



Total Enterprise Reinvention in Life Sciences

Navigating to a New Performance Frontier —Biopharma



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About this report

Accenture conducted a survey in November 2022 of 1,516 C-suite executives across 19 industries in 10 countries to explore Total Enterprise Reinvention. We conducted economic value modeling and 360° value performance analysis to quantify the benefits of reinvention.¹

We identified critical disruptions and key priorities based on our annual life sciences CEO Imperatives Research: qualitative interviews with the CEOs of the top 40 life sciences companies by revenue. We also validated these trends in our annual CEO roundtable, where industry CEOs gather to discuss the industry's most pressing issues and upcoming opportunities.

We leveraged our proprietary New Science model to track industry players' pipelines. We analyzed the impact of intelligent technologies on biopharma businesses, such as the AI-mediated drug discovery landscape analysis and the analysis of how generative AI will affect future life sciences workforces. We also worked with innovation strategy experts from Accenture to ideate, shape and push the boundaries of the New Performance Frontier.





In our daily discussions with biopharma executives, common themes are purpose and ambition. Perpetually in pursuit of a new standard for putting patients first, companies are eager to advance beyond what is possible today with the intention to stimulate productive, actionable dialogue around the New Performance Frontier they envision emerging. This includes the the distinctive and next-generation capabilities that will shape tomorrow's New Performance Frontier and enable biopharma companies to provide the best treatments and outcomes for their patients.

Science and technology are converging in radical ways, calling for reinvention

The biopharma industry is facing one of the most unique and exciting moments in its history. The rate of scientific progress in the last decade has been groundbreaking, and we are on the cusp of a new era of science and technology innovation. Recent advances in technologies such as artificial intelligence (AI), generative AI (gen AI), machine learning, web3, computing and the metaverse are markedly changing how new treatments are researched, developed, manufactured, marketed, sold and provided to patients.





The evidence of progress is undeniable. For example, consider recent breakthroughs like AI-mediated drug discovery. We now have more than 50 drugs discovered through AI that are progressing through clinical pipelines.² This remarkable achievement showcases the tangible impact of AI in revolutionizing the field in specific areas such as discovery. But the impact is far-reaching across the biopharma value chain. For example, large language models have the potential to augment and/or automate up to 40% of life sciences professionals' working hours,³ and gen AI promises to radically shorten research and development (R&D) timelines while enhancing quality, improve manufacturing and commercialization processes and boost revenues.

New and more complex science enabled by technology is giving rise to a scientific renaissance. Embracing these advances in the context of continuous reinvention, biopharma companies can further improve patient outcomes, create more personalized experiences for patients and healthcare providers (HCPs), and increase their commercial success. A technology-first mindset anchored to a reinvention strategy will propel growth and momentum toward a New Performance Frontier.

Some biopharma companies are already picking up speed. In May of 2023, Absci, a US-based gen AI drug company, created and validated de novo antibody designs likely to have a higher probability of success at binding to targets of interest.⁴ While this demonstrates the value of intelligent technologies on drug discovery, the impact is broader across the full value chain — including portfolios, ecosystem partnerships, the competitive landscape, and the talent and skills needed to operate.

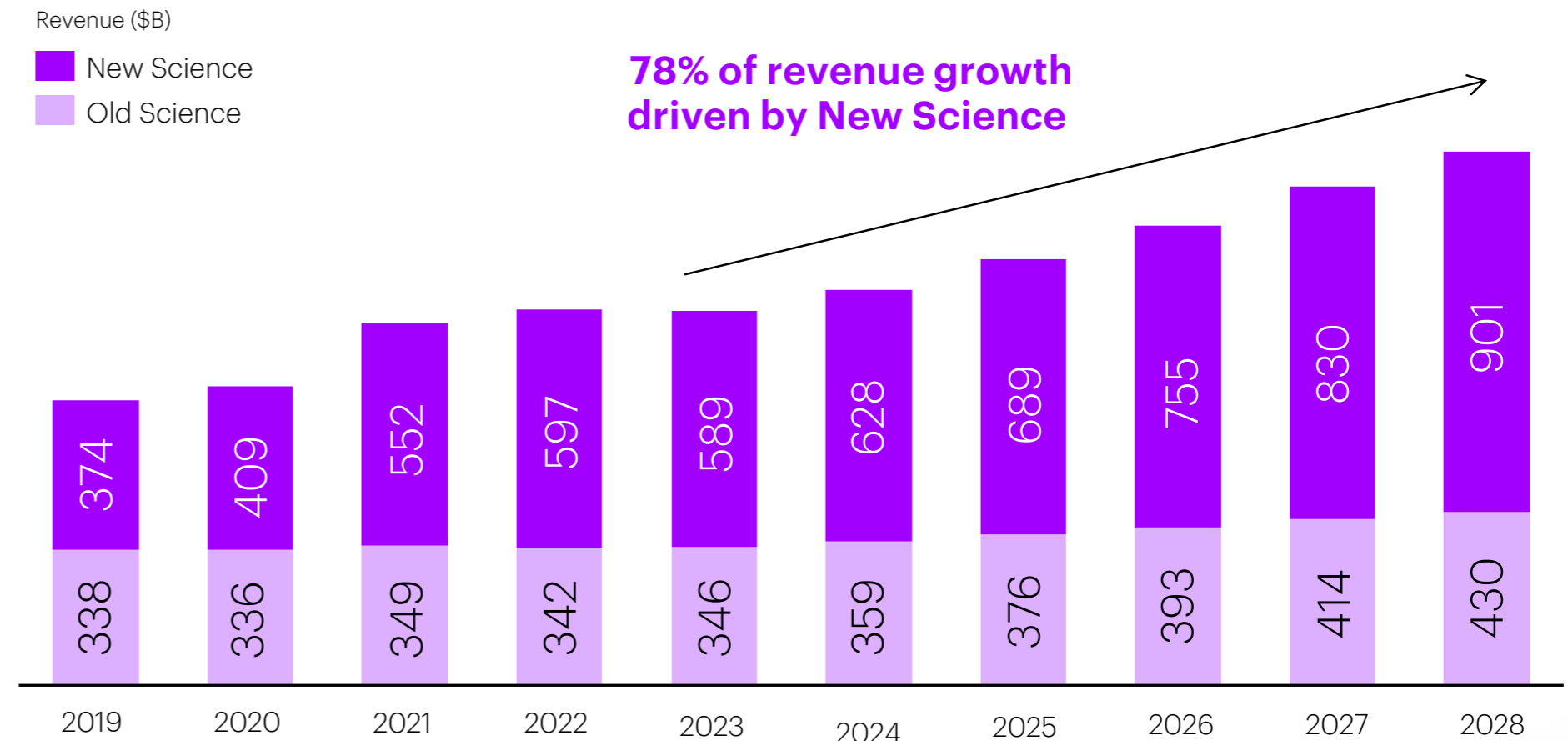
Scientific innovation is thriving, fueling growth potential

Take a look at what we call “[New Science](#).” It’s a dynamic combination of the best in science and health technology that’s filling unmet needs with more precise and effective treatments. New Science is expected to drive 78% of revenue growth in the next five years.⁵ See *figure 1*. It includes innovations such as oligonucleotide science, mRNA and siRNA, and more traditional small molecules that are developed to target new mechanisms of actions to treat unmet medical conditions.

