IDC MarketScape: Worldwide Life Sciences R&D Lab of the Future Technology Solutions and Consulting Services 2024 Vendor Assessment
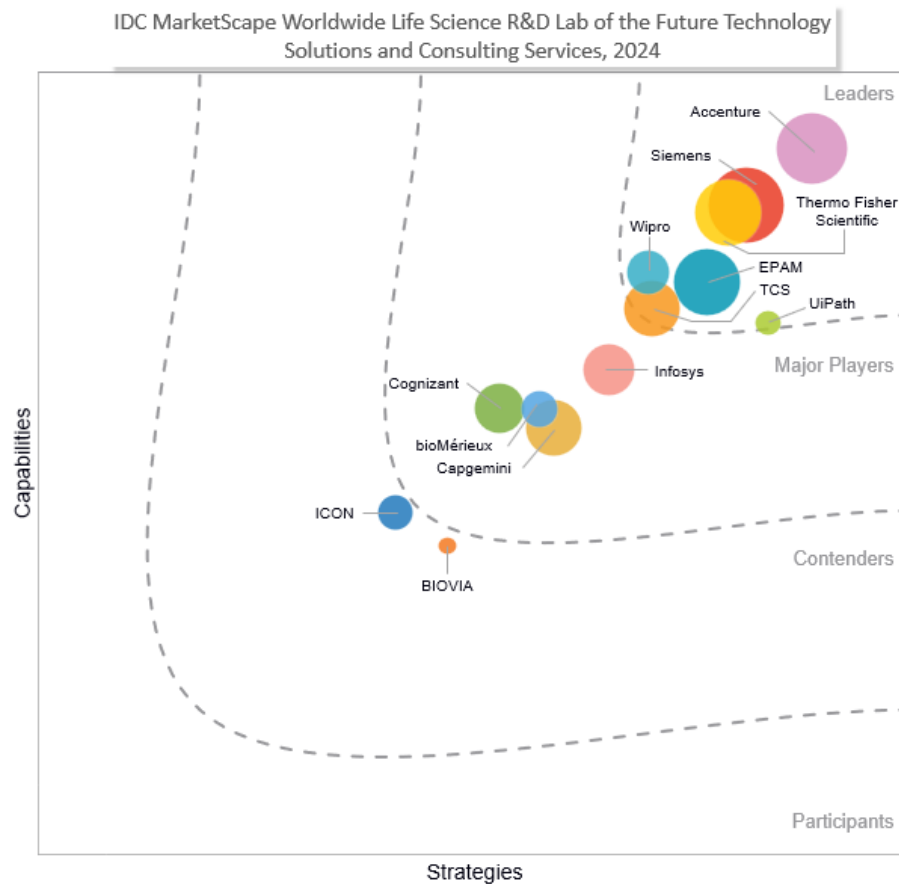
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THIS IDC MARKETSCAPE EXCERPT FEATURES ACCENTURE

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Life Sciences R&D Lab of the Future Technology Solutions and Consulting Services Vendor Assessment

Source: IDC, 2024

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IN THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Life Sciences R&D Lab of the Future Technology Solutions and Consulting Services 2024 Vendor Assessment (Doc # US51925324). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Essential Guidance, Vendor Summary Profile, Appendix and Learn More. Also included is Figure 1.

IDC OPINION

The term *lab of the future* (*LotF*) has recently gained significance. It is a collective name for the technologies and strategies that will serve to enable the next generation of researchers (refer to the Market Definition section for a detailed definition). It is important to examine why LotF has gained so much importance in the recent past and why the industry is suddenly moving at speed to adopt a LotF strategy. There are multiple reasons:

