

## Foreword



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The life sciences industry is on the brink of a new era of innovation. From AI-powered clinical trials to digital patient companions, every industry process and touchpoint is being reimagined or upended.

There's never been a more exciting time in life sciences. Whether you're in the pharmaceutical, biotech, medical devices, or animal health sector, there's abundant opportunity to catalyze change in every part of the value chain. Data-driven platforms can uncover gene therapies, mobile apps can aid remote patient management, and cloud platforms can drive valuable supply-chain synergies.

The biggest needle-mover though, seems to be generative AI. It will drive much-needed efficiency gains in many areas — research, drug safety, trial reporting, pricing, patient-centricity, and skills gaps across the enterprise. As well as driving efficiency, generative AI will also enable creativity, helping those working in life sciences to correlate research outcomes faster and engage with patients better.

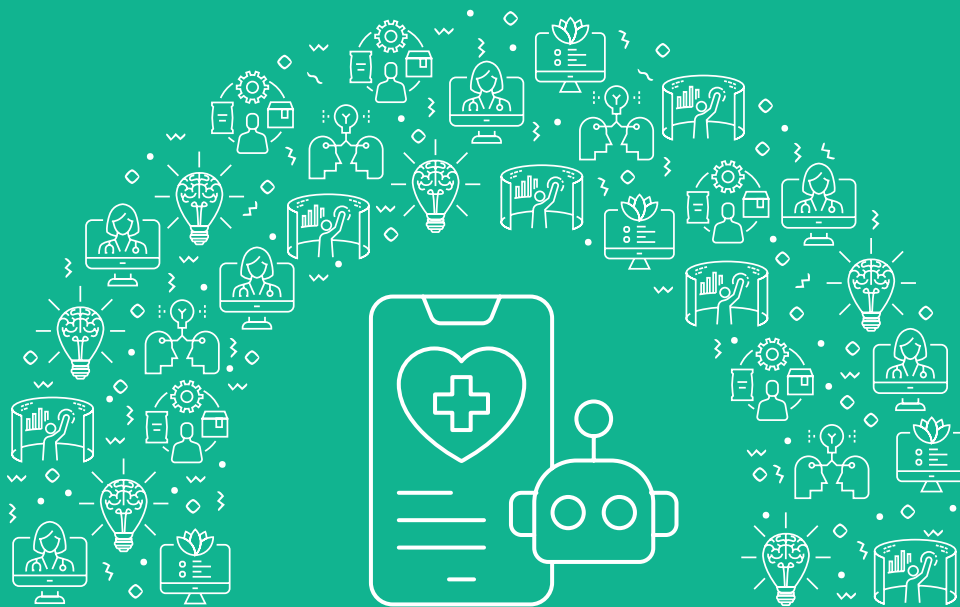
This isn't just giddy optimism. It is a belief formed by having seen the transformative impact digital, cloud and AI have had for our life sciences clients and their customers. This journal shares our insights and expertise with you. Our leaders and experts have drawn from their experiences working with industry chiefs to help them build their strategies and navigate their landscapes. This journal delivers our perspective on the technologies we think are profoundly changing the way we in the life sciences sector do our work.

Even as digital technology plays a greater role in pioneering innovation, synergizing operations, and personalizing journeys, we believe the essence of the industry remains the same as it has over decades — which is to enable breakthroughs for life.

It is in this spirit that we seek to serve at Infosys. I hope you find that spirit in our journal, and that its insights help you respond to the challenges and opportunities that will define the transformation agenda ahead.

#BreakthroughsForLife





## Executive summary

Life sciences is teeming with innovation, from new techniques for drug discovery and improvements in supply chain and manufacturing to better data integration across the ecosystem. At the same time, drug shortages, high costs of healthcare, and data privacy risks threaten to stifle this growth. Fortunately, digital advances and transformative technologies such as artificial intelligence (AI) and intelligent manufacturing are accelerating the evolution of this industry and improving lives of billions.