One example of New Science is the CRISPR-based gene therapy that was recently approved for clinical use in the UK for sickle cell disease and thalassemia patients.⁶ What makes it most notable is the fact that the CRISPR technology is approved a mere decade after the initial publication of the research⁷, demonstrating the unprecedented pace of innovation. In cancer treatments, “remission” data points are starting to replace “response” data points. There has been a 70% increase in oncology trials with either a primary or secondary outcome of “remission” in the past five years.⁸ The industry has also made strides in the preventive space, with clinical trials increasingly demonstrating promising outcomes in diabetes treatment, weight loss and cardiovascular health.

Figure 1

New Science* continues to drive revenue growth



Source: Accenture research analysis leveraging Evaluate Pharma, Dec 2022

*Novel life science mechanisms, modalities and platforms addressing significant unmet patient needs using a unique combination of advanced science and technology

Despite scientific revolution, growth is expected to slow for most top 20 biopharma companies

During the pandemic, these companies set a new pace of innovation, bringing multiple vaccines and antivirals to market. However, due to pipeline expectations and loss of patent protection, the top 20 biopharma companies are entering a low-growth period that will plateau between now and 2028. These companies' sales are projected to grow by 4% CAGR on average over the next five years, while mid-size pharma and small biotechs are forecasted to grow by 13% CAGR.⁹ See figure 2.

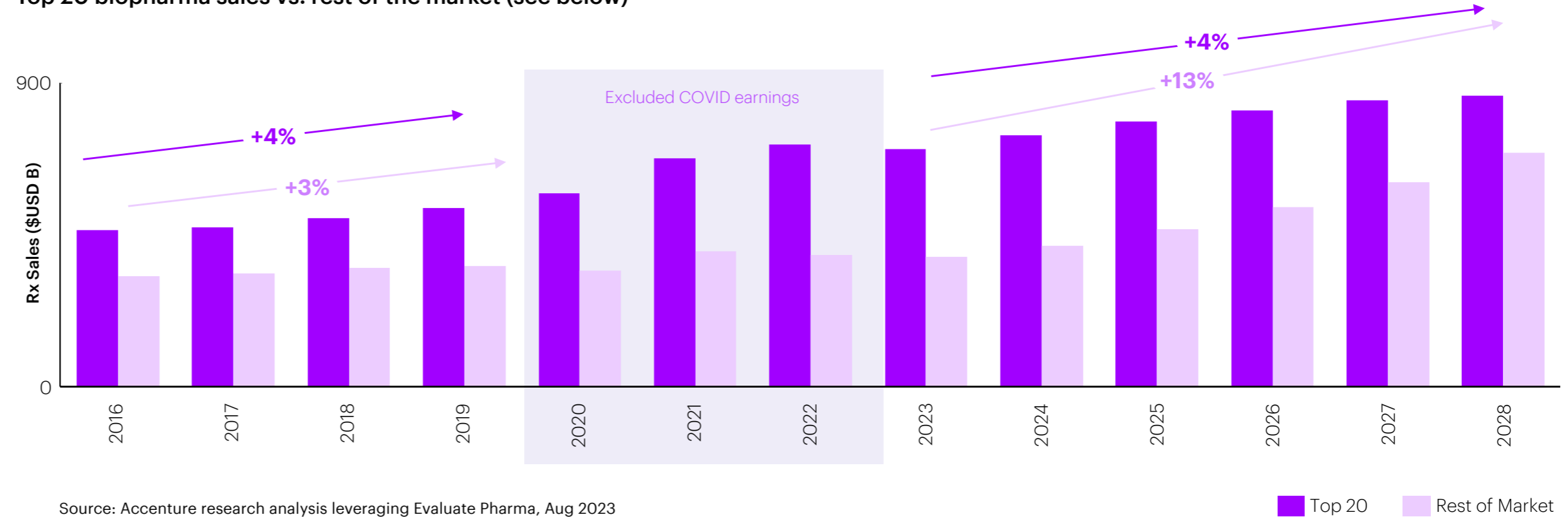
Additionally, private-sector pressures, government intervention via policy changes and public sentiment are industry-specific headwinds that companies will have to counteract, especially as drug-pricing pressures threaten revenues. For example, average net prices at large drugmakers declined in the past five consecutive years.¹⁰ Also, despite legal challenges from biopharma companies, the Inflation Reduction Act (IRA)¹¹ in the US will likely affect future biopharma

revenues, potentially \$230 billion in the next 10 years.¹² Moreover, the IRA sparked a new type of drug-pricing government intervention bullishness around the world.

Figure 2

The top 20 biopharma companies are entering a low-growth period that will plateau between now and 2028

Top 20 biopharma sales vs. rest of the market (see below)



Source: Accenture research analysis leveraging Evaluate Pharma, Aug 2023

The newest opportunities for growth and competition are being catalyzed by intelligent technology

Technology has shifted from being an enabler to a catalyst of accelerating science, providing hyper-personalization, predictability and efficiency. Intelligent technology is maturing at an exponential rate and affecting every aspect of the biopharma value chain.

In R&D, machine learning and AI have created opportunities to simulate scientific experiments *in silico*.¹³ They enable better ways of designing trials, profiling and identifying patient groups that are more likely to respond positively to treatment, as well as foreseeing and avoiding potential adverse events. Finally, the availability of patient outcomes data allows companies to track and report their impact, particularly for underserved populations.

Across the supply chain, platforms, cloud, AI and automation provide end-to-end visibility

and help increase resiliency to supply network changes through the use of digital twins for scenario modeling. These technologies deliver simplified, intelligent and connected processes that digitize and automate manufacturing, enabling real-time quality control and process optimization with closed feedback loops. Critically, they also enable more data-sharing and transparency across supply chain networks and enabling functions, which increases efficiency and business agility.

In commercial operations, better availability and integration of data, platforms and AI have led to more sophisticated access and pricing models, predictive models for better HCP engagement and faster internal decision-making. Gen AI can create consistent, creative marketing materials and next-generation insights from multimodal data. This highlights

the transformative power of such technologies in enhancing various aspects of the biopharma sector, paving the way for faster and more efficient processes and improved outcomes.

Portfolio discussions are no longer limited to therapeutic area assets, they include discussions on bio-platforms, technologies, devices and solutions. New skills and interdisciplinary teams are required in this new way of doing business, where science and technology increasingly converge.

The ecosystem grows increasingly complex with tech and data start-ups, big tech companies and digital health players alongside more traditional players such as biotech.

A woman wearing a white lab coat and a purple hijab is looking at a smartphone. She is standing in a futuristic, brightly lit laboratory or medical facility. In the foreground, the back of a person's head is visible, looking towards the woman. The background shows a curved, metallic structure, possibly part of a medical scanner or a futuristic lab environment. The overall lighting is a mix of white and purple tones.

Intelligent technologies will continuously reveal radical possibilities and generate new challenges and opportunities for the industry.

Introducing: Total Enterprise Reinvention

Biopharma companies must strive to achieve more with less by reinventing how treatments are discovered, developed and commercialized. Powered by a technology-first mindset, they must find speed, agility, profitable growth and operating efficiency — adopting what we call [Total Enterprise Reinvention](#).

Total Enterprise Reinvention is a deliberate strategy that aims to set a New Performance Frontier for companies and, in most cases, the industries in which they operate. Centered around a strong digital core, Total Enterprise Reinvention helps drive growth and optimize operations. Reinventors are companies that embrace continuous, dynamic change across

every function and business area. Reinventors also understand the importance of using technology to connect individual purposes with the overall goal of continuous change, thereby unlocking human potential. Combining the power of technology and human ingenuity will enable enterprises to reinvent how they operate, how they go to market, how they partner and how they create value. A New Performance Frontier can help companies realize market leadership. Our research and experience with the world's leading companies tell us that the time to embrace Total Enterprise Reinvention is now.¹⁴



Total Enterprise Reinvention isn't a to-do; it's a to-be. It exhibits six characteristics.