- There is deep frustration among scientists resulting from working on disparate siloed systems that do not speak with each other.
- We are seeing a sharpened appetite to rapidly scale innovation. The COVID-19 pandemic challenged preexisting operating models and set new expectations regarding the speed of bringing new drugs to the market. Bottom line, research needs to happen faster.
- One sees technologies such as automation, robotics, the Internet of Lab Things (IoLT), integrated platform as a service (iPaaS), cloudification of the laboratory, the use of AI/ML, augmented reality/virtual reality (AR/VR), voice recognition technologies, and generative AI, to name a few, maturing over time. This has created increased confidence in the implementation of these technologies.
- The diversity of existing laboratory information management system (LIMS), electronic lab notebooks (ELNs), smart instruments, and so forth within an organization has created an urgent need for a technology partner that can help rationalize the systems used, help with technology integration and consolidation, provide a road map to evolve a LotF vision for the organization, and help lead the way.
- The lack of connectivity across the life science value chain from design of experiment (DoE) to manufacturing and the absence of feedback loops can significantly impact the success of tech transfers, which are critical in accelerating time to value and time to market.
- We are entering a world that offers newer smart connected instruments, sensors, wearables, and smart devices that can transmit data to the cloud.
- The evolution of automated guided method execution solutions guide researchers through the step-by-step execution of standard operating procedures (SOPs), thus improving onboarding and compliance, and automated review-by-exception solutions enable instant batch release for tests that meet the requirements.

Labs do not want to be left behind in the digitization race. They want to transform, modernize, and scale beyond the pilot. Labs without boundaries are rapidly becoming a reality. There is a need for modern architectural thinking, a need to transition to the cloud, and to unleash the enormous potential of data hidden in pockets across the organization.

There is a need to transform the life of the scientist by eliminating non-value-adding activities, such as data wrangling and manual paper-based processes, to allow scientists to spend their time doing what they were originally meant to do, focus on science and innovation. This is the time to leverage technology to allow scientists to become more provocative, more inspirational, and more innovative.

New use cases are continuously evolving. Virtual reality is being leveraged to train scientists across the globe on complex instruments and novel procedures, and digital twins are being developed to pressure test certain lab procedures and to design frameworks for new lab architecture. Digital and architectural spaces are merging to inspire new behaviors. Implementing the right plumbing, the data pipelines to drive connectivity across instruments, systems, and scientists, will be critical. Data is most certainly the currency of innovation. It's the currency for decision-making. Evolving to become a data-centric organization and thinking about how to move the needle from instruments to insights is fundamental to moving toward a LotF vision.

It's necessary to recognize that the LotF is an ecosystem play, and lab modernization needs to embody strategies to digitally interface with partners, such as contract research organizations (CROs), contract development and manufacturing organizations (CDMOs), and supply chain partners, and to establish bidirectional dataflows to get the full benefit of the data.

It is also important to put the scientists at the center of the lab modernization process, embed "human centricity" and not just "data centricity" in product development, and ensure that the scientist is a part of the LotF journey. To scale adoption, this is a must.

Partner with technology providers that won't just help you think about the art of the possible but will bring it to bear.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

IDC frequently has unique insights into vendor selection processes within life sciences companies through clients and contacts in the industry. For a vendor to be considered for inclusion in this study, its services must have been significantly evaluated for the potential to engage clients within the target IDC MarketScape space.

The key inclusion criteria included:

- Vendors should have had at least 5 customers for their "lab of the future" offering for at least 12 months as of January 1, 2023.
- Vendors should provide both technology solutions and consulting services for their "lab of the future" offering.
- Vendors should have a minimum revenue of $200 million.

