Nonstop disruption across every industry today brings nonstop questions. Evolving technologies, increasingly challenging market and regulatory forces, and rising consumer expectations mean many leaders in the Life Sciences industry feel the pressure to understand emerging trends, get ahead of them, and capture their potential.

Progress in this industry encompasses not only molecules and devices, but also experiences and opportunities—all focused on improving outcomes and value for payers and providers, as well as patients and caregivers. As organizations apply ever-greater levels of innovation to meet this change, they rely on fresh, focused, industry-relevant insights. This guide provides a sector-specific perspective on Deloitte’s Technology Trends 2019: Beyond the digital frontier report.

With this publication, we examine several important trends through the lens of the Life Sciences sector—also touching on the macro technology forces at play and how modern businesses can navigate digital transformation. These forces are actively shaping strategic and operational transformations, redefining IT’s role within the enterprise, and forcing business leaders to reimagine what it means to operate in a digitally driven global economy.

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Learn the forces that will shape change in your business world. Button down the status quo. Pick bold goals. Embrace technology at the core. Look beyond marketing. Go cloud native. Look for examples. Expand your security culture. Go all-in on data. Learn the landscape. Train the people you have. Strive to become an “AI-first” organization. Plan for the upcoming explosion of connectivity options to design tomorrow’s digital reality. Organizations across all sectors are rethinking all of the ways they engage with machines, data, and each other.

Macrotechnology forces at work

Nine technology forces (cloud, analytics, digital experience, blockchain, cognitive, digital twin, 5G, AI, and virtual reality) are reshaping our world today. These forces are critical for organizations— their controlled collision can compund the effect of purposeful, transformational change. What is the “state of the state” of these forces today and how are organizations harnessing them?

Getting started
- Learn the forces that will shape change in the coming decade, how IT will look, and what it means for your business.
- Embrace technology at the core. The support organization will increase in importance as new tools affect everything you do.
- Keep your eye on the horizon. Phenomena like blockchain, cognitive tools, and digital reality are not in line to firstrateplace in how we work.

AI-fueled organizations

Leading organizations are harnessing AI’s full potential for data-driven decision making and generating valuable insights. To become a true “AI-fueled” organization, a company needs to find AI’s place in the mission, rethinks its talent, focus on human and machine interaction in its environment, and deploy machine learning across core business processes and enterprise operations.

Getting started
- Decide what AI means to you. Relevant applications can vary by industry, mission, and situation.
- Strive to become an “AI-first” organization. Change the question from “why AI?” to “why not?”—and get started.
- Train the people you have, both in the mission and in IT, the nature of your plan and your maturity to date will help determine which skills to add.
- Add the skills you don’t have. Hire or contract for talent as necessary.

Life Sciences companies are making investments in data to deliver business strategy. For example, companies are using AI not only to accelerate drug development, but also to direct their sales forces to manage physician outreach for more efficiency and better relationships.

NoOps in a serverless world

Cloud providers have doggedly automated traditional infrastructure and security management tasks and are increasing the complexity and value of “as a service” capabilities. As a result, technical resources are interacting less and less with the underlying system infrastructure. Operations talent can shift to increasingly agile teams focusing on higher-order (and higher-value) activities that more directly support mission outcomes.

Getting started
- Shift administrative work to engineering footing. Diversely standardize, customize, and synthesize so you can begin applying engineering principles to operations.
- Go cloud native. Pilot and pursue technologies that don’t involve managing physical servers.
- Transform your processes. Make your processes automatable and repeatable without human intervention.

Life Sciences companies are leveraging low code development platforms to modernize, and synthesize, so you can begin to build a platform for the mission. The nature of your plan and your maturity to date will help determine which skills to add.

Trends in action

New tools and techniques have made cloud migration a faster path for many Life Sciences companies.

Trends in action

Life Sciences companies are combining IoT, smart sensors, digital reality, and cognitive in areas such as supply chain and operations. Together, these forces are driving end-to-end network visibility—from raw material suppliers to patients—and training employees to see and use new insights across the value chain. Pick promising areas as focal points for small-scale pilots.

Beyond the digital frontier: Mapping your future

Digital transformation has become a rallying cry for business and technology strategists. Yet all too often, companies anchor their approach on a specific technology advance. Developing a systematic approach for identifying and harnessing opportunities born of the intersections of technology, science, and business is an essential first step in demystifying digital transformation, and making it concrete, achievable, and measurable.

Getting started
- Build a recipe file. “Get in the kitchen” to test promising combinations of technologies and technologies.
- Look for examples. Organizations and companies are already moving to become digital organizations and areas you support.
- Learn the landscape. New technologies include AI, digital twin, blockchain, and more. Catalysts include concepts like crowdsourcing, human-centered design, and the maker movement. Keeping up with what’s new prepares you to invent what’s next.

Trends in action

Life Sciences companies are evaluating intelligent interfaces to auto-translate inquiries from MCPs from one language to another, as well as intelligent logging to record cases and adverse events.

Trends in action

Life Sciences companies are developing AI-fueled organizations.

Getting started
- Look beyond marketing. Leading organizations are reframing all of the ways customers interact with them.
- Create connections. It’s not just pushing information—new tools and techniques enable customized experiences and better relationships.
- Go all-in on data. Collect and manage information from your customers to better understand the interactions they desire.

Trends in action

Life Sciences companies are using DevSecOps to shift from a project mindset to focus on platform efficiency. One company is applying this approach to improve highly regulated, yet highly competitive companies are accelerating to drive integration and speed, and reduce complexity. A talent strategy focused on continuous learning can help prepare operations colleagues to operate in the cloud environment on day one.

Getting started
- Plan for the upcoming explosion of bandwidth. A series of connected world—bring changes that bring new demands and new opportunities.
- Learn from history. This isn’t the first time bandwidth has exploded. Smartphones changed the ways we keep and use data. What parallel changes are ahead?
- Button down the status quo. If millions of new devices are soon to arrive, every mobile computational device you use must be under control. Use scenario planning to define the future.

Advanced networking offers a continuum of connectivity that can drive development of new products and services or transform inefficient operating models. From edge computing and mesh networks to 5G, low orbit satellites, and ultra-broadband, organizations across sectors and geographies are looking at advanced connectivity options to design tomorrow’s enterprise networks.

Getting started
- Get in the kitchen. Build your capabilities to design and implement platforms and products. One company is applying this approach to improve quality and speed to market across all commercial products. This is fundamentally changing approaches to funding, talent, and security.

Trends in action

Life Sciences companies are developing AI-fueled organizations.