Reinvention is the strategy.

It is no longer an execution lever. The entire C-suite, together, makes a deliberate decision to reinvent the enterprise to deliver 360° value.

The digital core becomes a primary source of competitive advantage.

It leverages the power of cloud, data and AI through an interoperable set of systems across the enterprise — including enterprise platforms, automation, integration and security — that allows for rapid development of new capabilities.

Reinvention goes beyond benchmarks, embracing the art of the possible.

Technology and new ways of working create a New Performance Frontier for organizations and the industries in which they operate.

Talent strategy and people impact are central to reinvention, not an afterthought.

Continuous change is enabled through new talent capabilities and technology solutions that reflect the ability of users to adopt them. Change management is a core competency.

Reinvention is boundaryless and breaks down organizational silos.

It tackles capabilities end-to-end with people, processes and data deeply connected across the value chain, inside the organization and beyond.

Reinvention is continuous.

It is no longer a time-defined one-off, but a capability continuously tapped by the organization. It is leadership-sponsored, focused on sharpening strategic differentiation and overall operational efficiency.



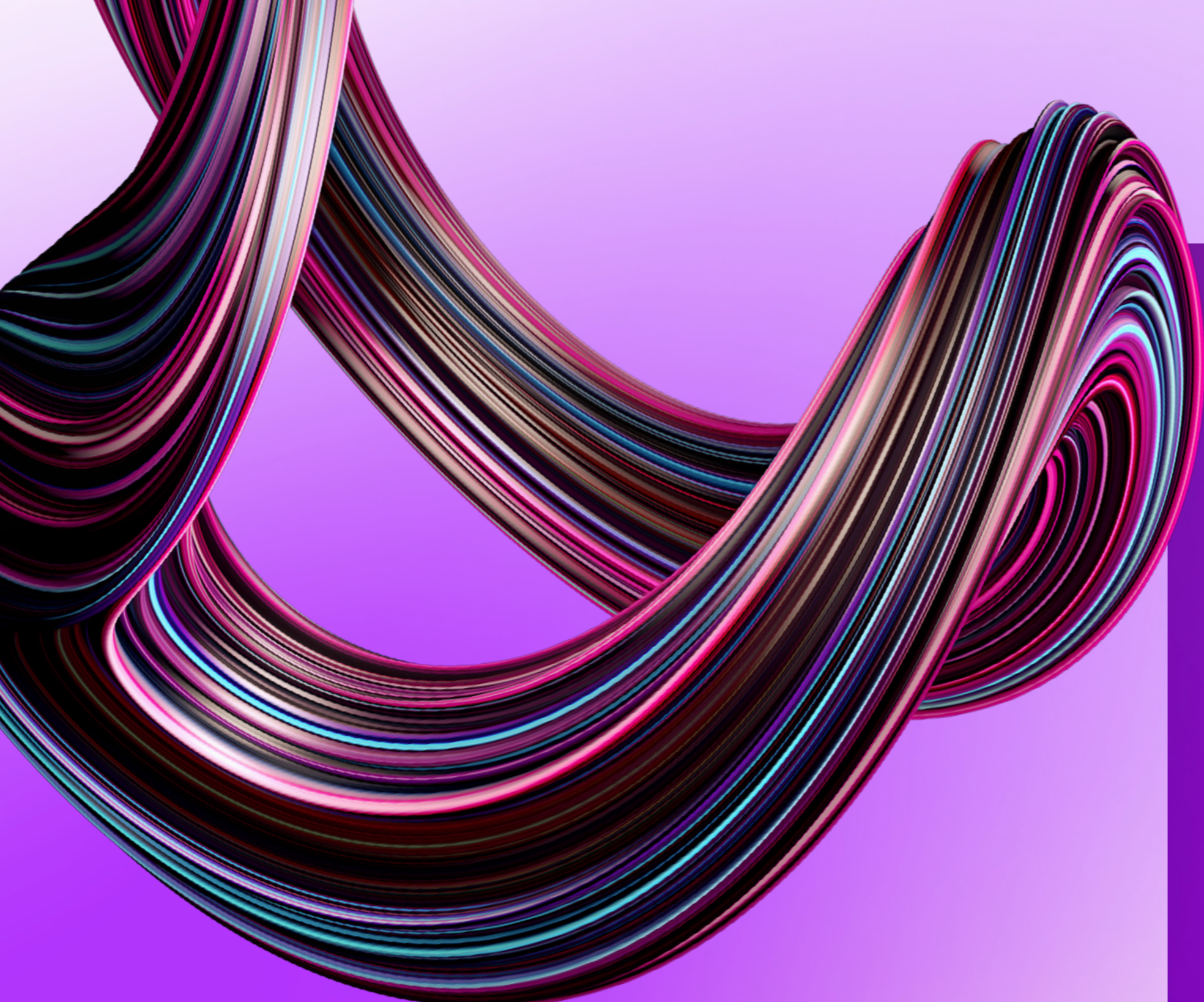
Navigating to a New Performance Frontier

Total Enterprise Reinvention is defined by the achievement of a New Performance Frontier that will drive success in the coming decade. The winners of the future — Reinventors — will go beyond current industry benchmarks to deliver new levels of value and human productivity, powered by the digital core. Reinventors recognize that change is a constant and, as a result, they embrace a mindset of continuous reinvention.

Over the past three years, some biopharma companies have made significant strides in transforming multiple parts of their organizations and businesses — enabling them to stay relevant and competitive. For example, some are no longer tethered to legacy IT systems in which scientists and chemists provide the data inputs, followed by a linear drug-development process. Instead, they've layered AI and machine learning onto the data to predict which molecules are likely to be successful in clinical trials. The ability to operate in dynamic and secure environments with global data accessibility, in real-time, is enabled by various levers and the digital core.

The digital core will enable biopharma companies to remain competitive because it focuses on the technology foundations and platforms that drive business-critical processes and most differentiated capabilities. A strong digital core is fundamental to all other strategic needs of an enterprise. Amplifying the role of technology in reinvention means shifting from a technology landscape of static, standalone parts to interoperable pieces intentionally integrated and leveraging the cloud, data, AI and more. The digital core consists of three layers:

1. **An infrastructure and security layer:** A modern, cloud-based IT foundation that is automated, agile and secure by design.
2. **A data and AI layer:** Where enterprise data becomes accessible at scale, with domain-specific, AI-enabled applications and platforms generating insights for decision-making. This connects and elevates trapped data, helping enterprises to ask new questions and find new answers that drive decision-making and the development of new products.
3. **An applications and platforms layer:** Where new experiences and ways of operating come alive — through modernized and new custom applications and platforms, or re-platforming on SaaS.