Further research and due diligence were then conducted to narrow the list of vendors to only those that IDC views as legitimate contenders for future deals within the life sciences R&D lab of the future technology solutions and consulting services. The 13 vendors selected to participate in this study are:

- Accenture
- bioMérieux
- BIOVIA
- Capgemini

- Cognizant
- EPAM
- ICON
- Infosys
- Siemens
- TCS
- Thermo Fisher Scientific
- UiPath
- Wipro

ADVICE FOR TECHNOLOGY BUYERS

An established LotF strategy serves as differentiator, accelerating innovation, powering tech transfers, improving quality, and driving efficiencies. The newfound focus on digitizing the lab across the value chain has left the life sciences industry struggling to find the right partners to drive this strategy, help them get ahead of the curve, and stay a step ahead of their competitors. Further:

- Architect an enterprisewide scalable and flexible LotF strategy.
- Embed the voice of the scientist in your LotF strategy. Minimize the friction points in their workspaces by integrating dataflows and workflows. Make the journey of the scientists across different instruments, platforms, and applications as seamless as possible.
- Transform workspaces to enable global collaboration and co-innovation. Co-innovation is reshaping the world today.
- Build learning systems with feedback loops from manufacturing back to the DoE stage.
- Respect the fact that it's not an easy walk to transition from old processes to new operating models. Build out a phased implementation road map.
- Note that it's all about the data. Establish data governance models. Enable controlled but seamless access to data, and address latency issues. Remember that the scientists of yesterday are becoming the data citizens of today. Implement change management strategies to drive adoption at scale. Incentivize users to adopt new technologies and new operating models.
- Design "self-documenting" labs, leverage voice assistants, and improve the user experiences.
- Implement guardrails to ensure compliance with regulations regarding data security, data privacy, and data sovereignty.
- Upskill your scientific team on technology, tools, and data strategies. Let them not feel that they are entering an unfamiliar world – competency builds confidence and trust. Build a "data centric" culture. Get a clear picture of what "fit-for-purpose data" means for you.
- Leverage all the tools in your partners' toolbox. Take guidance to ensure that the right technology is being applied to the right use case. Definitely leverage generative AI to accelerate lab transformation.
- Weave sustainability strategies into your lab modernization road map.

- Establish a governance model for the rollout of your LotF strategy. Identify key stakeholders across business and IT to drive this strategy. Delineate key business outcomes and monitor success.
- Build a collaborative ecosystem of LotF partners – there are many moving parts. But carefully choose one strategic technology implementation partner that will help orchestrate all the pieces and paint a cohesive vision of the future.

VENDOR SUMMARY PROFILES

This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and challenges.

Accenture

After a close evaluation of Accenture's offerings and capabilities, IDC has positioned the company in the Leaders category in the 2024 IDC MarketScape for worldwide life sciences R&D lab of the future technology solutions and consulting services.

Headquartered out of Dublin, Ireland, Accenture has been offering LotF solutions for the past three decades and is present in 120 countries. Accenture employs over 730,000 people, with over 600 laboratory transformation advisors and practitioners, with an average of 10 years of experience. Over 100 senior resources have more than 20 years of LotF experience. A large majority of Accenture's LotF business is derived from companies with over a billion dollars in revenue, with a third of its customers from Europe and over half from the United States. Accenture has implemented over 130 LotF engagements over the past five years for the life sciences industry, with more than one-third of its customers representing pharmas and biotechs. In addition to medical device companies and contract research organizations, Accenture also offers LotF services to consumer goods, natural resources, and energy industries and to the government.

Strategic Initiatives

Over the next few years, Accenture intends to expand its digital labs offerings and develop more of its digital lab transformation ideas and solutions. It will continue to invest in upskilling its teams and those of its clients to develop digitally equipped scientists to operate the LotF. It recently invested $3 billion in generative AI, and it will continue to invest in robotic process automation (RPA). It envisions that the demand for LotF business is expected to grow as labs across industries move from a "wet lab" to "dry lab," where experiments are performed "in silico."

M&As/Partnerships

Accenture has built a Digital Lab Partner Ecosystem of large vendor partners (such as Microsoft Azure, AWS, and Google), leading lab informatics vendors, and novel technology vendors. This is further augmented with joint go-to-market initiatives. A few of these include:

- **AWS:** The cloud-native Velocity Labs platform is jointly funded and co-developed with AWS-native capabilities, leveraging data fabrics and low-code technologies; integration with traditional lab software, such as LIMS, ELNs, and ERP connectivity facilitating right-time release; and is digitally decoupled from vendor-specific lab platforms, enabling a capability-centric platform approach.

