2022 CIO Agenda: A Life Science Perspective

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Uncertainty and disruption brought about by the COVID-19 pandemic pushed life science organizations to reevaluate their digital business initiatives. This research gives LS CIOs an opportunity to gain comparative insights into their peers’ investments and digital progress for future planning.

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Overview

The 2022 Gartner CIO and Technology Executive Survey reveals how business composability enables enterprises to thrive amid uncertainty and disruption, and actions for CIOs and technology executives to take to make their organizations more composable. Through this survey, we identify key industry technology trends, as well as life science organizations’ digital progress and mastery of business composability compared to other industries.

The COVID-19 pandemic disrupted life science organizations’ operational models ranging from halting research and development activities, disrupting supply chains and dramatically shifting the sales environment to virtual spheres. Beyond the pandemic, life science organizations face new regulatory challenges, ongoing pricing and access pressures, shifting economic conditions, and demands for new value propositions that improve patient outcomes. To do that, they must adopt new business and technology approaches for real-time operations, enhanced intelligence and agility to adapt.

Survey Objective

The 2022 Gartner CIO and Technology Executive Survey was conducted to inform CIOs and other technology executives on how composability can improve business performance during times of volatility.
To Be Adaptable, Life Science Organizations Must Become Composable

The 2022 Gartner CIO and Technology Executive Survey shows that mastering business composability makes CIOs and other technology executives better prepared to maximize business value delivery during this period of volatility and beyond.

A composable digital business applies the core principles of composability (modularity, autonomy, orchestration and discovery) to the foundations of its business architecture (such as the business model, enterprise operations and strategy), in order to master the risk of change and reach untapped business value (see Business Composability Helps You Thrive Amid Disruption). The survey found that overall, organizations that have taken a composable approach to change are the ones most likely to deliver superior business performance, even in times of volatility. Life science CIOs, however, report far lower levels of business composability. The business composability topic is new to most life science organizations and they currently lack these capabilities. Therefore, they report lower business performance, revenue funding, ability to reduce business risks and operating costs than highly composable businesses overall. For example, only 34% of life science CIOs state that their organization follows key composable practices, such as using adaptive strategy to spot and respond to opportunities and threats. In contrast, 64% of highly composable organizations follow such practices. Furthermore, among life science CIOs, only 18% empower internal functions, product teams and external partners to work together through autonomous, self-organizing networks, compared to 51% of highly composable enterprises.

Highly composable businesses also report enhanced digital business in general, especially when compared to life science organizations. Past Gartner surveys have found that life science organizations are behind on digital business transformation, especially regarding the use of digital channels to generate revenue and for external processes. This still is true today. The most recent survey, however, highlights the severity of this, as highly composable businesses are moving at a faster pace than life sciences toward a more robust digital model. Life science organizations continue to advance internally facing processes with a focus on digital business optimization, such as accelerating drug discovery, improving clinical trial execution and delivering superior customer experiences.

Tailwinds for Business Composability Adoption

Uncertainty and volatility will remain an industry business driver for the foreseeable future. Other factors, such as development focus on specialty medicine, cell and gene therapies, and digital therapeutics, will play a role in accelerating the shift to greater business composability. Life science CIOs report that IT budgets are expected to increase by 5.2% on average from 2021 to 2022. Furthermore, 54% of life science respondents report that investments in digital transformation initiatives are expected to increase, which makes it the second most common area, surpassed only by cybersecurity. Fifty-six percent of life science respondents are increasing their funding for cybersecurity as the healthcare environment becomes more interconnected and the industry is a constant target of ransomware attacks. Composability would help an enterprise recover from, and potentially even minimize the effects of, a cybersecurity incident. Life science CIOs also strongly favor deployment of artificial intelligence/machine learning (AI/ML) (54%) and distributed cloud (48%), which support business composability.
Key Findings

Composability Is an Essential Tool for Agility and Business Growth

• Incorporating composability (modularity, autonomy, orchestration and discovery) within the organization promotes creative use of the design principles that enable them to adapt and grow despite uncertainty.

