition, with forecasts expecting 35% of FDA approvals for drugs to originate in China by 2040, up from just 5% today.[1]

Source: [1] Morgan Stanley, "The Innovation Boom in China Biotech", September 2025.

We risk losing significant market share to startups and emerging market players within the next five years, if we fail to innovate faster.

39% *

Without significant cost reductions, our organization risks becoming uncompetitive against startups and emerging market players within the next five years.

45% *

* Percentage of respondents strongly agreeing with the statements above.

In light of these challenges, what are life sciences leaders' strategic priorities?

Compliance first – but agility is the real differentiator.

Perhaps unsurprisingly, improving regulatory compliance clearly leads the way: 65% of respondents highlight its importance, and 45% identify it as their top strategic concern.

Agility emerges as the next key area of attention, with 18% saying it was their top priority, and 52% saying it was their second priority after compliance. That underscores the need for faster, more adaptive operations, with more flexible talent pools and supply chains, that can withstand global volatility.

Beyond these two areas, companies revealed a long list of strategic goals they aspired to. Cost savings (48%) and reducing time to market (45%) were both high on the agenda. Related to these, 48% said that embracing digital technologies to innovate was an important priority.

As a result, life sciences leaders face a challenging time. To stay competitive, they must become more agile to thrive in a volatile world. They must also reduce costs and shorten innovation cycles, while adhering to regulatory & compliance guidelines – all without compromising safety. How can they do all of this together?

Sources: [2] Takeda – Press release, "Changes to Fuel Speed, Competitiveness and Future Growth", January 2026.
[3] Pfizer – CEO Letter, Annual Review 2025.

> *"The changes announced today are the catalyst for our next era, enabling simplicity, speed and efficiency – without sacrificing quality – to help us move at pace to bring life-transforming medicines to patients."*
>
> **Julie Kim** | CEO-Elect, Takeda [2]

> *"We're striving to increase the speed of everything we do to drive high-quality innovation to improve lives."*
>
> **Dr. Albert Bourla** | Chairman & CEO, Pfizer [3]

How are life sciences leaders responding to these challenges?

Turning pressure into action

How are life sciences leaders attempting to build agile, resilient organizations, which cut costs and compress innovation cycles, all while ensuring compliance is strictly adhered to?

Three dominant areas emerge from the findings:

01

Increasing organizational agility

Read more >

02

Embracing AI and new technologies

Read more >

03

Shifting to global operating models and accessing global talent

Read more >

01

Increasing organizational agility

As market conditions become more unpredictable – shaped by geopolitical shifts, fluctuating demand, and supply chain fragility – life sciences companies are prioritizing agility itself as a core strategic capability. Many are accelerating efforts to build more flexible operating models that can respond quickly and efficiently to changing needs.

Agility is not just about responding to big changes like a war or a pandemic. It is also about constantly adjusting the organization to enable rapid, cost-effective innovation, such as quickly scaling up software capabilities, or being able to deploy new productivity-boosting innovations, like AI or robotics, into existing processes.

Highlights

84%
are investing in digital tools to better anticipate shocks

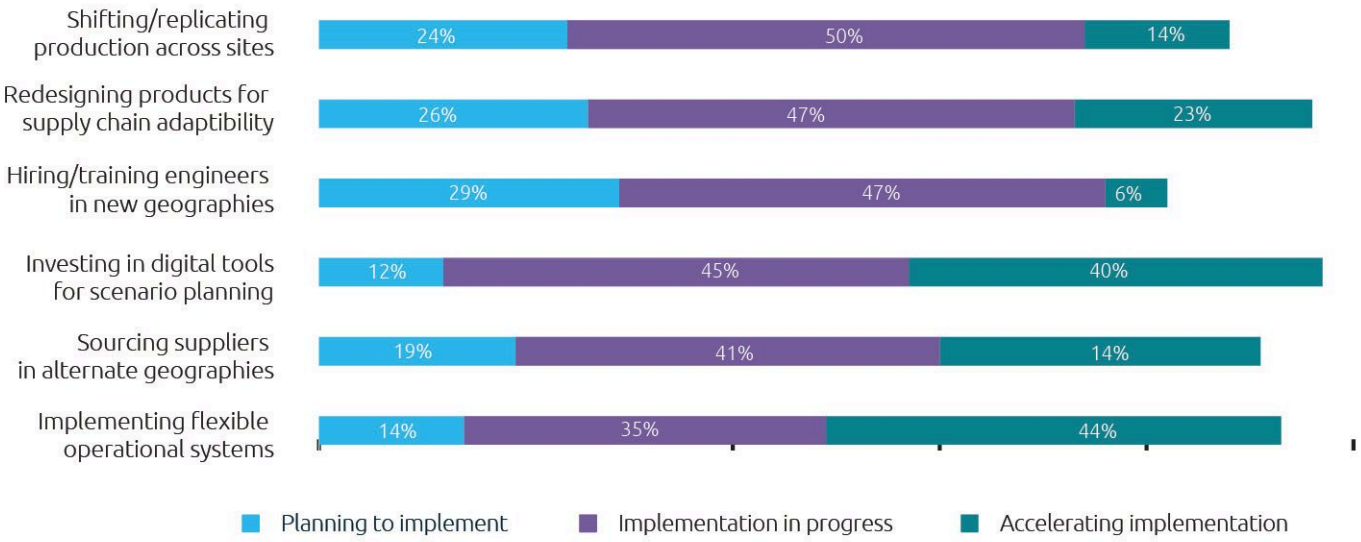
79%
are implementing flexible operational systems to dynamically scale production

71%
cite limited supply chain flexibility

67%
struggle to reallocate resources

Increasing organizational agility

Actions to improve global agility over 2-3 years (Chart 3)



Nearly eight in ten organizations (79%) are implementing flexible operational systems, including modular production lines, adaptive staffing approaches, and real-time scheduling, to dynamically scale capacity up or down in line with demand (Chart 3). Such approaches also make it easier to transfer or scale capability between facilities when needs change.

At the same time, 85% are investing in digital tools for scenario planning to anticipate external shocks, like tariffs or regulatory changes, and to model impacts and responses with greater precision.

