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FORRESTER OPPORTUNITY SNAPSHOT: A CUSTOM STUDY COMMISSIONED BY THERMO FISHER SCIENTIFIC
JANUARY 2021

Future Fit Labs Require A People And Technology Evolution

COVID-19 disrupted how businesses and customers operate, propelling digital acceleration to the forefront of business leaders' minds. For lab decision-makers, meeting strategic goals in 2021 and beyond will require accelerating adoption of new technologies; modernizing infrastructure to support more automated, connected environments; and recruiting, retaining, and upskilling already highly experienced workers. Welcome to the lab of the future.

In August 2020, Thermo Fisher Scientific commissioned Forrester to explore the short- and long-term impact of COVID-19 on lab transformation strategies. We interviewed three and surveyed 200 lab strategy decision-makers and found that while labs have invested in automating and connecting instruments, they still must overcome many people, process, and technology hurdles to enable continuous innovation.

Key Findings



Labs have automated the simplest use cases. As they become more connected, the opportunities grow for faster time-to-insights across technologies and remote operation.



While the lab of the future ultimately enables and empowers knowledge workers, current infrastructure and upskilling challenges cause friction.



Leaders believe that recruiting, supporting, and upskilling workers are the biggest drivers of future competitive advantage.

Disruption Forces Lab Transformation

The pandemic has forced businesses to adapt to accelerated market trends and changing customer needs. As a result, executives are committed to accelerating their digital transformation efforts, including investing in the intelligent, connected technology that is vital to efficiently run the lab of the future with the collaborative capabilities their constituents need.

As lab strategy leaders concurrently focus on technical innovation and optimizing asset utilization, they are prioritizing tech investments that empower rather than replace lab workers. Forrester has predicted that while some companies are investing in automation to eliminate human workers, companies that invest in automation to combine human and machine strengths will gain a competitive edge with their resulting engaged and creative workforces.¹

“Which of the following are contributing most to the changes you are experiencing at your organization in 2020?”

(Showing top 3)

- 
- 1 The impact of COVID-19 on our revenue
 - 2 The impact of COVID-19 on the broader economy
 - 3 Changes to how our customers do business with us

“How have the changes you’ve experienced in 2020 impacted your organization’s lab strategy approach?”

(Showing top 5)

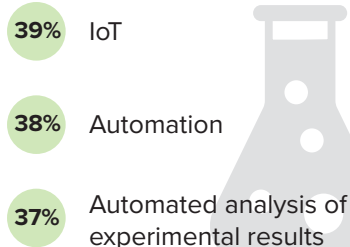
- 
- 1 Increased executive buy-in to accelerate our digital transformation efforts
 - 2 Increased our focus on collaboration internally, with customers, with partners
 - 3 Increased our focus on investing in collaboration technologies
 - 4 Accelerated our focus on investing in intelligent, connected technology
 - 5 Forced us to better optimize asset utilization, machine and human

Connectivity Fuels Innovation

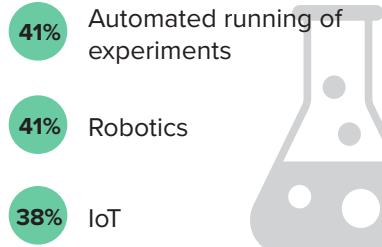
Asset-intensive industries have been slow to invest in connectivity, but COVID-19 forced many to operate — at least in part — remotely.² Now, internet-of-things (IoT) technologies support some portion of the lab environment for 77% of respondents. When more instruments in labs share data automatically, teams have remote control of scientific equipment and can reach meaningful scientific insights faster. Most lab environments are partially automated: 37% of respondents report that automated analysis of experimental results supports much of the lab environment. As automation adoption increases and technologies mature, labs are piloting more complex use cases in areas like automated running of experiments and preparation of experiments and samples. In many cases, this involves the use of robotics to replace more menial human work.