• Composable thinking is a steppingstone to digital agility and assists in mitigating change risks that are amplified by entrenched business designs and practices.

Composable Technology Architecture Is Essential to Scale Digitalization

• Many life science organizations are hamstrung with legacy business platforms that are static and monolithic. These platforms need to be decomposed into packaged business capabilities (PBCs) to achieve digital agility — both from inside and outside organizations.

• Life science organizations are investing in newer technologies to support shifting operating models, such as virtual engagement, digital trials and lab of the future.

Ecosystems Are Essential for Composable Healthcare

• Uncertainty and disruption has been a digital catalyst for the life science industry to develop new business capabilities that can only be delivered in conjunction with external partners through healthcare ecosystems.

• As healthcare ecosystems continue to expand, business success will require adaptability, agility and interoperability to partner effectively in composable healthcare models.

Gartner Recommendations

Composability Is an Essential Tool for Agility and Business Growth

• Assess the maturity of your organization’s business composability by rating the organization on the three elements of business composability — composable thinking, composable architecture and composable technology.

• Realign IT efforts with the postpandemic business opportunities for revenue growth and new business models by assessing where technology can be a differentiator.

Composable Technology Architecture Is Essential to Scale Digitalization

• Modernize your technology stack by aligning your architectural and organizational strategy to the principles of composable business.

• Increase your operational agility by replacing your monolith platforms with a composable architecture and planning a roadmap with focus on incremental and modular approach.

Ecosystems Are Essential for Composable Healthcare

• Lead differently by sourcing innovations and forging new partnerships by embracing healthcare ecosystems.

• Build differently by using composable design principles and investing in technologies such as cloud, data fabrics and APIs that enable innovation, integration and interoperability across new partners through ecosystems.
Respondent Profile: Industry and Region

Primary Industry

- Pharmaceuticals, Biotechnology & Life Sciences

Region

- EMEA
- APAC
- North America
- Latin America
Section 1: What Is Business Composability?

Composable business derives from a combination of mindset, practices and tools that enable enterprises to sense and respond to changing business conditions. Its three components are:

1. Composable thinking
2. Composable business architecture
3. Composable technologies
Section 2: Why Business Composability Matters

Despite the challenges and volatility throughout the pandemic, highly composable businesses still outperform those that are not as composable.

Life science organizations have responded to significant business disruption challenges through the pandemic. They have introduced new digital solutions, such as virtualizing their operations and adapting new technologies to keep clinical trials on track. These challenges have increased operational risks in the short term and may be a reason for the lower performance scores in these areas.

Enterprise Business Performance
Percentage of Respondents Ahead or Far Ahead of Peers and Competitors

- **Overall Business Performance:**
  - High Composability (n = 143): 63%
  - Life Sciences (n = 60): 27%
  - Improvement: +36 pp

- **Increase Revenue/Funding:**
  - High Composability (n = 143): 60%
  - Life Sciences (n = 60): 33%
  - Improvement: +27 pp

- **Reduce Business Risk:**
  - High Composability (n = 143): 50%
  - Life Sciences (n = 60): 16%
  - Improvement: +34 pp

- **Reduce Operating Costs:**
  - High Composability (n = 143): 47%
  - Life Sciences (n = 60): 18%
  - Improvement: +29 pp

n varies by segment. CIOs and technology executives answering, excluding “don’t know” Q: Considering the past 12 months, rate your enterprise’s business performance compared with its peers or competitors. Source: 2022 Gartner CIO and Technology Executive Survey
As in the past surveys, life science organizations continue to lag on digital execution especially regarding the use of digital channels to generate digital revenue and use of digital for external processes. This still is true in this most recent survey that highlights the severity of this. Highly composable businesses are moving at a faster pace than life sciences in moving toward a more robust digital model.