We see several examples of this, for example Joaquin Duato, Chairman & CEO of Johnson & Johnson, has made digital transformation a central plank of his leadership, deploying predictive analytics that have trimmed inventory write-offs by an estimated $400 million.

However, achieving true agility remains challenging

Two-thirds of executives (67%) report difficulty reallocating resources – whether people, capital, or assets – across projects or geographic regions, limiting their ability to pivot in real time. Supply chain rigidity is also a major barrier, with 71% citing insufficient visibility or flexibility across sourcing and distribution networks. Internally, organizational resistance to change persists, with 61% of leaders noting cultural or structural pushback that slows or complicates transformation initiatives.

An agile organization requires joined-up digital systems across silos and supply chains, data-driven intelligence, standardization, modular infrastructure and a collaborative culture. While agility is a strategic objective in its own right, with its own internal investment demands, its success will also depend on digital technologies and flexible global operating models – which are the subject of the following sections.

Source: [4] Siemens – Corporate blog, "Driving Pharma Manufacturing Excellence: Sanofi, Capgemini and Siemens on Scaling MES with Generative AI", September 2025.

Agility in action: Manufacturing upgrades at scale

Sanofi's MARS (MES Accelerated Roadmap @ Sanofi) program is delivered in collaboration with partners, including Capgemini [4]. MARS is a large-scale digital manufacturing initiative to standardize the company's Manufacturing Execution System (MES) globally and replace paper-based batch records with electronic ones.

Using a standardized MES model and advanced technologies – including generative AI to help convert recipes and workflows into digital MES configurations – the program has delivered significant gains. Those include a 70% reduction in batch review time and an 80% decrease in production deviations. MARS has been deployed at 25 manufacturing sites and used by more than 4,000 people, with a roadmap targeting 52 sites by 2027.

Agility in action:
Real-time monitoring for agile operations

A global biotech & diagnostics leader, working with Capgemini and other partners, is transforming manufacturing operations through a cloud-based industrial data platform, which enables seamless integration of operational and enterprise data across global sites. The project replaces fragmented data silos with a single, contextualized source of truth. This dramatically reduces infrastructure complexity and data volumes, while improving accessibility for business and engineering teams.

Within less than three months, the project enabled self-service analytics, and digital maintenance and predictive monitoring use cases of critical assets, like centrifuges and bioreactors. These capabilities support faster insights, improved equipment reliability, and scalable analytics deployment.

02

Embracing AI and new technologies

Life sciences organizations are increasingly embracing AI alongside a broader set of digital technologies to address speed, cost, and complexity across engineering and R&D.

These technologies are seen as practical enablers to improve productivity, strengthen compliance, and increase operational resilience.

While adoption is progressing, the challenge lies in scaling and integrating these solutions effectively within complex, highly regulated environments.

Success increasingly depends on combining technological innovation with robust governance, clear operating models, and strong change management. Organizations that can move beyond pilots to embed AI and digital capabilities end-to-end are better positioned to translate ambition into measurable impact.

Highlights

74%
will increase AI investment by 10% or more in the coming years

72%
are concerned around AI reliability and accuracy

68%
see AI benefits across the R&D lifecycle, from concept design to compliance to manufacturing

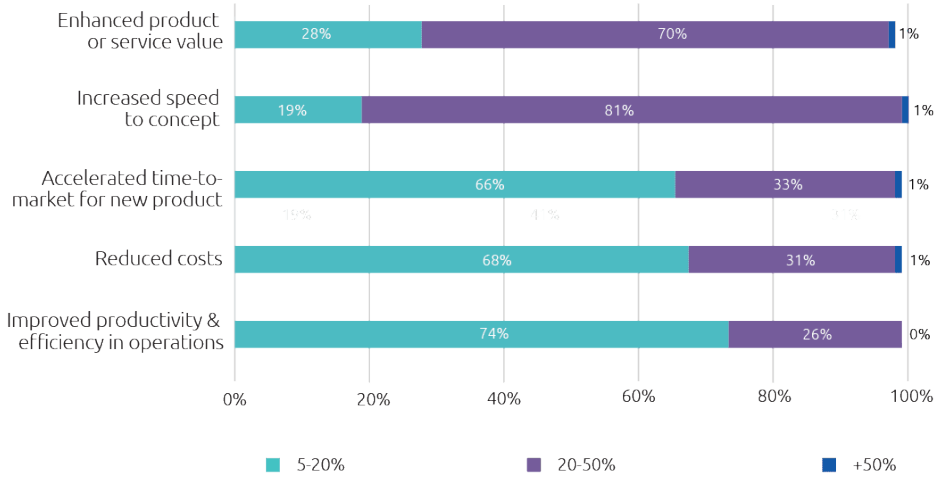
60%
see AI as highly transformative

AI is one of the biggest disruptive threats and biggest opportunities

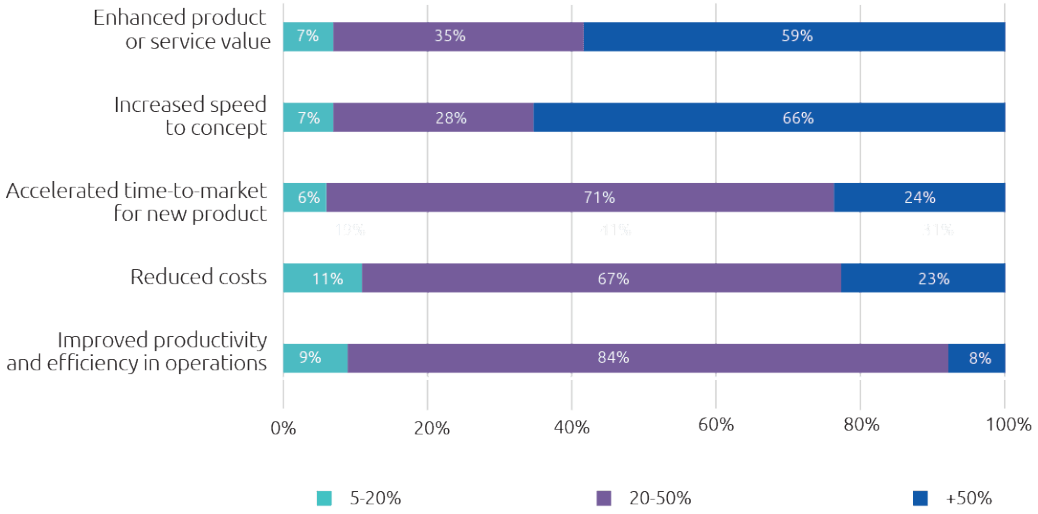
AI was seen as having high transformative potential by 60% of respondents. Half to two-thirds see it as transformative in areas from research to maintenance support (see *AI in action* at the end of this section). 58% saw it as having high potential to address one of their top strategic priorities: reducing the time required for compliance.