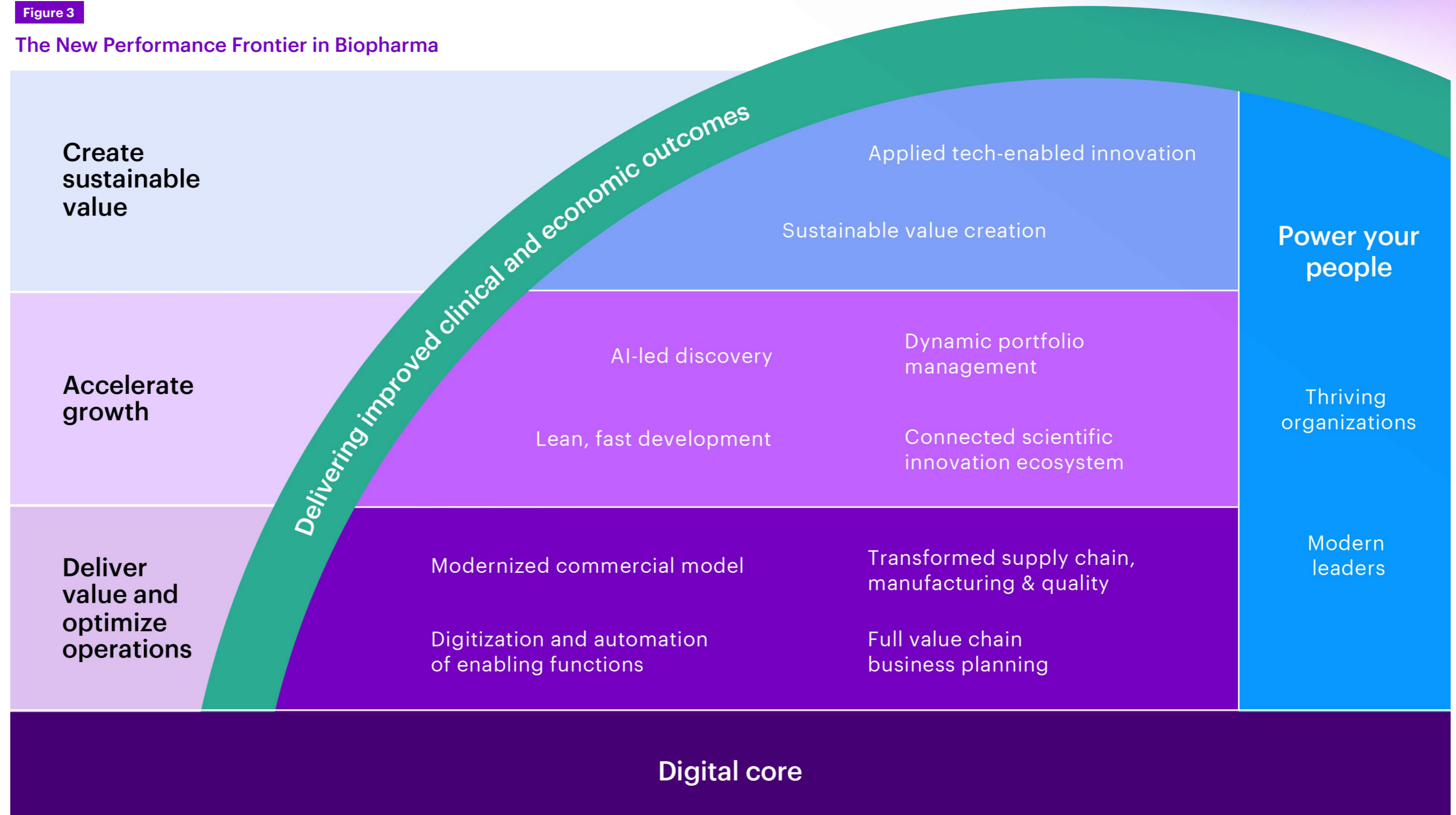


Building a strong digital core is not a one-time project. It must be continuous to incorporate new technologies and business capabilities. Companies driving toward a New Performance Frontier will leverage a digital core as the basis to reinvent the enterprise to:

- 1. Create sustainable value** for everyone involved, including patients and society, customers, health systems, internal operations and the workforce. Leverage tech-enabled innovation to fuel value creation.
- 2. Accelerate growth** with a comprehensive portfolio of assets, modalities and platforms available in-house or accessed through the ecosystem; scale technologies across discovery and development to improve productivity.
- 3. Deliver value and optimize operations** by improving the commercial success of launches, with an automated, digitized, intelligent supply chain, quality manufacturing, and enabling functions that support overall business strategy and improve resiliency.
- 4. Power your people** to enable new levels of human potential through the combination of technology and culture and instill public and internal trust by creating a purpose-led organization.

There are 12 capabilities that provide biopharma companies a course toward building the business-critical and market-differentiating processes that fuel continuous reinvention. These opens new growth opportunities, generate new levels of operational productivity, and create sustainable value not achievable before.

Figure 3
The New Performance Frontier in Biopharma



Source: Accenture

To help companies build the business-critical and market-differentiating processes that fuel continuous reinvention, the following pages take a deep dive into these 12 capabilities.



Create sustainable value

Move beyond today's standard to a new model of value creation. Biopharma companies must reexamine how they define and generate value and form a system that benefits all stakeholders in the value chain. They must rapidly test new and emerging technologies to fuel continuous value creation.

1 Sustainable value creation

What it means:

Take a holistic view of value creation, including value for patients and society, healthcare systems, the workforce and the company itself. Prioritize five key areas of sustainability: access, human-centricity, system economics, operations and workforce. Look beyond near-term gains to create a system that benefits all and the bottom line. Set, measure and achieve balanced goals that are equitable and sustainable with a focus on human-centric outcomes.

Why it matters:

By seeking sustainable value creation, companies can:

- Help ensure operations serve the objectives of developing medicines that improve patient outcomes and bring long-term cost savings for the healthcare system.
- Improve equitable access to treatments and increase environmental sustainability.
- Design an internal cost structure that is sustainable over the long term and incorporates a sound environmental, social and governance (ESG) strategy.
- Create sustainable value for the entire healthcare ecosystem, especially patients, payers and providers.

How to do it:

- Instill the importance of thinking about value more holistically and sustainably, not as an economic pressure to profitability.
- Establish an externally-facing report on outcomes with quarterly and annual targets.
- Fully integrate digital traceability of ongoing improvements in patient outcomes across populations treated.
- Align incentives for the whole organization to deliver value and continuously measure against committed goals.
- Use data and AI to enable collecting longitudinal data, better outcomes research (which can include tracking patient outcomes data, particularly for underserved populations) and economic modeling to understand cost impacts to the healthcare ecosystem.

Aspiring pioneers

Pfizer's growth strategy centers around the idea that delivering new, effective medicines to patients ultimately creates value for shareholders and other stakeholders. So, the company operates according to a "purpose blueprint" launched in 2019 with five clear, easy-to-understand objectives: unleash the power of people; deliver first-in-class science; transform the go-to-market model; win the digital race in pharma and lead the conversation. These points help drive decision-making at the company, particularly when it comes to technological, cultural and other improvement initiatives.¹⁵ Pfizer has publicly disclosed some of the metrics they track across the five objectives, such as tracking FDA breakthrough designations as a measure of innovation, number of transactions automated and number of digital programs. Recently, they have evolved these goals, making them more ambitious and centered around patients, rather than the number of breakthroughs. These goals are published as Purpose Blueprint 2.0 in 2023, which includes new core principles: trust is everything, science will win, disruption calls for innovation, time is life and execution makes the difference.^{16,17}

2 Applied tech-enabled innovation

What it means:

Continuously evaluate and incubate tech-enabled innovation, such as applications of gen AI, quantum computing and new bio-platforms. Aim to scale across various areas of the business. Accelerate experimentation by leveraging platforms and the cloud to share data internally (across the enterprise) and externally (with ecosystem partners).