**Highly Composable Enterprises Have, and Project, High Digital Progress**

**Average (Mean) Percentage of Revenue From Digital Sales vs. Average (Mean) Percentage of Digitized Processes**

- High Composability Trend Line
- Life Sciences Trend Line

- **x-axis:** Q. What percentage of your enterprise’s processes have been optimized (made more efficient) through digital means?
- **y-axis:** Q. What percentage of your organization’s total revenue would you attribute (or expect) as digital sales revenue?

Source: 2022 Gartner CIO and Technology Executive Survey
Section 3: Business Composability Revealed

What Practices Do Composable Enterprises Follow?

Methodology:

- Organizations that are composable are better able to survive and thrive during times of volatility.
- We identified a “highly composable” cohort as the segment of the sample that widely or extensively practiced thinking, business architecture and technology composability.
- We asked 30 questions over these three domains to discover which ones composable businesses use.

Enterprises’ Composability Action Plan

**Composable Thinking**
- Spot threats and opportunities
- Enable high trust and independent decision making
- Promote autonomous, self-organizing teamwork

**Composable Business Architecture**
- Focus teams on value, transparency and accountability
- Design business processes in line with technology capabilities
- Share accountability between IT and the business

**Composable Technologies**
- Make iterative development your default approach
- Establish continuous and effortless idea sharing
- Create dynamic and easily deployable application and data integration

Source: Gartner
Composable Enterprises Utilize Three Principles
The survey results suggest that life science organizations are in the early stages of the composable thinking, business architecture and technology journey. Of note, composable technology lags significantly compared to highly composable enterprises. This is likely because most business applications in life sciences are monolithic, difficult to integrate and need to be decomposed into PBCs to achieve digital agility.

### Extent of Composability

Average Scores on a Scale of 1 (Not at All) to 7 (Extensively Throughout the Enterprise)

<table>
<thead>
<tr>
<th>Principle</th>
<th>High Composability (n = 150)</th>
<th>Life Sciences (n = 61)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composable Thinking:</td>
<td>6.4</td>
<td>4.2</td>
</tr>
<tr>
<td>Composable Business Architecture:</td>
<td>6.4</td>
<td>4.8</td>
</tr>
<tr>
<td>Composable Technologies:</td>
<td>6.2</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Q. To what extent does your enterprise utilize these principles?

Source: 2022 Gartner CIO and Technology Executive Survey

n varies by segment. CIOs and technology executives answering

Q. To what extent does your enterprise utilize these principles?

Source: 2022 Gartner CIO and Technology Executive Survey
The High-Composability Cohort Is Emergent

The pandemic was a major disruption for the industry across its entire value chain — research, clinical development, commercialization and manufacturing. As such, life science CIOs had to deploy different business and technological approaches to maintain business operations, even though they were not as effective as prepandemic approaches.

Distribution of Survey Respondents Into Business Composability Groups
Percentage of Respondents

<table>
<thead>
<tr>
<th>Total (n = 2,387)</th>
<th>Life Sciences (n = 61)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13% Low Business Composability</td>
<td>10% Low Business Composability</td>
</tr>
<tr>
<td>6% High Business Composability</td>
<td>8% High Business Composability</td>
</tr>
<tr>
<td>81% Moderate Business Composability</td>
<td>82% Moderate Business Composability</td>
</tr>
</tbody>
</table>

High-composability enterprises utilize the principles of composable thinking, business architecture and technologies “widely” or “extensively throughout the enterprise”

n varies by segment, CIOs and technology executives answering Q. To what extent does your enterprise utilize these principles?
Source: 2022 Gartner CIO and Technology Executive Survey
Rapid advances in medical technologies were unabated with regulatory authorities reviewing and approving coronavirus-related diagnostics, therapies and vaccines, while also supporting approval of new drugs and devices.

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**High Composability Ranges Widely by Industry**

Percentage of Respondents That Are Highly Composable Across Industries

![Bar chart showing the percentage of respondents that are highly composable across different industries.](chart_image)

Note: Value labels show rounded percentages.