“How is your organization prioritizing the following technology investments?” (Showing top 3)

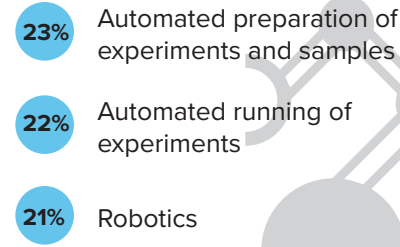
CURRENTLY SUPPORTS MUCH OF OUR LAB ENVIRONMENT



CURRENTLY SUPPORTS A PORTION OF OUR LAB ENVIRONMENT



ADOPTED AS A PILOT



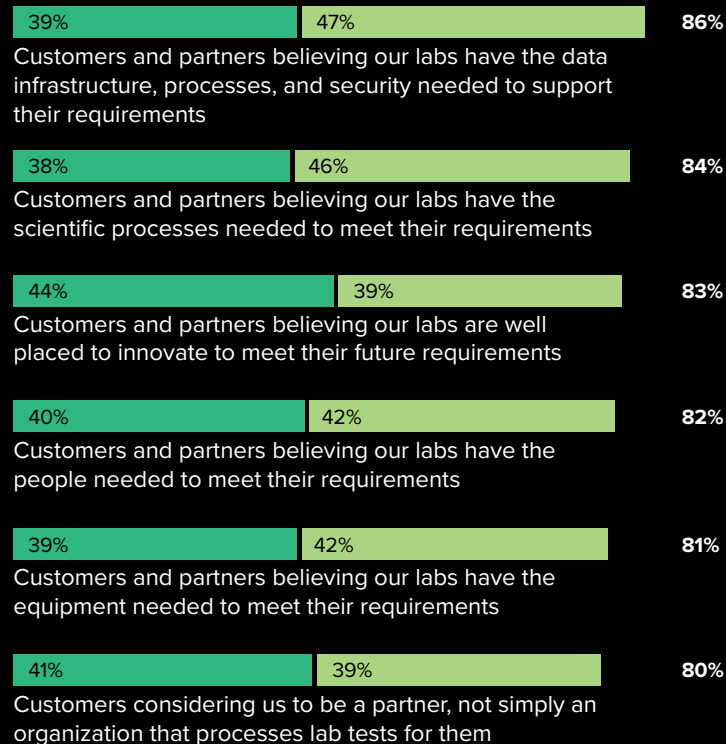
What It Means To Be Future Fit

Labs must have the right mix of people, process, and technology to enable continuous innovation and growth. In fact, respondents report that having the right data infrastructure, processes, and security (86%); the right scientific processes (84%); the right people (82%); and the right lab instruments (81%) in place is crucial to maintaining and/or strengthening their competitive advantage. Recognizing this, and following through to deliver on that recognition, are not the same thing. From analyzing 20 years of global survey data, Forrester has found that only 20% of today's business leaders are future fit. Forrester defines future fit leaders as the ones who are ready to seize technology and make good use of it. They are the ones most prepared to navigate change and help shape our collective future.³ As the rate at which customer demands evolve accelerates, it is more important than ever for labs — and their leaders — to be future fit.

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“How important are the following to maintaining and/or strengthening your lab’s competitive advantage?”

● Important ● Very important



Base: 200 global decision-makers at the director level and above who are highly involved with and responsible for R&D strategy and decision-making
Source: A commissioned study conducted by Forrester Consulting on behalf of Thermo Fisher Scientific, November 2020

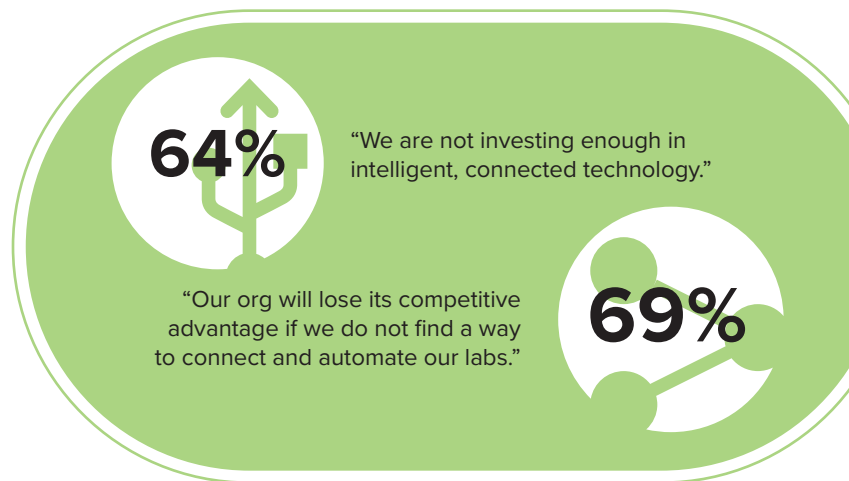
The Innovation Gap Widens

The gap is widening between lab leaders and laggards. The most progressive labs routinely use cloud-based applications to enable collaboration across globally distributed research teams and combine IoT, AI, and even augmented reality (AR) to remotely monitor, maintain, and control complex experimental instruments.⁴ Their less innovative peers struggle to keep pace.