Indeed, many executives are already seeing benefits from AI in delivering strategic priorities, with significant AI-related improvements in productivity, cost reduction, and time to market (Chart 4). And there are high expectations of much greater benefits in the near future (Chart 5).

AI benefits already delivered (Chart 4)



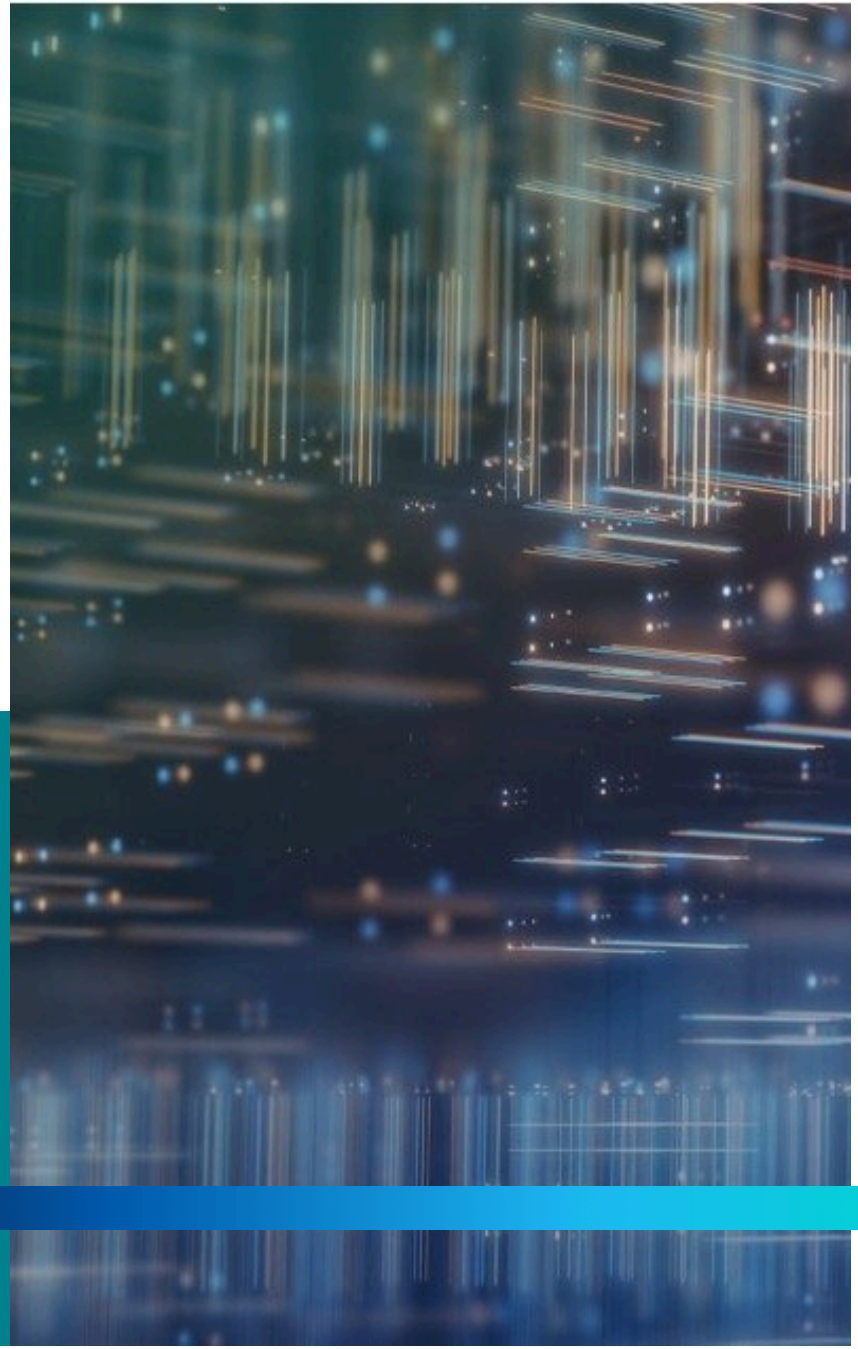
Expected AI benefits over the next 2-3 years (Chart 5)



Embracing AI and new technologies

Life sciences leaders are optimistic about AI. In fact, 94% believe they are ahead of their peers. This suggests that, in most companies, there is a sense that they are advancing well with AI, even if they do not realize that their competitors are doing the same.

Organizations are also quite mature in their use of AI, at least the traditional sort. Most (86%) are at the deployment stage – with live AI in limited areas, but not fully integrated across the business. For generative AI (GenAI), most (82%) are in the piloting stage, and for agentic AI, 84% are still exploring its potential.



> *"Making human-machine collaboration more widely available allows engineers to accelerate code development, increase innovation and tackle skilled labour shortages."*

Roland Busch | CEO, Siemens AG [5]

Source: [5] Siemens – Press release, "Siemens and Microsoft partner to drive cross-industry AI adoption", October 2023.