- **Lab informatics and novel technology partners:** Accenture is partnering with an ecosystem of platform and engineering to create digital labs of the future. These companies range from automation, laboratory furniture and fixtures and robotics, lab connectivity and Internet of Lab Things, and SaaS solutions (LIMS, ELN, LES, SDMS) to sustainability. Accenture's Digital Lab Ecosystem partners are also invited to showcase their capabilities for clients from within Accenture's global digital lab environments.
- **SAP:** Integrating labs solutions with SAP S/4HANA platform, Accenture helps life sciences clients succeed on their digital transformation journey and accelerate key business processes such as lab scheduling, QC inspection, and batch release.
- **Appian:** Accenture has utilized Appian to develop a low-code, front-end user application to simplify the day-to-day life of a lab analyst.
- **ServiceNow:** The ServiceNow-based solution supports the life cycle of instrument asset management and logbook event management within a single platform.

Pricing Models

Accenture has a number of pricing models including a sharp focus on value-based pricing. Its pricing models include as-a-service/subscription models, bundled implementation and managed services contracts, risk/reward models, "fee at risk" approaches, outcome/value-based arrangements, team run rates, retainers, and base plus milestones, as well as standard fixed price and time and material pricing models.

Strengths

Accenture's differentiators include the company's "end to end" laboratory transformation capabilities, including its strategy and consulting expertise; scientific informatics team, experts, and practitioners with deep expertise across life sciences and laboratories; proprietary assets to accelerate lab transformation; innovation hubs; and technical capabilities to drive implementation and long-term application and infrastructure support, complemented by its ecosystem of industry partners. Accenture has extensive experience in implementing LIMS and ELNs across all the major vendors. Its five themes for technology acceleration are "Comprehensive Data Strategy," "Internet of Lab Things," "Connected Scientist," "AI/ML Applied Intelligence," and "Platform Architectures." Its accelerators speed up batch release, reduce manual data entry, increase lab productivity, and reduce lab record review.

A few of Accenture's accelerators include:

- Insilico Bio (which mines data from over 50 million patient records) accelerates target discovery, reducing "wet lab" work, with "dry lab" AI.
- Its cloud and AI-enabled Velocity Labs accelerator improves the lab experience, drives operational efficiency, and increases quality and compliance.
- SmartLab asset management is powered by ServiceNow to optimize utilization.
- Digital Product Life-Cycle Management (PLM) tools digitize product and process information and facilitate data product handover from R&D to manufacturing in the life sciences industry, accelerating technology transfer, regulatory filing, and manufacturing problem-solving.
- CMC Biographer is a data-driven and predictive insights approach to authoring regulatory submissions, which shortens submission timelines.

Accenture's Advanced Learning Environments Laboratory (ALE Lab) serve as innovation hubs in the United States, Europe, and Asia, bringing to life the art of the possible for clients and serving as

training hubs (Accenture's scientific consulting development program) for Accenture and its clients. These labs showcase technologies such as generative AI, the Internet of Lab Things, augmented reality (to facilitate collaboration among scientists), virtual reality (to facilitate employee training), robotic process automation to eliminate nonvalue-adding activities, intelligent scheduling and lean lab demonstrations, and the digitization of lab methods to guide scientists.

Accenture innovation labs have created digital twins for monoclonal antibody production and for fermentation processes. These *in silico* simulations guide decision-making around critical process parameters and cell-specific parameters and help predict process outcomes. Accenture's team works with clients and partners to leverage deep learning AI systems to, for example, predict protein structure, significantly reducing wet lab work for x-ray crystallography. Accenture has modeled laboratory spaces in the metaverse to help scientists collaborate with each other, the physical laboratory, and digital lab innovations from multiple virtual reality platforms including Microsoft Mesh. Clients can also leverage IoT, automation, and robotics to bridge the gap between virtual and physical worlds.