Why it matters:

By adopting a tech-enabled innovation mindset, companies can:

- Sense and anticipate market changes due to exponential advances in technology, identify growth opportunities and seed new ideas faster and more effectively.
- Foster a culture of curiosity and experimentation. Get ahead of the curve in the race for talent and contribute to a virtuous cycle of success.
- Be prepared for continuous change and become organized to navigate ambiguity and meet demands for increased speed to market.
- Experience tangible gains. We've seen companies who embrace this philosophy experience 6.5X faster growth, 2.2X more profitability and 4.2X more cost efficiency.¹⁸

How to do it:

- Develop an adaptive strategy to identify priority opportunities, gather real-world insight through experiments; launch and scale market-changing products for resilient growth.
- Design and mobilize a tailored innovation capability to drive idea generation, incubation, experimentation. Scale both within the organization and in collaboration with a diverse array of ecosystem and venture partners.
- Foster an innovation mindset and embed this in the culture through immersive experiences and behavioral experimentation that infuse ways of working that prioritize humans and technology.
- Rapidly test new and emerging technologies using a combination of AI and external data leveraging an established innovation process to bring ideas to scale faster.

Aspiring pioneers

Flagship Pioneering, the venture-creation firm behind Moderna Therapeutics, has successfully launched more than 100 life sciences businesses. The company's mission is to conceive, make and commercialize breakthrough innovations in previously unexplored domains of the life sciences value chain. Its process is called emergent discovery and includes a rigorous set of activities. These include prospecting for ideas in novel spaces, developing speculative conjectures and relentlessly questioning hypotheses. Flagship's innovation process includes idea generation through "what if" hypotheses, exploring parallel efforts to expand learning, putting selection pressure on ideas and searching for the root causes when experiments fail.^{19,20,21}

Accelerate growth

Headwinds including near-term patent expirations and drug pricing pressures are putting pressure on biopharma to accelerate their R&D engines to replace revenues. At the same time, technology is rapidly catalyzing change, leading to more complex portfolios, broader ecosystems, new ways to discover therapies and accelerate clinical trials. Biopharma companies must reinvent how they discover and develop medicines, and manage their portfolios and ecosystems.



3 Dynamic portfolio management

What it means:

Biopharma portfolios used to focus solely on therapeutic area (TA) assets, creating isolated decisions. Now, portfolio management must consider bio-platforms, new modalities, capabilities such as AI-driven discovery, digital health solutions and economic & pricing implications (particularly with the rise of outcomes-based contracting). This calls for a dynamic approach to portfolio management based on continuous data input.

Why it matters:

Dynamic portfolio management offers benefits, including:

- Prioritizing and advancing projects with the highest potential for success, mitigating risks and maximizing returns in a rapidly evolving landscape of science and technology.
- Being at the forefront of science by taking a comprehensive approach that considers a wide range of factors, including bio-platforms, technologies, outcomes, etc.
- Optimizing commercial success based on early assessment of pricing and economic implications.
- Optimizing resources by identifying synergies across TAs as well as redundancies and gaps within the portfolio.

How to do it:

- Develop a unified, centralized strategy to help break down silos, leveraging data inputs and technology to manage and direct, in real time, TA assets, bio-platforms, modalities and technologies.
- Use digital products and solutions, such as high-data liquidity, and predictive and generative AI to better respond to market fluctuations. Disintermediated networks, for example, remove middlemen and speed information gathering and decision-making.
- Incorporate real-world data (RWD) and real-world evidence (RWE) from clinical, regulatory and commercial market dynamics.
- Use gen AI, natural language processing (NLP) and tools such as GPT-4 to enable chatbots that can quickly collect clinical and market feedback or provide guidance to protocol design and amendments.

4 AI-led discovery

What it means:

It's a new way of working in discovery, where multi-disciplinary teams of computational and scientific talent are working with diverse data sets that are effectively governed and enabled by AI/ML to rapidly identify targets that have a lower risk of failing and offer predictive modeling for lead identification and optimization.

Why it matters:

With an AI-led discovery strategy, companies can:

- Reduce discovery cycle times by two-thirds, as well as design therapies previously believed to be impossible (e.g., undruggable targets).
- Use AI-driven insights to generate robust, comprehensive pre-clinical datasets in support of clinical trials, improving probability of success.

How to do it:

- Facilitate efficient, fast target identification and validation, lead optimization and molecule design with cross-functional teams using diverse data sets that are governed. Scientists can infer new associations between genes and diseases and analyze databases while experiments are simulated in silico.
- Create a fully scaled R&D portfolio via AI-led discovery by embedding platforms in the scientific operating model. Use predictive AI tools in processes (e.g., target ID, biomarker ID) with customized disease models. Apply responsible AI governance principles to manage risks of dataset bias.
- Employ cross-functional data governance, management, connectivity and a FAIRification strategy with a formal cross-functional data model in place — making data and other research information accessible, interoperable and reusable.
- Build a rich partnership ecosystem to support niche and highly differentiated capabilities and strategic sourcing of new data sets to fuel insights.

Aspiring pioneers

Recursion Pharmaceuticals, a clinical-stage biotech firm, is redefining drug discovery using its proprietary Recursion Operating System (OS) and strategic collaborations. The Recursion OS, an iterative platform mapping complex biological and chemical relationships in the Recursion Data Universe, powers the company's AI-driven approach.²² With the acquisition of biotech startups, Cyclica and Valence Discovery in May 2023, Recursion bolstered its digital chemistry and gen AI capabilities.²³ One of the most significant milestones is its recent \$50 million investment and collaboration with NVIDIA. This collaboration involves optimizing proprietary biology and chemistry foundation models, granting access to NVIDIA's DGX Cloud resources and the potential hosting of Recursion's AI models on BioNeMo, NVIDIA's gen AI marketplace. Already, Recursion harnessed these resources to predict the ligand-protein interactions for around 36 billion compounds in the Enamine REAL Space, reported to be one of the largest searchable chemical libraries. The company's multidimensional strategy also includes employing BioHive-1 supercomputing and large language models for literature mapping and identifying opportunities for scientific arbitrage in the areas of unmet needs.²⁴

5 Lean, fast development

What it means:

Industry, regulators, providers and patients are calling for better trial design and execution strategies that will deliver faster approvals and lower costs. In addition, clinical trials should be inclusive, diverse and representative of target patient populations in the real world. Moreover, trial design and execution must demonstrably reduce timelines and costs in a scalable, durable manner. With the use of new clinical trial methods (e.g., decentralized clinical trials and synthetic control arms) and scaling the use of AI, companies can dramatically reduce cycle times and improve efficiency to simplify and accelerate clinical development. What's more, generative and language-understanding capabilities enable a new way of operating clinical trials, enhancing the ability to achieve high levels of accessibility and health equity to the most underserved populations.

Why it matters:

With leaner, faster development, companies can:²⁵

- Achieve up to 30% reduction in non-performing (zero enrollment) clinical sites and reduce costs by up to 15%, with study-time improvements of up to 18% (15–21 weeks) in certain trials.
- Patient-centric trials improve patient experience, significantly reduce patient burden and reduce recruitment timelines by up to 20% across disease areas.
- Improve data management with advanced analytics, AI/ML and automation techniques (from trial initiation to database lock), resulting in productivity gains and faster trial execution.
- Enable more efficient use of scarce resources (sites, trained staff, testing lab capacity), leading to 15% reduction of costs in some trials.
- Create the potential to contribute to double-digit improvement in overall asset value of the product, with reduced trial timelines resulting in faster launches. When scaled across the entire development pipeline, this is expected to drive sustainable revenue growth, leading to a 5–10% increase in market capitalization.