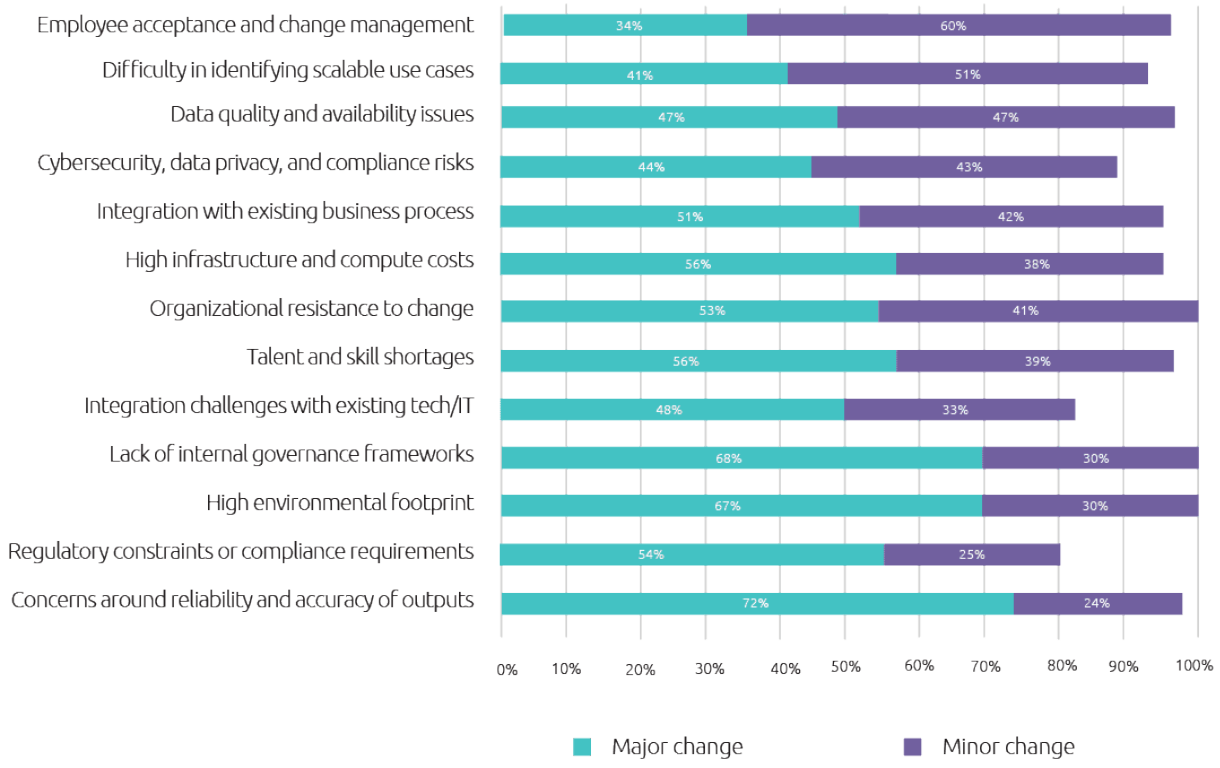
AI investment set to surge, but challenges are on the horizon

Ambitions are high. 47% say their organization has allocated 5-20% of its total engineering and R&D budget to AI-related initiatives, and over 90% say that budget will increase by 5-20% over the next 2-3 years (Chart 6).

But AI – especially GenAI – comes with challenges. Respondents cited concerns about AI, ranging from worries around reliability and accuracy of outputs (72% saying a major concern) to the high environmental footprint of GenAI and agentic AI (67%), to their own lack of internal governance frameworks for GenAI and agentic AI (68%). This is slowing adoption (Chart 7).

These are all genuine concerns to navigate, but perhaps the biggest threat to life sciences companies is not embracing AI and finding that it does live up to its promise... for their competitors.

Barriers to scaling Gen AI and agentic AI for engineering and R&D beyond pilot stage? (Chart 7)



AI across the Life Sciences lifecycle

Activity	Research & concept development	Design & prototyping	Simulation & testing	Documentation, compliance & IP management	Manufacturing & operations	Maintenance & support
Percent saying AI will transform in 2-3 years	**49%**	**45%**	**38%**	**58%**	**48%**	**68%**
AI opportunities	**AI-powered literature mining, feasibility analysis, idea generation**	**Generative design, AI-assisted CAD, rapid prototyping, design optimization**	**AI-enhanced simulation, anomaly detection**	**AI-generated documentation, automated compliance checks, patent landscape analysis**	**AI-based production scheduling, computer vision for quality control, predictive supply chain planning, autonomous material handling**	**AI-based diagnostics, predictive maintenance planning, intelligent support bots**
Case studies	Pfizer is using GenAI to help scientists search and extract insights from vast volumes of research data – often up to 20,000 documents per drug. By enabling natural language and voice-based queries across multiple repositories, AI significantly reduces manual effort. This potentially saves up to 16,000 hours and can accelerate early-stage research.[6]	Medtronic is exploring the use of generative AI to support engineers in medical device research and development. These technologies help teams generate and evaluate design concepts, accelerate early-stage engineering work, and improve productivity by assisting – rather than replacing – engineering expertise.[7]	Roche is applying AI-driven models to support drug discovery and development by improving molecular understanding and supporting data-driven scientific decision-making. These approaches help researchers prioritize targets and explore complex biological interactions more effectively.[8]	A German MedTech company partnered with Capgemini to automate the extraction of regulatory requirements using GenAI. Using large language models and computer vision, the solution interprets text, tables, and images from regulatory documents, and standardizes outputs. The tool reduced manual effort and errors, achieving 60% resource optimization while also improving compliance accuracy. It was designed for scalability and has now been adapted to a variety of regulatory entities and cases.	Sanofi, Capgemini, and industry and academic partners are advancing biologics manufacturing through CALIPSO, a €17.5 million initiative to modernize bioproduction. Using advanced sensors, data platforms, and digital twins, the project improves process monitoring, prediction, and control. This could potentially increase productivity tenfold, while accelerating biologics development and improving batch quality.[9]	A pharmaceutical company partnered with Capgemini and software providers to implement an industrial DataOps platform across its sites. This unifying of data for intelligent asset lifecycle management has increased capacity utilization by 10%, extended asset lifetimes by 20%, and reduced human-error risks by up to 80%. Johnson & Johnson is using advanced analytics and AI-enabled planning tools to strengthen supply-chain resilience. These capabilities support improved planning, forecasting, and cold-chain management across global distribution networks.[10]