The most common "lab of the future" ask from Accenture's customers is support for defining and executing their strategic vision for the evolution of their laboratory people, process, data, and technology. The top 5 use cases where Accenture supports its customers with its LotF offering are application modernization, rationalization and journey to the cloud, lab connectivity and data strategy projects, talent transformation, and change management, driving automation and AI, process development, and manufacturing acceleration.

Accenture's example of a complex LotF technology implementation engagement involved helping a global vaccine manufacturer modernize its labs. Accenture helped accelerate the configuration and implementation of its clients LIMS to establish foundation dataflow for release testing and partnered with its clients to build a platform-based solution for quality transformation, using AWS as the cloud platform. Accenture, in collaboration with AWS, developed a Guided Method Execution capability for the client as part of its Velocity Labs platform. The solution also included construction of an Appian-driven Method Authoring tool, which is designed to allow lab scientists to configure new tests without IT intervention. Velocity Labs also supported instrument integration and the integration of a web-based orchestration platform. This was done in eight months.

Accenture's example of a complex LotF consulting engagement involved helping a global pharma modernize its bioanalytical labs. While the lab had upgraded lab instruments, incorporated robotics into assays, and upskilled its scientific staff, these did not result in the level of major transformation looked for. Accenture developed a strategy and business case for process and technology improvements needed. It performed a gap analysis and characterized the ratio of high-value scientific effort to low-value manual efforts. It then developed a prototype of cloud-based parsers to organize robotic actions and instrument results into structured formats. Its experts delineated the delta in the process and financial value between the current state and the future state. This combination of process analysis, technical pilots, and value-centric storytelling enabled its clients to advocate for improving its lab informatics systems and accelerate the generation of scientific data.

"They assessed the pain points of our QC labs. They created a persona journey. Identified 7 critical capabilities. Socialized that and got that signed off by senior leadership. They moved us to predictive or adaptive, which is the top level (Level 5, BioPhorum Digital Plant Maturity Model). They brought in capabilities around LIMS, MIP, and big data; they worked with the team to create a QC data fabric. Accenture developed the strategy. We are still using the persona journeys today – they did a great job

with that. They have a high level of expertise, the right price points, and good technologists. They have the ability to get to a value statement and outline a business case in a logical way," said the senior executive of a prominent global pharma, which had engaged Accenture for a LotF strategy.

"We have a scientific research center and wanted to increase productivity by digitalizing the practice. Accenture did a very good analysis and implemented digital solutions, such as ELNs. They have a skilled LotF practice – they are the leaders in the field. They are very visionary and inspiring. They are a compelling partner in many respects. They work in a well-coordinated manner and have in-depth process knowledge about what the software product supports, how to implement it, and what to pay attention to, across many technology vendors. Accenture is certainly one of the more skilled partners to work with. If I have a challenge, they are a safe partner to reach out to and I am confident that they will be able to help me," said the senior executive with a prominent global healthcare company.

Challenges

Accenture's methodologies and processes might be challenging to incorporate within another company's processes, and it would be helpful if Accenture were to show more flexibility in adapting to customer's processes as well. Owing to the worldwide shortage of key skills, Accenture may find it difficult to mobilize skills at that pace, but its global scale mitigates any skills gap.

Consider Accenture When

Consider Accenture when seeking a partner that brings in a blend of strong LotF strategy, deep LotF domain expertise, expertise in implementing diverse technologies, its multiple innovation labs that also support LotF talent development, and its ecosystem of partnerships to support LotF implementations. Seek Accenture's help for designing laboratory transformation road maps, change management, and driving end-to-end laboratory transformation, from both a technology and an organizational change management perspective.