Most (64%) decision-makers are not investing enough in intelligent, connected technology, and 69% believe they will lose their competitive advantage if they don't find ways to connect and automate their labs. Successful innovation requires not only future fit leadership, but also a network of strategic partners willing to collaborate for innovative outcomes. Yet 59% of respondents report that their lack of a strategic partnership with suppliers prevents them from understanding where innovation roadmaps are aligned.

“Please rate your level of agreement with the following statements.”

(Showing agree/strongly agree)



“Our lack of a strategic partnership with our suppliers prevents us from understanding if our innovation roadmap is aligned to theirs.”

Scaled Lab Transformation Is Challenging

The lab of the future requires culture, process, and technology to work together to attract, enable, empower, and retain highly skilled lab workers. Yet seamless integration is far from reality for most labs. Existing lab equipment (67%) and the software running it (71%) hinder automation scaling efforts, and legacy data infrastructure prevents scientists from maximizing their access to insights (69%).

As leaders race to create more automated, connected lab environments, they struggle to attract and reskill knowledge workers. In fact, 66% of respondents struggle to reskill employees as they try to balance embracing new tech opportunities with maintaining their legacy tech environments, and 64% report challenges attracting skilled workers in the first place. The pandemic also introduced a new complication for many: the need to remotely sustain a culture of collaboration and innovation.

“Please rate your level of agreement with the following statements.”

(Showing agree/strongly agree)

TECHNOLOGY CHALLENGES



Current lab software is preventing us from automating our lab environment at scale.



Current data infrastructure is preventing us from maximizing access to insights from lab work.



Current lab equipment is preventing us from automating our lab environment at scale.



Legacy infrastructure is holding our organization back from scaling our lab transformation efforts.

PEOPLE CHALLENGES



Reskilling efforts are challenging as we try to balance capitalizing on new tech opportunities while maintaining our legacy tech environment.



Our organization struggles to maintain our culture of innovation as lab workers now interact less often within the lab.



It is difficult for our lab to compete against high-tech firms for highly skilled workers.



Our organization is restricted in our ability to collaborate across its different labs due to strict accreditation rules and regulations.

The Lab Of The Future Never Sleeps

The lab of the future is always on. It is automated and connected to the benefit of the (internal or external) customer, the employee, and ultimately the business.

Empowering employees and technology to work at peak capacity is the most important people-oriented lab-of-the-future enabler. The lab of the future automates routine tasks to allow employees to focus on meaningful and complex work — regardless of their physical location. Lab-of-the-future leaders seek to modernize infrastructure and data management practices to support a connected lab environment that will enable scientists to meaningfully and quickly engage with harmonized instruments and machines, connect scientific data from various sources, and collaborate with other people remotely.

“Which of the following are most important to enabling your vision for your lab of the future?”

(Showing top ranked responses)

TECHNOLOGY



Modernizing infrastructure to support a distributed workforce



Improving consolidation and representation of data to provide better insights to customers



Modernizing infrastructure to enable scientists to engage with our machines, data, and people remotely



Modernizing infrastructure to support a more connected lab environment

PEOPLE

Empowering employees and technology to work at peak capacity



Improving collaboration across labs with clients and partners in a way that matches or surpasses in-person collaboration



Enabling employees to focus on meaningful and more complex/value-driven work



Upskilling current staff



People Are Your Future

Decision-makers know that making their labs future fit requires change, but they also look forward to multiple benefits from doing so, including improved utilization, increased efficiency, and increased revenue. The changes correlating most strongly to the benefit of increased competitive advantage are all about people. The top three drivers of competitive advantage for future fit labs are recruiting highly skilled workers, modernizing infrastructure to support a distributed workforce, and upskilling current staff.