Source: 2022 Gartner CIO and Technology Executive Survey
The nine practices (placed under three categories) to improve composability are:

Composable Thinking
- Practice adaptive strategy to spot and respond to opportunities and threats.
- Promote a high-trust culture that empowers employees to independently make decisions.
- Empower internal functions, product teams, external allies and/or business partnerships to work together through autonomous self-organizing networks.

Composable Business Architecture
- Shape multidisciplinary teams to align on value, promote transparency, drive accountability and collaborate on demand.
- Design business processes in parallel with technology capabilities.
- Distribute accountability for digital outcomes beyond the traditional IT organization to other business units/business leaders.

Composable Technologies
- Establish continuous and effortless sharing of ideas and access to platforms, tools and know-how across internal functions, product teams, external allies and/or business partnerships.
- Establish iterative development techniques (such as DevOps) as the default approach to development.
- Create dynamic and easily deployable integration capabilities for connecting data, analytics and application components.

The full list of practices is in Note 1.
Nine Practices Distinguish Highly Composable Enterprises
Average Composability for High-Composability Respondents Who Follow This Practice (1-7 Scale)

Composable Thinking
1A Empower internal functions, product teams, external allies and/or business partnerships to work together through autonomous, self-organizing networks
1B Promote a high-trust culture that empowers employees to independently make decisions
1C Practice adaptive strategy to spot and respond to opportunities and threats

Composable Business Architecture
2A Shape multidisciplinary teams to align on value, promote transparency, drive accountability and collaborate on demand
2B Distribute accountability for digital outcomes beyond the traditional IT organization to other business units/business leaders
2C Design business processes in parallel with technology capabilities

Composable Technologies
3A Establish iterative development techniques (e.g., DevOps) as the default approach to development
3B Establish continuous and effortless sharing of ideas and access to platforms, tools and know-how across internal functions, product teams, external allies and/or business partnerships
3C Create dynamic and easily deployable integration capabilities for connecting data, analytics and application components

n = 148 CIOs and technology executives from highly composable enterprises answering Q. Which of these practices does your enterprise follow completely and consistently? Multiple responses allowed.
Source: 2022 Gartner CIO and Technology Executive Survey
**Key Composable Thinking Practices**

Composable thinking recognizes opportunity where others see only the risk of change. Life science organizations’ risk-averse culture appears to be holding them back from their composable journeys.

Use the survey findings to shape the business case for composability with executive peers — namely, that composability can deliver better business performance, more innovation and growth, but will require cost appetite to do so.

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**Key Thinking Practices to Improve Business Composability**

*Percentage of Respondents Who Perform It*

<table>
<thead>
<tr>
<th>Practice</th>
<th>High Composability (n = 147)</th>
<th>Life Sciences (n = 53)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice adaptive strategy to spot and respond to opportunities and threats</td>
<td>64%</td>
<td>34%</td>
</tr>
<tr>
<td>Promote a high-trust culture that empowers employees to independently make decisions</td>
<td>56%</td>
<td>23%</td>
</tr>
<tr>
<td>Empower internal functions, product teams, external allies and/or business partnerships to work together through autonomous, self-organizing networks</td>
<td>51%</td>
<td>18%</td>
</tr>
</tbody>
</table>

n varies by segment, CIOs and technology executives answering
Q: Which of these practices does your enterprise follow completely and consistently?
Source: 2022 Gartner CIO and Technology Executive Survey
Key Composable Business Architecture Practices

Composable thinking and composable architecture can only succeed together. An architecture investment without clarity of the mission will not deliver the transformative experience of the composable digital business.

Create multidisciplinary fusion teams aimed at addressing business composability, including business, architecture, data, customer, digital and technology, to build a strategy which is then mapped against digital strategies to narrow the gap against highly composable businesses.