Infosys has created this inaugural life sciences journal to share our perspectives and aid industry leaders on their decisions related to these strategic topics.

Through research, workshops, and executive interviews, we identified seven trends at the

intersection of digital technologies and life sciences. We additionally surveyed 100 life sciences executives at leading firms on their views for planned investments among these seven trends.

Although generative AI is stealing the spotlight, demonstrating the impact it has had in such a short time, each of these seven trends will reshape the life sciences industry over the next two to three years. Nearly three-quarters (73%) of leaders we surveyed say their firms will spend between \$10 million and \$50 million on each of these areas in the next two years, and an additional 20% will spend more than \$50 million.

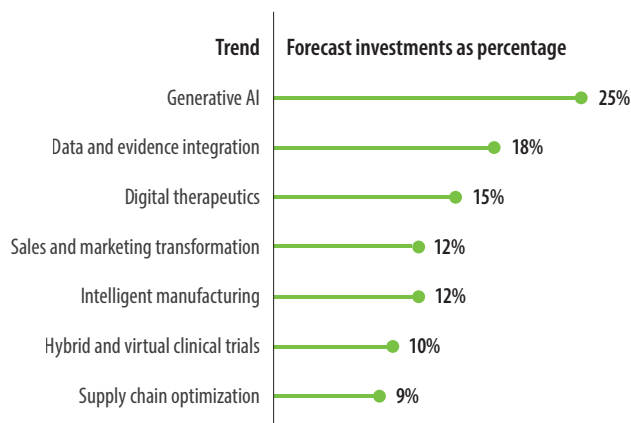
These seven trends will enable leaders to harness rapid change, transform their enterprises, and deliver breakthroughs for life.

**1. Generative AI** promises to drive innovation and efficiency, while requiring enterprises to enact rigorous safeguards for responsible and explainable AI. From chatbots and AI-assisted research agents, to sales representatives engaging with healthcare professionals to create rapid summaries of submission-related content, we anticipate that innovations built with generative AI will impact the entire life sciences value chain — with patients being the primary beneficiaries.

**2. Digital therapeutics** will continue to grow rapidly for the next decade. These new tools will drive personalization, improve efficacy of existing medicines and devices, increase access to patient data, rely on data across the patient journey, and strengthen brand positioning amid the consumerization of healthcare.

**3. Virtualization of sales and marketing** transformed how organizations engage with healthcare providers. The shift to virtual engagements initially driven by the pandemic has increased the adoption of hybrid sales professionals powered by digital tools. This is leading to better insights and a continuous feedback loop that allow sales reps to meet physicians at their point and time of need — first multichannel and then omnichannel.

**4. Hybrid and virtual clinical trials** will become the norm, saving time and money, and creating a diverse patient pool that leads to more accurate results, accelerates enrollment, and reduces patient dropout rates. Advancements in at-home data-



capture technologies, wearables, and remote monitoring will increase patient satisfaction and also create new opportunities from the large volume of data collected.

**5. Intelligent manufacturing** positions life sciences to move from industry tech laggard to leader as production of new therapeutics drives faster progress than other industries. The application of internet of things, big data, and AI will enable real-time process adjustment capabilities and optimize quality control to increase product efficiency, at the same time enabling simplification of regulatory compliance.

**6. Supply chain resilience** will become a necessary criterion as organizations manage their diverse portfolio of small- and large-molecule drugs. A shift to enterprise platforms that deliver planning at global scale while ensuring visibility of raw material and drug products at regional scale will enable the vision of a flexible supply chain network meeting their growth needs.

**7. Data and insight integration** across the healthcare ecosystem will lead to transformative new products and commercial successes as data, models, and knowledge are shared across the value chain of an organization. AI will play a big role in this integration, especially for data

navigation, linkage, and interoperability. Recent years have seen a significant adoption of digital technologies within the life sciences ecosystem, and I am confident that these trends will be a substantial enabler for change within organizations while enriching the lives of patients.