How to do it:

- Scale use of AI to simplify and accelerate clinical development and provide seamless and successful decentralization of trials where appropriate.
- Use data, analytics and AI/ML to help profile and define patient populations in ways that help predict response to treatment at earlier trial stages.
- Enable the development and execution of data and experience-driven clinical trials that accelerate time to market with products that meet patients' unique needs.

Aspiring pioneers

Sanofi has spent the last 10 years evolving a model designed to improve the patient experience in trials through its ACT4Patients program, created to fundamentally reimagine clinical research. Sanofi chose THREAD as the sole provider of unified decentralized clinical trials (DCTs) and electronic clinical outcome assessments (eCOA) technology for their Integrated Patient Platform (IPP). Their IPP will provide a single interface for patients' requests, including accessing data, procedure videos, scheduling appointments and uploading data.²⁶ One hundred percent of Sanofi's trials are set up with some form of remote data collection.²⁷

6 Connected scientific innovation ecosystem

What it means:

Cultivating diverse partnerships and collaborations among big pharma, biotech, academia, startups and technology companies is key to accessing early-stage scientific innovation. A connected innovation ecosystem creates a win-win situation, as smaller companies gain access to resources while simultaneously serving as a source of innovation for larger biopharma companies. This collaborative approach fuels progress and drives scientific advancements.

Why it matters:

By seeking innovation through a connected scientific ecosystem, companies can:

- Take advantage of rapid technological advances offered by an expanding ecosystem that includes small biotechs, startups, academic institutions and technology giants.
- Accelerate innovation through the exchange of diverse knowledge, experiences, ideas and expertise.

How to do it:

- Use multiple, diverse partnerships to bring best in-class connectivity and solutions to exchange data, capabilities and talent.
- Encourage an entrepreneurial approach within the ecosystem to experiment and build new capabilities by providing funding and lowering partnership barriers.
- Nurture collaboration with newer industry players. This allows them to capitalize on their existing infrastructure and tap into expertise of other players, gaining access to scientific and data capabilities.
- Integrate multiple digital platforms across different players to enable more robust, integrated stakeholder connections while remaining vigilant to patient data.

Aspiring pioneers

Today, innovation frequently stems from small biotechs and scientific institutions. Pfizer has focused on a concept called “Partner of choice” to help small firms and institutions bring their innovations to market. Pfizer’s aim is to help ensure that academic institutions, the biotech community and other stakeholders see the company as a partner that they want to work with, leveraging its talent, experience, infrastructure and other capabilities as a global company. The recent collaboration with BioNTech on their successful mRNA COVID-19 vaccine is one such example.²⁸

Deliver value and optimize operations

Biopharma companies must reinvent commercial models to keep pace with scientific innovation and address emerging challenges around sustainability, affordability and equity. They must match their capabilities to manufacture complex therapies and deliver to patients at speed, commercialize products with better launch success and achieve greater efficiency across their enabling functions.



7 Modernized commercial model

What it means:

Biopharma companies should prioritize five key areas of sustainability: access, human-centricity, system economics, operations and workforce. This will position these areas at the forefront of their commercial model, allowing for integrated investment decisions across all commercialization activities such as marketing, sales and patient access. Tailored distribution, pricing and contracting can then be applied to unique situations, creating sustainable value for all parties, including underserved populations and communities, healthcare systems and patients.

Why it matters:

By modernizing their commercial capabilities, companies can:

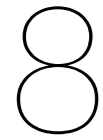
- Navigate exceptional pricing and access pressures, fluctuating economic paradigms and the emergence of societal pressures on health equity and sustainability.
- Create sustainable value for all stakeholders: better outcomes for underserved populations and communities; greater affordability across healthcare systems and more efficient operations for manufacturers.
- Sustainably deliver treatments to patients in an increasingly complex environment, while creating value for stakeholders in a more equitable and human-centric way.
- Drive incremental revenue: \$1bn in annual revenue for some leading companies.²⁹

How to do it:

- Develop evidence-based pricing models to boost evidence generation in early development; proactively engage stakeholders.
- Leverage data, platforms and AI to enable predictive models for better HCP engagement and quicker decision making.
- Streamline and simplify operations and processes and digitize key components.
- Foster diversity and inclusion across operations. Include strategies aimed at underserved communities in customer initiatives; measure impact to drive systemic change.
- Retain the shared mission of helping patients while adapting to societal expectations regarding diversity and representation.
- Unlock value from digital marketing and customer capabilities with strategies that bring digital and the field together to deliver more personalized customer experiences.
- Use gen AI to produce consistent and creative marketing materials; derive next-generation insights from multimodal data (e.g. text, voice, images).

Aspiring pioneers

Looking to better understand how to channel commercial strategies with HCPs and better engage with patients, one biopharma company is studying changing demographics as a key aspect of its Diversity and Inclusion (D&I) efforts. By using the D&I lens to view critical business decisions across the continuum of development and commercialization, the company has identified “moments of choice” that could enable better outcomes. The company aims to see how tailoring customer engagement to reflect the diversity of the HCP population and conducting patient outreach and services with an understanding of macro-level and location-specific demographics can positively affect product lifecycle management.



Transformed supply chain, manufacturing and quality

What it means:

New Science brings new modalities and increased complexity, ranging from small molecules to biologics, cell and gene to combination therapies. This complexity necessitates more automated and digitized manufacturing and supply chain networks to achieve agility and speed, coupled with compliance, quality and more patient-centricity.

Why it matters:

By digitally transforming supply chain, manufacturing and quality, companies can:

- Manage increased complexity and build resilience. A digital resilience and defined business continuity plan (DR&BCP) assessment provides a plan to reduce risk and improve resilience on a consistent basis.
- Implement automated, integrated, intelligent processes and increase data visibility to improve process and QA/QC lead times, reduce line/lab downtime, minimize scrapped batches and support faster changeovers. These enhancements can result in faster product launches, increases in throughput of 10–20% and boost revenues by 1.8–3%.³⁰
- Improve responsibility and environmental sustainability by embedding sustainability goals during design phases for synthesis, formulation, primary packaging and batch release processes; measure for impact. Control tower, transport management systems and logistics planning software can help reduce emissions and lower transport costs by 15%.³¹

How to do it:

- Enable greater control and traceability using integrated production lines and intelligent process controls.
- Increase productivity and profitability with dynamic task allocation via robotics (physical and virtual).
- Combat unseen market shocks and uncertainties using advanced intelligent scenario modeling.
- Use digital platforms to connect instruments and equipment with applications to realize automated task execution and data capture.
- Gain insights for continuous process improvement through process mining.
- Achieve zero-defect manufacturing and enhanced warehouse execution through worker augmentation.

Aspiring pioneers

Amgen developed an AI-powered process that enhanced its ability to find patterns in manufacturing deviations and prevent their recurrence. The AI tool replaced a manual, labor-intensive process with one that can look across large data sets and find correlations between obscure signals and events.³² Similarly, Accenture partnered with Amazon Web Services (AWS) to develop Velocity Labs: a fully digital, end-to-end lab continuum that harnesses the power of voice UI, heads-up displays, analytics and AI.³³ Scientists work in a paperless environment and receive the information they need, when and where they need it. Velocity Labs helps transform lab operations by increasing lab productivity by up to 35% and reducing non-value-added work by 50%, freeing hundreds of hours per year to focus on science. In quality control and manufacturing, it enables a right-first-time approach, reducing inventory days by 20–40%, leading to 40% faster batch releases.³⁴

9 Digitization and automation of the enabling functions

What it means:

Enabling functions such as procurement, HR, IT and finance are no longer seen as just “enablers” for companies, but as true drivers of competitive advantage for the enterprise. Leveraging advanced analytics and enabling functions can accelerate business decision-making and performance for both the top line and bottom line. Reinvention of processes and utilization of technology also streamline and accelerate the user experience for the business while harvesting OpEx efficiencies to be reinvested into key business priorities.