Key Business-Architecture-Related Practices to Improve Composability

<table>
<thead>
<tr>
<th>Practice</th>
<th>Percentage of Respondents Who Perform It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shape multidisciplinary teams to align on value, promote transparency,</td>
<td>67%</td>
</tr>
<tr>
<td>drive accountability and collaborate on demand</td>
<td></td>
</tr>
<tr>
<td>Design business processes in parallel with technology capabilities</td>
<td>64%</td>
</tr>
<tr>
<td>Distribute accountability for digital outcomes beyond the traditional</td>
<td>53%</td>
</tr>
<tr>
<td>IT organization to other business units/business leaders</td>
<td></td>
</tr>
</tbody>
</table>

n varies by segment. CIOs and technology executives answering Q. Which of these practices does your enterprise follow completely and consistently?

Source: 2022 Gartner CIO and Technology Executive Survey
Key Composable Technology Practices

Composable technology architecture is a foundation for digital enablement of business. Life science organizations indicate that this is the weakest of the three composable practices.

Demonstrate modularity of controls through the implementation of concrete architectural frameworks such as API-first architecture or out-of-the-box integrations that enable integrations with heterogeneous environments.

Key Technology-Related Practices to Improve Composability

<table>
<thead>
<tr>
<th>Practice</th>
<th>Percentage of Respondents Who Perform It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish iterative development techniques (e.g., DevOps) as the</td>
<td>60% (High Composability)</td>
</tr>
<tr>
<td>default approach to development</td>
<td>29% (Life Sciences)</td>
</tr>
<tr>
<td>Establish continuous and effortless sharing of ideas and access to</td>
<td>59%</td>
</tr>
<tr>
<td>platforms, tools and know-how across internal functions, product</td>
<td>23%</td>
</tr>
<tr>
<td>teams, external allies and/or business partnerships</td>
<td></td>
</tr>
<tr>
<td>Create dynamic and easily deployable integration capabilities for</td>
<td>58%</td>
</tr>
<tr>
<td>connecting data, analytics and application components</td>
<td>24%</td>
</tr>
</tbody>
</table>

n varies by segment. CIOs and technology executives answering Q. Which of these technology-related practices does your enterprise use completely and consistently? Source: 2022 Gartner CIO and Technology Executive Survey.
Section 5: Life Sciences 2022 Spending Plans and Technology Trends

As highly composable organizations plan for 2022, there is a significant difference in their IT budget as well as their expected change in revenue, compared to their moderate- and low-composability peers.

High-Composability Enterprises Increase Revenue/Budget Faster and Leverage IT Better

<table>
<thead>
<tr>
<th></th>
<th>Change in Revenue</th>
<th>Change in IT Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Composability</td>
<td>7.7%</td>
<td>4.2%</td>
</tr>
<tr>
<td>(n = 130)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate Composability</td>
<td>4.9%</td>
<td>3.6%</td>
</tr>
<tr>
<td>(n = 1,699)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Composability</td>
<td>3.4%</td>
<td>3.1%</td>
</tr>
<tr>
<td>(n = 285)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n varies by segment, CIOs and technology executives answering, excluding “not sure”

Q. By what percentage do you expect your enterprise’s revenue/overall budget/turnover to increase or decrease from 2021 to 2022?

Q. By what percentage do you expect your enterprise’s IT budget to increase or decrease from 2021 to 2022?

Source: 2022 Gartner CIO and Technology Executive Survey
Budget Changes for 2022 Will Vary Widely by Industry

| Asset-Intensive Manufacturing (n = 248) | 8.7% |
| Health Care Providers (n = 109) | 8.7% |
| Low Composability (n = 285) | 8.7% |
| Medium Composability (n = 1,699) | 8.7% |
| CSP (n = 36) | 8.7% |
| U.S. Healthcare Payers (n = 28) | 8.7% |
| K-12 Education (n = 28) | 8.7% |
| High Tech (n = 58) | 8.7% |
| High Composability (n = 1,699) | 8.7% |
| High Composability (n = 130) | 8.7% |
| Retail (n = 73) | 8.7% |
| Banking (n = 242) | 8.7% |
| Life Sciences (n = 55) | 8.7% |

Even though the budget changes are asymmetric, on average, all industries have seen an increase in funding for digital innovation.