Many lab-of-the-future conversations center on technology. As labs adopt intelligent AI, automation, and adjacent technologies, the role of scientists and lab personnel will transform but not disappear. Routine tasks may be automated. Even highly experienced workers will be challenged to expand their skill sets and work more closely with machines and software. Lab-of-the-future leaders and their teams must grasp this opportunity and start preparing today.

Top 3 Drivers Of Competitive Advantage



Customers Demand Flexibility, Efficiency, And Quality

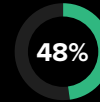
Lab executives believe that investing in flexibility, efficiency, and data quality matters most to their customers. When ranking the relative importance of quality, speed, and cost, respondents cite quality as most important to both them and their customers. Although labs must prioritize quality, they cannot forget cost and speed.

Respondents report they're not investing enough in intelligent, connected technology. But that is exactly what their customers demand. Most respondents (59%) also agree their lack of strategic partnership with suppliers prevents them from maximizing the value of aligned development roadmaps. As lab leaders modernize their equipment and processes, they must build partnerships with strategic suppliers that have demonstrably done all of this before, with an eye to the quality of outcome that customers value so highly.

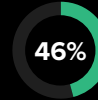
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“How important do you believe your customers and partners would find the following investment initiatives at your labs?”

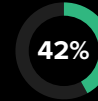
(Showing top 3 ranked)



Investing in having the latest lab equipment to increase test menu offerings or capabilities



Investing in having the latest lab equipment to streamline testing

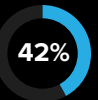


Investing in offering the best data analysis tools and processes

“Which of the following are most important to your partners/customers?”

(Showing top ranked)

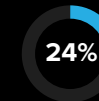
Quality of results



Speed to achieving results



Cost of achieving results



Base: 200 global decision-makers at the director level and above who are highly involved with and responsible for R&D strategy and decision-making
Source: A commissioned study conducted by Forrester Consulting on behalf of Thermo Fisher Scientific, November 2020

Conclusion

The lab of the future sets companies up to meet evolving customer expectations, but building it is a massive undertaking. It's easy to focus on the technology aspects of delivering an integrated ecosystem spanning analytical instruments, software, and data, but delivering the lab of the future must be a business-led strategy far more than a technology-led strategy. Choosing strategic partners to support the whole initiative is just as critical as the hardware and software choices you make. And the most critical element of all? It's the one that's often overlooked or underestimated: nurturing, upskilling, and reskilling the people you already have and attracting the future talent you'll need.

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Contributing Research:

Forrester's CIO research group

Methodology

This Opportunity Snapshot was commissioned by Thermo Fisher Scientific. To create this profile, Forrester Consulting conducted three interviews and an online survey of 200 global lab of future strategy leaders. The custom survey began in August 2020 and was completed in November 2020.

ENDNOTES

¹ Source: "Firms And Governments Will Invest In The Once-Impossible To Drive The Future Of Work," Forrester (<https://www.forrester.com/fn/fnx1/5iuSMhwlSie9eQqD3mtGj>).

² Source: "Predictions 2021: Internet Of Things (IoT)," Forrester Research, Inc., October 27, 2020.

³ Source: "Introducing Forrester Future Fit," Forrester (<https://www.forrester.com/fn/fnx1/3nsX9tO12eOUKI3Gb2gHm3>).

⁴ Sources: "IoT Transforms Supply Chain Management," Forrester Research, Inc., December 11, 2020, and "Connected Solutions Are Proving Their Worth In Today's Crisis; Make Them A Critical Part Of Your Near-Term Roadmap," Forrester Research, Inc., April 28, 2020.

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Demographics

COUNTRY

United States: 38%

France: 22%

Germany: 15%

UK: 15%

Switzerland: 7%

The Netherlands: 5%

LAB STRATEGY RESPONSIBILITY

Final decision-maker: 83%

Part of a team making decisions: 17%

Decision influencer: 1%

COMPANY REVENUE

\$300M to \$499M: 18%

\$500M to \$1B: 22%

\$1B to \$5B: 27%

>\$5B: 35%

INDUSTRY

Healthcare and/or diagnostics: 28%

Manufacturing and materials: 22%

Agriculture, food, and/or beverage: 16%

Chemicals and/or metals: 13%

Pharmaceuticals: 9%

Technology and/or technology services: 8%

Other: 4%

Note: Percentages may not total 100 because of rounding.



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