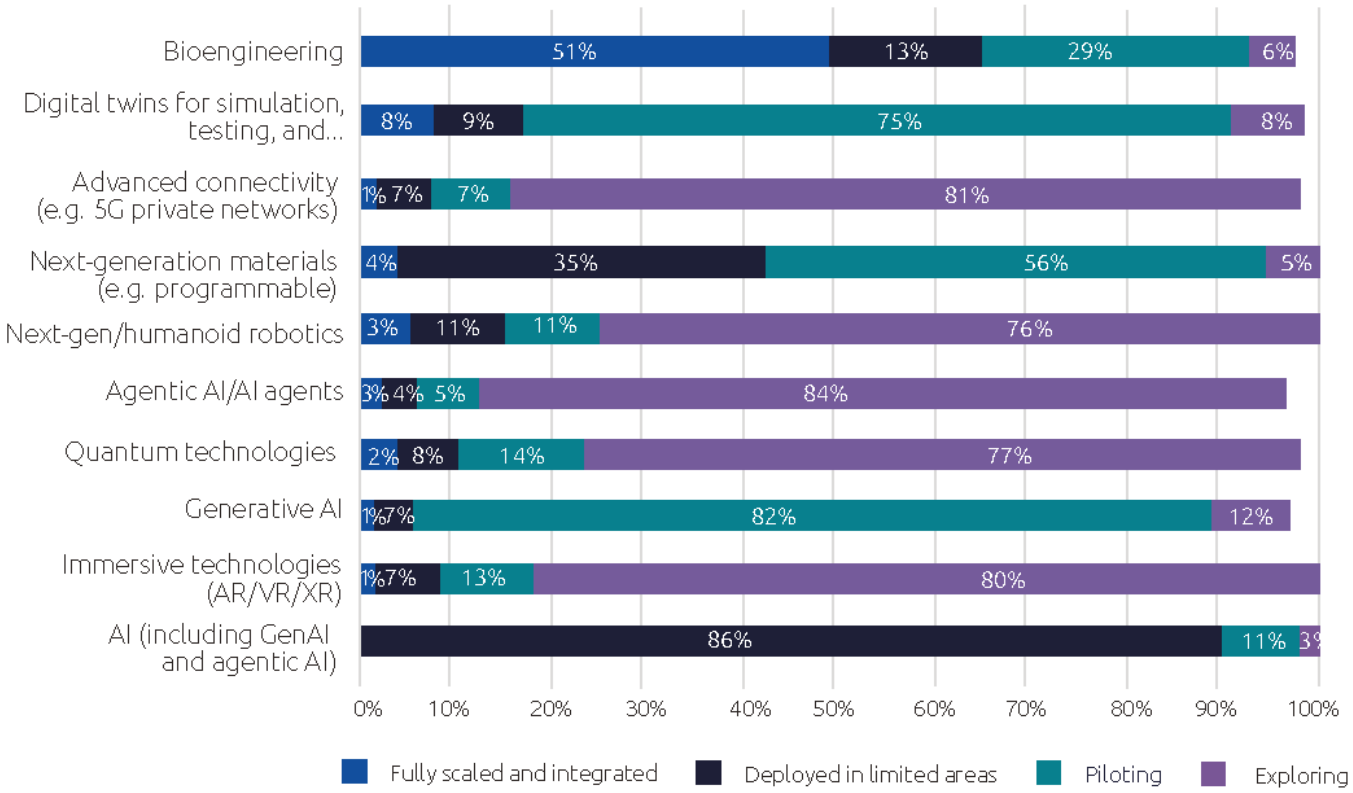
Sources: [6] Pfizer, "Artificial intelligence on a mission to make clinical drug development faster and smarter", 2024. [7] Medtronic, "AI in Healthcare Technology", 2024. [8] Roche, "AI revolutionising drug discovery and transforming patient care", 2026. [9] Sanofi – Press release, "CALIPSO project", 2021. [10] Johnson & Johnson, "How Johnson & Johnson's innovative supply chain technology is helping transform how we work and live", 2024.

Beyond AI: the wider digital innovation landscape

Leaders are exploring a broad set of technologies – but scaling remains uneven.

The excitement of AI should not obscure the value of other technologies, and indeed respondents showed appetite for a wide range of technologies with potential to improve efficiency, innovation, cost, and compliance (Chart 8).

Maturity of technology use (Chart 8)



While optimism for technology was positive, some results raise potential concerns. 80% of respondents said they were exploring immersive technologies, yet this has been the case for years. This suggests either they are not delivering as hoped – at least not at scale – or something is blocking progress.

Digital twins could be a similar story. In engineering, digital twins have already delivered some transformative outcomes, yet in life sciences, 75% are still only at the piloting stage, and just 9% at the deployment stage. This is low considering the technology has proven use cases, but not out of line with other industries.

When it comes to deploying digital technologies, AI – at 86% deployment – seems to be significantly ahead of the game.

Newer technologies, including humanoid robots and quantum, were on the agenda, with 76 and 77% respectively exploring these. It's too early to judge progress on either, but reassuring to see frontier technologies like these being taken

Innovation in action:
Quantum computing for drug discovery

Quantum computing is being explored as a future complement to classical high-performance computing in early-stage drug discovery. Its primary potential lies in molecular simulation and quantum chemistry, where quantum methods could, in the long term, model electronic structures and reaction mechanisms with higher accuracy than classical approaches. In the near to mid-term, most applications rely on hybrid quantum–classical approaches, combining classical simulations, AI/ML models, and quantum-derived features. These approaches aim to improve the quality of molecular predictions and candidate prioritization, rather than replace existing computational chemistry and laboratory workflows.

03 Shifting to global operating models and accessing global talent

Global operating models hold promise for all three priorities: increased agility, faster innovation, and cost reduction. Accessing global talent pools can bake in agility and resilience, removing bottlenecks that slow innovation and production caused by talent scarcity in traditional operating locations. This transformation is not new, but the data implies a change in approach – from a cost-cutting exercise to a strategic lever that enables flexibility and timescale reduction.

Over half of companies (57%) already operate strategically focused offshore/remote Centers of Excellence and 77% plan to increase their use. Such Centers of Excellence give organizations a centralized hub of specialized expertise – with standardized best practices, optimized processes and cutting-edge technologies – that support high-quality, high-productivity delivery at scale.