Q: By what percentage do you expect your enterprise’s revenue/overall budget/turnover to increase or decrease from 2021 to 2022?
Q: By what percentage do you expect your enterprise’s IT budget to increase or decrease from 2021 to 2022?

Source: 2022 Gartner CIO and Technology Executive Survey

n = varies by segment, CIOs and technology executives answering, excluding “not sure”
A higher percentage of Life science organizations report an increase in IT spending than highly composable enterprises.

As life science organizations increase their IT investment, you as CIO, should utilize digital KPIs to measure return on investment to ensure parity with highly composable enterprises.

High-Composability Enterprises Plan, on Average, a 4.2% Increase in 2022 IT Spending

<table>
<thead>
<tr>
<th>Percentage of Respondents</th>
<th>Average Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase</td>
<td>+4.2%</td>
</tr>
<tr>
<td>Stay the Same</td>
<td></td>
</tr>
<tr>
<td>Decrease</td>
<td>+5.2%</td>
</tr>
</tbody>
</table>

High Composability (n = 130): 63% Increase, 24% Stay the Same, 13% Decrease

Life Sciences (n = 55): 75% Increase, 18% Stay the Same, 7% Decrease

n varies by segment, CIOs and technology executives answering Q. By what percentage do you expect your enterprise’s IT budget to increase or decrease from 2021 to 2022? Source: 2022 Gartner CIO and Technology Executive Survey
High-Composability Enterprises Plan, on Average, a 4.2% Increase in 2022 IT Spending

2022 CIO Agenda: A Life Science Perspective

Digital business initiatives (including CX), advanced analytics and cloud platforms are key investment areas for life sciences. These investment areas have been consistent for the past several years with little variation.

Q. What are the technology areas where your enterprise will be spending the largest amount of new or additional funding in 2022 compared with 2021?

Q. What are the technology areas where your enterprise will be reducing funding by the highest amount in 2022 compared with 2021?

Source: 2022 Gartner CIO and Technology Executive Survey
While much uncertainty remains about the duration of the pandemic, more life science organizations are investing in digital transformation initiatives than the most highly composable enterprises.

Furthermore, life science CIOs report a significant lower investment rate in emerging technology — including AI/ML and integration technologies/APIs/API architecture and total experience solutions than highly composable organizations.

You, as CIO, will want to align technology spend in these categories with your organization’s composable objectives.

<table>
<thead>
<tr>
<th>Top 10 Technology Investment Areas for 2022 Among Highly Composable Enterprises</th>
<th>Percentage of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Composability (n = 145)</strong></td>
<td><strong>Life Sciences (n = 61)</strong></td>
</tr>
<tr>
<td>Artificial Intelligence/Machine Learning</td>
<td>30%</td>
</tr>
<tr>
<td>Business Intelligence/Data Analytics</td>
<td>57%</td>
</tr>
<tr>
<td>Cyber/Information Security</td>
<td>57%</td>
</tr>
<tr>
<td>Integration Technologies/APIs/API Architecture</td>
<td>26%</td>
</tr>
<tr>
<td>Cloud Platforms</td>
<td>41%</td>
</tr>
<tr>
<td>Digital Business Transformation Initiatives</td>
<td>39%</td>
</tr>
<tr>
<td>Total Experience Solutions</td>
<td>23%</td>
</tr>
<tr>
<td>Hyperautomation</td>
<td>26%</td>
</tr>
<tr>
<td>Legacy Application Modernization</td>
<td>24%</td>
</tr>
<tr>
<td>Digital Workplace</td>
<td>23%</td>
</tr>
</tbody>
</table>

n varies by segment, CIOs and technology executives answering, excluding “not sure”.

Q: What are the technology areas where your enterprise will be spending the largest amount of new or additional funding in 2022 compared with 2021?