Why it matters:

With a focus on modernizing enabling functions, companies can:

- Harvest OpEx savings to reinvest in product pipelines.
- Create speed and business agility across the enterprise, from invoicing and reporting to regulatory compliance.
- Provide a better employee experience by leveraging technology to evolve new skill development and drive new career pathways.

How to do it:

- Streamline and improve processes for each function and ultimately across all enabling functions, fueled by digitization.
- Processes should be built on seamless work orchestration platforms that blend enterprise platforms, point solutions and intelligent automation. Descriptive and predictive analytics help inform decision-making across the enabling functions.
- More transparent and simplified processes enable better accountability and experiences for the business while increasing compliance. The goal is to simplify work, unlock capacity and increase agility in critical R&D, manufacturing and commercialization functions while realizing OpEx savings in the enabling functions.
- Build tech-savvy talent with a range of digital and tech skills. Dedicate those skills to high-value, strategic work such as enabling automation and digital tool maintenance and development. Administrative tasks should be kept to a minimum.

Aspiring pioneers

A global biopharma is reinventing its procurement function. Together we created a vision of what procurement could look like, and now, Accenture is delivering transformation as a service. Accenture’s SynOps platform will provide project information, leading practices and insights to the retained and outsourced procurement team. Information and data will flow from sourcing to contracting to purchasing, eliminating duplication of efforts and missed opportunities. Accenture will help significantly reduce procurement operating expense, increase supplier innovation and optimize third-party spend. And with advanced pricing analytics and data insights, together we will better manage third-party risk and improve compliance to help the company prepare for regulatory and market changes.³⁵

10 Full value chain business planning

What it means:

Biopharma businesses are facing exceptional levels of change due to accelerating innovation and scientific and technological breakthroughs. Additionally, the world is experiencing a higher degree of disruption that is creating volatility and different expectations. In a world of 8+ billion humans, disruptions like a global pandemic, cybersecurity breaches and the effects of climate change are expected to become more frequent. Companies need to make decisions and operate through cross-functional planning, create win-win data partnerships, and develop end-to-end visibility and predictability across the value chain. A unified, end-to-end approach will enable quick response to change and new unknowns.

Why it matters:

Building an agile, responsive business planning model that is faster than quarterly and yearly approaches, companies can:

- Streamline human input, build resilience against disruption, break down silos and unify plans across the organization and value chain.
- Use AI, including the latest advances in gen AI, to create time and cost savings and modernize planning processes.
- Develop the capacity to anticipate and prepare for disruptions, e.g., disease outbreaks, competitor launches and treatment breakthroughs.
- Promote collaboration with external partners by enabling an AI-focused organizational strategy.
- Improve demand forecasting by integrating data from sales, marketing and production. This allows companies to better anticipate market needs and adjust production accordingly, reducing the risk of stockouts or excess inventory.

How to do it:

- Integrate AI capabilities, cloud, platforms and other data tools to help ensure that all value chain partners feed real-time demand, supply and macro market signals to seamlessly evolve the plan.
- Create unprecedented levels of collaboration that lead to a single shared plan (in lieu of individual plans specific to each partner).
- Empower the planning team to focus on improving the quality of the algorithms, in lieu of the time-consuming process of managing the data.
- Break down silos to drive greater return on investment, less investment overlap and a truly holistic and integrated approach. When it comes to business planning, the need for such integration is critical. Reinvention is boundaryless and breaks down organizational silos. It tackles capabilities end-to-end with people, processes and data deeply connected across the value chain, inside the organization and beyond.

Aspiring pioneers

Novartis collaborated with a variety of partners, including Accenture, on a project with the ambition to transform all aspects of the business. Accenture created an end-to-end solution that supports a data- and analytics-based operating model and offers a broader and deeper view of activities to make business and clinical decisions. The project included changes in governance and architecture, like establishing a centralized data catalog and cross-functional platforms to interface with those data sources. The insights generated are expected to drive faster decision-making and accelerate production and distribution of therapies in response to external changes while lowering costs and fostering innovation.³⁶

Power your people

For any company, executing strategy comes down to people. But increasingly, leadership teams are questioning their companies' ability to recruit, develop and retain the future-skilled talent they need to drive reinvention. The combination of technology and culture can dramatically transform human productivity and innovation. The biopharma industry is poised to unlock new levels of human potential, with technology primed to bring more groundbreaking treatments in the coming years than seen in the past decades.



11 Thriving organizations: Unlocking people's potential

What it means:

In thriving organizations, productivity has shifted from simply "working harder" to transforming how work is done through the intersection of technology and human ingenuity. By blending processes, automation, applied intelligence and human experience, we can reimagine work structures and empower individuals to achieve their career aspirations while driving better business outcomes. These organizations excel at seamlessly integrating new technologies into critical workflows, particularly during significant shifts that redefine core business activities.

Take gen AI as an example. Its ability to move experiments from labs to computers enables scientific discoveries that were previously unattainable. Gen AI not only saves time but also offers a spectrum of options for human enhancement and decision-making. By blending gen AI with broader automation, leaders will harness its power to augment human creativity and integrate it into everyday business operations. This integration ensures that gen AI becomes a central, routine aspect of the business, maximizing human and technological potential.

Why it matters:

By unlocking human potential through new technology and ways of working, companies can:

- Attract, engage and retain the most critical talent.
- Build skills for today and be ready for the jobs of the future.
- Set new standards for human productivity, with increasingly profitable growth.

How to do it:

- Start with the work that will need to be done, understanding who will do the work — humans, technology or both, especially given the rise of AI tools in discovery, development and commercial operations.
- Identify the skills required by the organization and take a people-centric approach to constructing new and evolved roles.
- Create experiential in-role learning — automated learning modules and digital upskilling programs — to allow people to continuously build their skills for the future.
- Wire the organization to encourage new ways of working through incentive programs, performance plans and organizational culture and change.

12 Modern leaders: Creating the leaders of tomorrow, today

What it means:

Leaders tell us that they and their leadership teams do not have the skills and behaviors to lead their companies through reinvention and that this is one of the largest factors delaying enterprise reinvention. Organizations that challenge themselves and their senior leadership teams to lead differently in a rapidly changing context are the ones that can then lead people to grow their skills and potential through the transformation. Every business is a digital business, and leaders must be fluent in both data and technology and skilled in continually reinventing possibilities for growth, creating value and driving innovation. Guiding a company through change requires courage, being comfortable with ambiguity and a humble openness to learning from non-traditional sources.

Why it matters:

Modern leaders succeed in ongoing reinvention because they:

- Create a purpose-led organization that inspires all employees, unlocking the potential to spark change and innovation.
- Start with themselves, developing the skills, mindsets and capabilities to lead continuous reinvention.
- Build a strong pipeline of leaders who have the motivation and capability to reshape the industry.

How to do it:

- Prioritize possibilities by developing leaders with curiosity and the courage to challenge preconceptions.
- Embrace new ways of working given how advancements in data, design and digital (automation, AI) are impacting leaders and team design.
- Nurture the foundational skills of problem-solving and collaboration; build expertise in technology, data and analytics.
- Continually invest in new skills and reverse-mentorship programs that help people learn from the newest members of the organization.