76% already right shore and co-source specific engineering & operations activities – and 62% plan to increase this approach for defined work packages over the coming years.

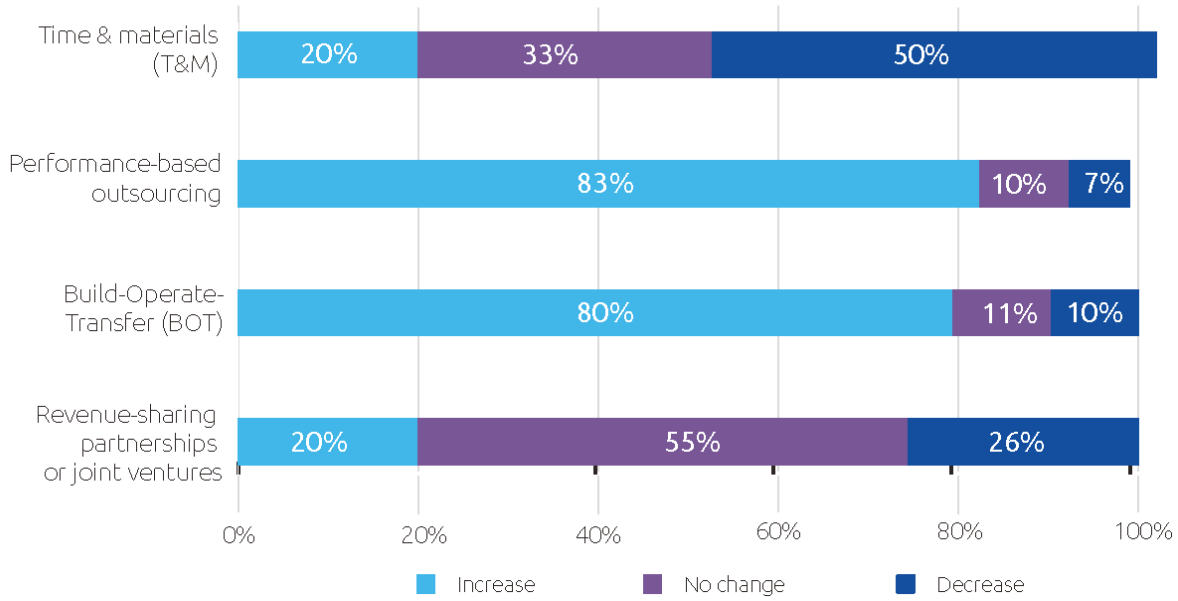
Highlights

83%
intend to increase performance-based outsourcing

77%
plan to expand offshore Centers of Excellence – a shift toward more strategic global models

76%
already outsource engineering or R&D activities

Planned use of partner operating models over the next 2-3 years (Chart 10)



Other signs of a move towards more strategic global operating models emerge from the data. For example, 83% plan to increase performance-based outsourcing, moving away from the traditional time & means (T&M) which is decreasing significantly (Chart 10). There is also an increasing trend of Global Operating Centers leveraging Build, Operate, Transfer operating models – expected to increase in usage for 80% of respondents, despite being used by only 9% today.

It's also notable that three-quarters of the respondents are also investing in digital modernization (e.g. cloud-native platforms, DevOps, digital twins), which will be vital to enabling truly global operating models.

A good example of all of these trends comes from compliance, where growing pools of compliance expertise in near-shore and offshore locations are ensuring work can be delivered with the same rigor as in-house. These dedicated compliance transformation teams – armed with purpose-built platforms and technologies – are even speeding up the compliance process.

Taken together, these shifts suggest that life sciences companies are not simply outsourcing more – they are transforming differently. The model is becoming more strategic, more global, and more aligned to long-term strategic plans, positioning external partnerships as a critical enabler of scale, speed, and innovation across the R&D value chain.

Global models in action: Real-time monitoring for agile operations

A healthcare manufacturer was performing all its compliance on site, across many facilities. A transformation programme allowed it identify compliance processes across sites that could be performed remotely by sharing assessment data. They found much of their analysis and documentation work could be done remotely, and set up a nearshore Centre of Excellence in Portugal to handle compliance across multiple sites. Centralizing the work allowed them to standardize many processes, delivering the same service faster and at lower cost.

Global Capability Center (GCC) in action: Centralized management of R&D tools

R&D teams at a pharma company relied on a range of specialist digital tools from different suppliers across the R&D lifecycle, from discovery to clinical and regulatory stages. However, issues with performance and integration frequently slowed innovation and diverted scientists from research.

A GCC transformation initiative established a centralized team in India, with deep expertise, to manage the digital R&D toolset end-to-end. This team was responsible for product customization, integration, maintenance, and troubleshooting across the discovery lifecycle, at all sites. That led to a simpler software lifecycle, with products working more reliably, and issues resolved faster, allowing researchers to focus on research. Centralizing the entire function (and delivering it as a single service) achieved significant cost savings and improved cost visibility across the business.