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis, or strategies axis, indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represents the market share of each individual vendor within the specific market segment being assessed.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

For the purposes of this study, the term *lab of the future* is a collective name for the technologies and strategies that will feature and enable the next generation of researchers. These would include things such as a comprehensive data strategy, advanced analytics, automation, robotics, the Internet of Lab Things (IoLT), integrated platform as a service (iPaaS), "lab on a chip" (LoC) technologies, intelligent laboratory instrument management system (ILIMS), laboratory information management system (LIMS), electronic lab notebooks (ELNs), smart instruments, cloud solutions, the use of AI/ML, generative AI, AR/VR, voice recognition technologies, and sustainability strategies.

This IDC MarketScape evaluates life sciences R&D LotF technology solutions and consulting services capabilities.

Market Overview

The time has come to step into scientists' shoes to understand their pain points and to help transform their world, chart out opportunities, look into the future, architect a road map, and drive full-blown digital lab transformation.

The industry's transformational journey is as follows:

- The life sciences industry is on the move, the LotF is no longer a pipedream. It is becoming a reality as we speak.
- "Doing more with less" is top of mind as the CXO level focus remains centered on sustainability and resiliency.
- Technology players are pulling out every arrow from their quiver, ranging from IoLT, smart instruments, intelligent automation, AI/ML, generative AI, and AR/VR to drive the digital transformation of the lab.
- Intelligent automation is being leveraged to radically transform lab operations.
- There may be different entry points in the life cycle value chain for a technology provider to come in and drive transformation in lab modernization strategy. While some may engage at the R&D level, others may focus on quality labs for manufacturing. At the end of the day, it is about connecting the dots across the entire value chain. That overarching vision should drive LotF strategy. Establishing an organizationwide ontology database will be key to enabling this.
- Driving an LotF strategy is an ecosystem play, and technology providers are carefully architecting out strategic partnerships that will differentiate them from the rest.

- It is no longer about running a few pilots, it is about a holistic, end-to-end architected vision for enterprisewide implementation. Design frameworks and road maps are being developed to guide labs toward their future vision.
- The scientist needs to be a part of the journey — otherwise it's not happening. Change management will be key to scaling adoption. Workflow orchestration needs to be done in a way that drives efficiencies without significantly disrupting legacy operating models, a tricky balancing act.
- Metrics are moving beyond productivity and cost efficiencies and other tactical parameters. The leadership is focusing on business outcomes, including accelerated innovation, speed to market, the success of tech transfer, improvement in product quality, and collaboration and co-innovation.

LEARN MORE

Related Research

- *Sponsor and Vendor Challenges for Implementing a LoTF Strategy — Defining Measures of Success* (IDC #US51880724, March 2024)

Synopsis

This IDC study has a specific focus on LotF solutions and consulting services in the life sciences R&D space. This document seeks to compare major service providers with each other based on criteria that should be important to life sciences companies when considering the selection of a technology solutions and consulting services partner to help implement a LotF strategy, transformation and modernizing labs, across the value chain, from design of experiment (DoE) to manufacturing, and back. This is the first time that an IDC MarketScape assessment on this topic in life sciences has been performed.

"The 'lab of the future' is a vision that is rapidly becoming a reality. A term that not a lot of the industry had heard in the past is suddenly the buzz word of today. There has been a sudden realization of the enormous value proposition that a LotF strategy brings to the table, and everyone has woken up to the need to adopt this strategy. Organizations are rethinking, reinventing, and rebuilding — at scale," said Dr. Nimita Limaye, research VP, Life Science R&D Strategy and Technology, IDC.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. With more than 1,300 analysts worldwide, IDC offers global, regional, and local expertise on technology, IT benchmarking and sourcing, and industry opportunities and trends in over 110 countries. IDC's analysis and insight helps IT professionals, business executives, and the investment community to make fact-based technology decisions and to achieve their key business objectives. Founded in 1964, IDC is a wholly owned subsidiary of International Data Group (IDG, Inc.).

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