Aspiring pioneers

A major pharmaceutical company partnered with Accenture to support cross-functional product teams in building a culture of agility and collaboration within a highly matrixed environment. The Accenture team applied leadership, culture and agile leadership methodologies to foster teams who can strategize across functional expertise and adapt quickly in a dynamic business environment. The value to the pharmaceutical company was the adoption of core agile behaviors and higher levels of communication, interdependent decision-making and collaboration.



The digital core enables industry leadership

Why isn't technology included as a capability in the New Performance Frontier? Technology is so pervasive that it can't be called out as a single capability. It must be embedded in every capability for each to be truly leading-edge. Industry leadership in the future will need to embrace the possibilities of technology — and build a robust, flexible technology engine, what we call the digital core.

The digital core integrates the power of cloud, data and AI to create an interoperable set of secure, flexible platforms that enable companies to rapidly create new capabilities and growth opportunities for the enterprise. To lead in the future, biopharma

organizations must weave these technologies together. The benefits in terms of business differentiation, resiliency and agility are considerable.

As science and technology surge and industry competition grows more complex, the need for digitally-driven approaches to drug discovery and development becomes ever more crucial. Leveraging the best of both worlds, biopharma companies can transform operations, drive productivity and accelerate innovation. The result is an industry that is more resourceful, more efficient and more capable of delivering life-changing treatments.

Total Enterprise Reinvention drives competitive advantage

These capabilities that define the New Performance Frontier for the biopharma industry are meant to help leaders forge a clear view of the long-term strategy for their company against which they can execute in the coming years. This is a roadmap to building a flexible business that can constantly reinvent itself to align with consumer and stakeholder expectations. Every biopharma company should determine its unique New Performance Frontier across the capabilities and identify the organizational, operational and cultural obstacles to delivering ambitious, net-new growth in the near term and beyond. This will make clear which areas to prioritize.

Embracing Total Enterprise Reinvention releases value at a compressed rate

The value for cross-industry companies accelerating their pursuit of reinvention is clear in both financial and non-financial terms.³⁷

Financial impact

Reinventors across industries report generating 10% higher incremental revenue growth, 13% higher cost-reduction improvements and 17% higher balance-sheet improvements.

Rapid results

Reinventors across industries account for 8% of our sample and deliver 1.3x more financial value in the first six months of their transformation investments than their peers. This is predominantly because of their ability to move at greater speeds, enabled by their more sophisticated technology infrastructure and ways of working; 66% of them say they are moving “significantly faster” than before.

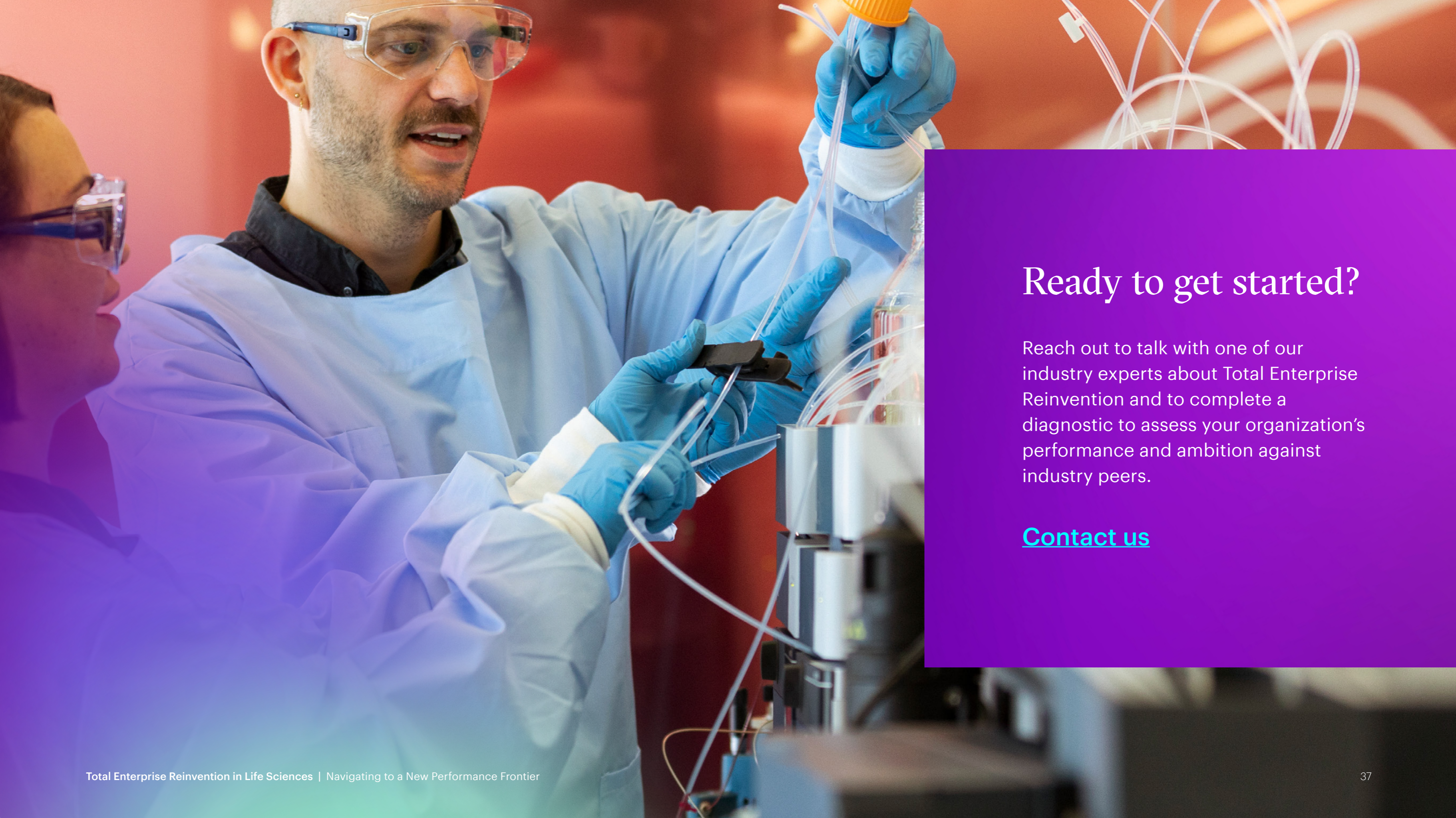
360° value

Companies that have committed to reinvention already deliver better and broader value than their industry peers: 32% better on sustainability and 31% better on experience — for customers, suppliers and employees. They also score 11% higher on innovation, 11% higher on “net better off” outcomes for talent and 7% higher on inclusion and diversity.

To achieve this value, it is important to understand that Total Enterprise Reinvention isn't a to-do; it's a to-be: an opportunity to continually reinvent and transcend not only present practices, but also future possibilities.

There's no going back — the gap between what technology makes possible and what's being done in practice is widening. The time to act is now.

In short, we believe that Total Enterprise Reinvention isn't just important — it's imperative, and over the next 10 years will become the biopharma industry's norm. Those that embrace this philosophy rapidly and with rigor will be the most successful in the long term and most prepared to face whatever the future holds.



Ready to get started?

Reach out to talk with one of our industry experts about Total Enterprise Reinvention and to complete a diagnostic to assess your organization's performance and ambition against industry peers.

[Contact us](#)

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