Barriers to delivering transformational change

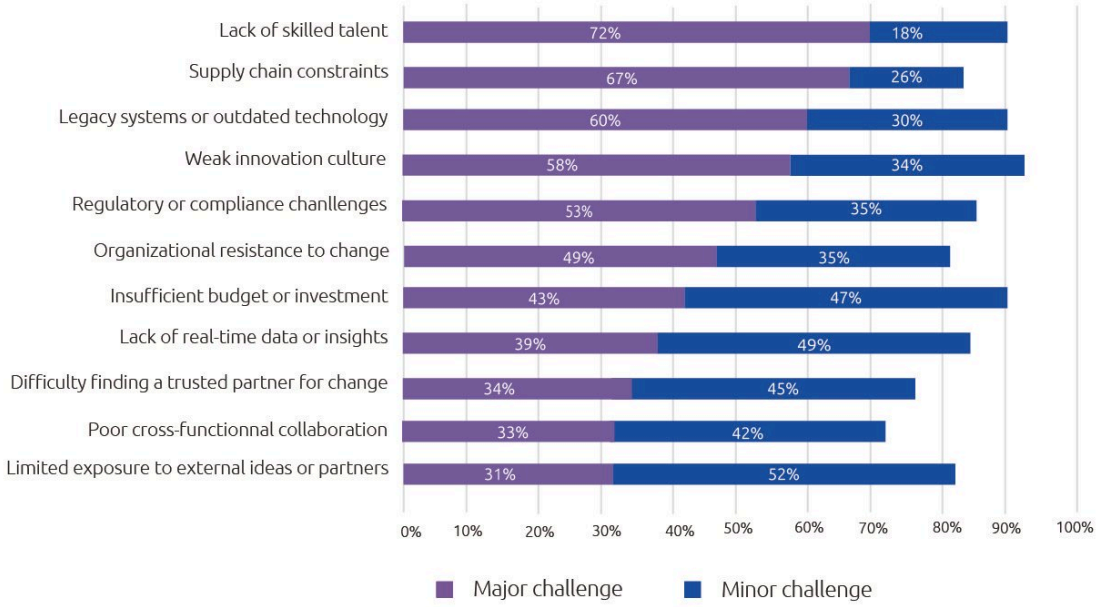
Why transformation remains hard to execute

Structural, cultural, and technical barriers are slowing progress

Despite strong ambition across agility, AI, and global operating models, life sciences organizations face deep-rooted structural and cultural barriers that constrain their ability to execute change at the speed and scale required. These obstacles cut across talent, technology, culture, and operational foundations, creating friction that slows the journey from concept to commercialization.

A shortage of technical expertise is one of the most pervasive barriers: 72% point to talent shortages as a significant constraint on reducing costs or accelerating time to market. This skills gap is compounded by budget pressure – 43% identify budget constraints as a major challenge – limiting the ability to invest in new tools, new capabilities, and the organizational transformation required to support them (Chart 11).

What holds back your organization's ability to reduce costs, accelerate time to market, and scale effectively? (Chart 11)

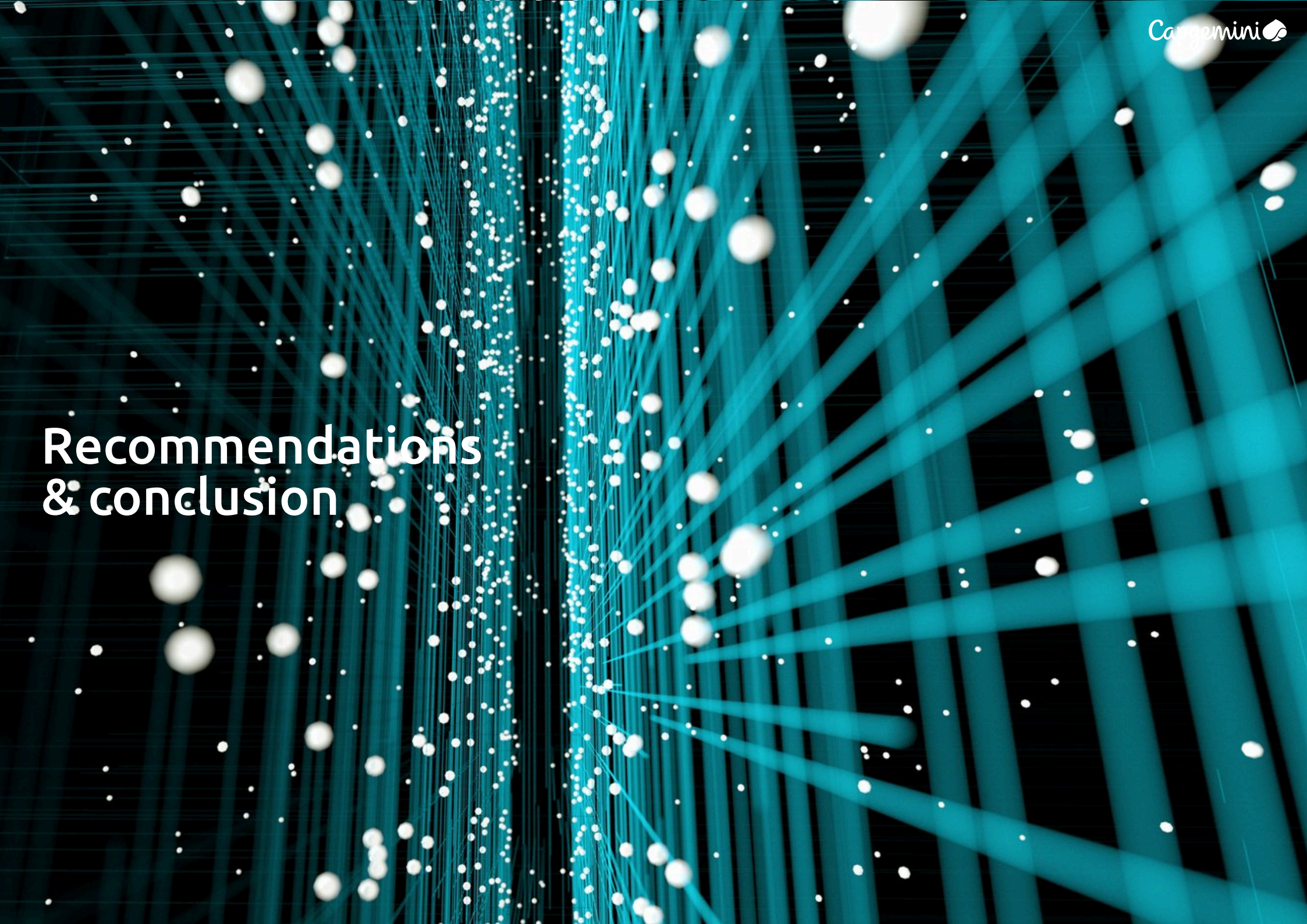


Cultural barriers present an equally significant hurdle. Half of respondents (49%) say organisational resistance significantly slows innovation, while 58% report a weak innovation culture as a major factor holding back progress. This can lead to slow decision-making, risk aversion, and difficulty embedding new ways of working, all of which undermine the effectiveness of agility initiatives.