Source: 2022 Gartner CIO and Technology Executive Survey
Despite the challenges since the pandemic, life science organizations are continuing to invest in foundational data and analytics and cloud capabilities that could further accelerate the path to becoming data-driven enterprises.

Composable Enterprises’ 2022 Activities Around Emerging Technologies

State of Deployment for Emerging Technologies
Percentage of Respondents Who Will Deploy Within Next 12 Months or Have Already Deployed

- High Composability (n = 148)
- Life Sciences (n = 61)

Q. What are your enterprise’s plans for the following digital technologies and trends?

Source: 2022 Gartner CIO and Technology Executive Survey

Artificial Intelligence/Machine Learning
Distributed Cloud
Responsible AI
Secure Access Service Edge (SASE)
Edge Computing
Composable Enterprise
Multiexperience Development Platform
MLOps
5G
Digital Twin

n varies by segment, CIOs and technology executives answering, excluding “not sure”

Q. What are your enterprise’s plans for the following digital technologies and trends?

Source: 2022 Gartner CIO and Technology Executive Survey
Life science CIOs indicate that functional areas that were most impacted due to the pandemic are targeted to receive increased technology investment.

The experience of the pandemic appears to have given life science organizations the urgency to accelerate digital initiatives across research and development, manufacturing and commercialization.

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**Life Science Industry-Specific Solutions Targeted for Increased Funding**

Percentage of Life Sciences Respondents

- Research/scientific solutions: 47%
- Manufacturing operations/production technologies: 38%
- Supply chain operations: 36%
- Sales enablement: 34%
- Clinical development technologies: 32%
- Core operations solutions: 28%
- Patient/consumer engagement: 26%
- Marketing enablement: 23%
- Finance solutions: 21%
- Quality, test laboratories and compliance solutions: 19%
- HR systems: 17%
- Digital Therapeutics: 13%
- Regulatory and filing/site/submission systems: 11%
- Governance, risk, compliance (GRC): 9%
- Medical affairs: 6%
- Translational sciences: 2%
- Safety, pharmacovigilance (PV), monitoring capabilities: 2%
- Legal: 2%
- Revenue management: 2%

**Source:** 2022 Gartner CIO and Technology Executive Survey

n = 47 Life science CIOs and technology executives answering

Q. Please select the top five life science industry-specific solution priorities that your company will spend the highest amount of new or additional funding on in 2022.
Conclusion: Composable Thinking Enables Business Adaptability and Overcomes Uncertainty

Digital research requires investments in data and advanced analytics in order to thrive in a disrupted ecosystem. Evaluate your existing research application portfolio by prioritizing solutions for their composability, and assess vendors rigorously on their ability to interoperate with your research platform.

Digital trials require composable platforms to integrate remote monitoring tools and diagnostics as well as meet patient-centric approaches. Partner with business peers to communicate the benefits of next-generation, patient-centric trial approaches that enable flexibility, inclusivity and improve trial outcomes.

“Around the patient” ecosystems are becoming interconnected as health digitalization takes shape. Develop a roadmap to the future state of a frictionless, interoperable and shared patient-centric experience by leveraging composable digital platforms in a partner ecosystem.

Smart manufacturing requires a setting where workers and technology interact in an open, connected and coordinated fashion. Differentiate your current and future smart manufacturing initiatives by creating a business architecture featuring modular digital capabilities that can be flexibly deployed as needed.
Actionable, objective insight

Explore these additional complimentary resources and tools for CIOs and other senior technology executives:

- **eBook**
  Top Strategic Technology Trends for 2022
  12 Trends Shaping the Future of Digital Business
  [Download Now]

- **Roadmap**
  2021-2023 Emerging Technology Roadmap
  Benchmark your plans and make investment decisions with confidence.
  [Download Now]

- **Webinar**
  Gartner Top Predictions for Healthcare & Life Sciences in 2022
  Discover market dynamics shaping the future of healthcare.
  [Watch Now]

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