Ageing systems also play a defining role. Integration complexity with legacy infrastructure is a major challenge for 60%, restricting their ability to modernize, scale, or deploy advanced digital and AI capabilities. These systems limit interoperability, slow experimentation, and raise the cost and complexity of change.

Operational constraints further amplify these issues. Supply chain limitations are a major barrier for 67% of organizations, challenging their ability to respond quickly to disruption or scale new innovations.

Taken together, these barriers reveal a sector eager to transform but constrained by foundational gaps in skills, culture, technology, and operational resilience. If businesses are to fully capture the benefits of true organizational agility, global talent, and AI's transformative potential, they must address these challenges.



Recommendations & conclusion

Five imperatives for leaders to close the execution gap

The findings of this report present a clear message. Geopolitical volatility, accelerating AI, deepening talent shortages, and sustained cost and timeline pressures are converging. They demand bold, coordinated, and sustained transformation.

Based on the evidence gathered in this report, and our ongoing conversations with the industry, we set out *five recommendations* that we believe must define the industry's strategic agenda in the years ahead.

1

Make regulatory compliance a competitive advantage, not a constraint

We recommend life sciences leaders invest decisively in AI-powered compliance automation, embedding natural language documentation tools, automated regulatory submission workflows, and intelligent risk-flagging systems across the product lifecycle. Compliance can be made 20-30% faster when redesigned around dedicated global compliance Centers of Excellence, staffed with domain specialists, and equipped with purpose-built digital compliance platforms.

To truly support agility at scale, organizations must move away from sequential, end-of-process compliance toward parallelized, continuous compliance. Compliance should be checked, ensured, and evidenced throughout R&D and manufacturing as an integrated part of execution, rather than treated as a final gate

2

Build organizational agility as a structural capability, not a crisis response

True organizational agility requires investment in three mutually reinforcing areas. First, digital systems integration to break down siloed data environments and build real-time visibility across supply chains, operations, and R&D portfolios.

Second, modular infrastructure to enable rapid scaling of production capacity, talent pools, and technology capabilities without costly reconfiguration.

Third, cultural transformation by embedding innovation mindsets, psychological safety, and agile working practices from the executive level down. A digitized, modular organization becomes untethered from its physical location and able to act with true agility.

3

Shift from AI experimentation to AI-at-Scale

The priority action is not more pilots, but industrialization. Organizations must build the foundational infrastructure that enables AI to scale. That means harmonized data architectures, modern integration layers capable of bridging legacy systems, and robust AI governance frameworks that address the 72% of executives concerned about AI reliability. The human dimension must not be underestimated. Reskilling programs, human-AI collaboration protocols, and change management investment are essential to convert AI's promise into measurable operational and clinical value in a human-AI world.

4

Embrace global operating models as a strategic innovation capability, not a cost lever

We urge leaders to see their global operating model not as a cost-cutting exercise, but a route to faster innovation. Global Centers of Excellence should not be merely delivery hubs, but centers of domain expertise and advanced digital capability, and which can deliver continuous improvement across the value chain. Performance-based commercial models should replace legacy time-and-materials contracts, aligning partner incentives directly with innovation, quality, and time-to-market outcomes.

To effectively benefit from such Centers at scale, we recommend the Core/Context framework, popularized by Geoffrey Moore. This forces organizations to identify activities that are valuable but do not differentiate them from their competitors. These activities – think compliance – often make up most of the business's work, and can usually be safely outsourced to facilities with the digital technologies, local talent, and economies of scale to do things far more efficiently.

5

Address the talent crisis with the same urgency as the technology agenda

To address talent shortages and changes from AI, life sciences organizations must develop a multi-horizon talent strategy. That should combine aggressive near-term co-sourcing: leveraging global talent pools in high-growth engineering and AI disciplines, with sustained long-term investment in workforce development, reskilling programs, and academic and ecosystem partnerships. The integration of global operating models and AI tools can act as a multiplier, extending productivity of existing talent while broader capability pipelines are built.

The imperative for decisive action

The life sciences sector has always balanced scientific innovation with the demands of safety and compliance. But today's pace, scale, and complexity are stretching traditional operating models to their limits.

The risks are real. Many executives believe they could lose significant market share within five years, if they fail to accelerate innovation and reduce costs.

At the same time, there are strong reasons for optimism. Leaders are responding – investing in AI, reshaping global operating models to drive faster innovation and greater agility, and deploying digital technologies across the value chain.

And yet, ambition alone is not enough. As AI adoption accelerates across the sector, organizations must stop treating technology transformation and people change as separate efforts. The true differentiator is the ability to create human-AI chemistry – where skills, workflows, governance, and AI capabilities evolve together to augment engineering talent in day-to-day execution.

The organizations that will lead the next decade will be those that move decisively from strategy to scaled execution. The imperative is clear: act boldly, strategically, and at scale.

Authors

Nirlipta Panda

Global Head of Life Sciences
Capgemini Engineering
nirlipta.panda@capgemini.com

Caren Hochheimer

Global Life Sciences Marketing Lead
Capgemini Engineering
Caren.hochheimer@capgemini.com

Contributors

Thorsten Rall
Global Industry Lead Life Sciences
Capgemini
thorsten.rall@capgemini.com

Laurent Samot
Global Head of Digital & AI Manufacturing
Capgemini Engineering
laurent.samot@capgemini.com

Andy Vickers
Head of Technology for Engineering AI
Capgemini Engineering
andy.vickers@capgemini.com

Filipa Silva
Compliance and Quality CoE
Capgemini Engineering
filipa.silva@capgemini.com

Frédéric Burger
Global Head of Compliance, Quality, Regulatory and Environmental
Capgemini Engineering
frederic.burger@capgemini.com

Justin Melnick
Global AI & Data-Driven R&D Transformation Lead
Capgemini Invent
justin.melnick@capgemini.com

Atul Kurani
Head of Medical and IoT business
Capgemini Engineering
atul.kurani@capgemini.com

Patrick Bennani
Head of Data & AI CoE France
Capgemini Engineering
patrick.bennani@capgemini.com

Capgemini

Thank you for reading

Life Sciences Engineering and R&D Pulse Report 2026

www.capgemini.com

POWERED BY TURTL