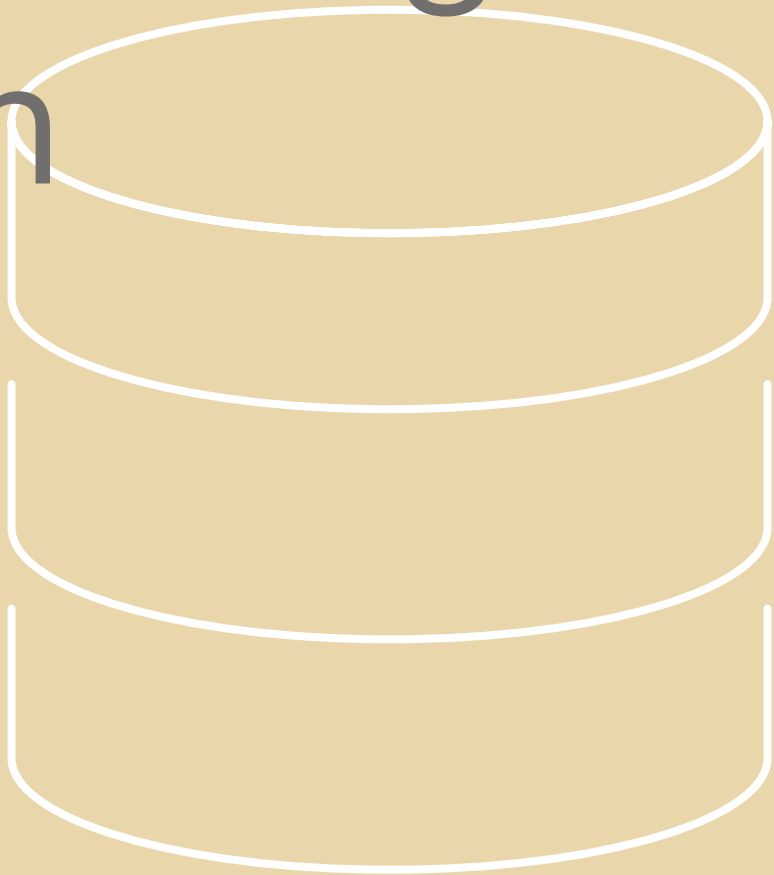


Building the Right Data Foundation for Your Growing Biotech



Benchling

Cutting-Edge Software
for Cutting-Edge Science

Introduction

In today's bioeconomy, we need to move quickly to solve urgent problems. Yet the hurdles faced by growing biotechs, such as improving time-to-insight and generating accurate, reproducible data, are complex. Often, these issues arise from technology and tools, making them distinct from purely scientific challenges. Whether your company is bootstrapping as a five person startup or scaling a new solution with 50 scientists, data will always be your most valuable asset. Thus, it's critical your technology infrastructure is as robust as your science.

The key to making the most of your science and innovating faster is easy access to highly actionable data. The most efficient R&D organizations are those whose culture is built around data excellence — which, in turn, is built around tools and processes that support excellence for both the administrator and end user. In this perspective paper, we spoke with three industry experts about four ways to build and foster a strong, flexible data foundation:

Invest early in the data foundation of your company

Go cloud or get left behind

Vet your vendors

Let your technology partners do the heavy lifting



Aaron Friedman

Principal Startup Solutions
Architect, Amazon Web Services



Karina Chimelewski

VP, Platform Operations,
Third Rock Ventures



Aaron Friedman

Global Head of Healthcare and
Life Sciences, Snowflake

Invest in the data foundation of your company early

It's important to formally designate a steward for your organization's data so they are empowered to optimize and govern your data foundation in a way that supports all of your teams from day one. For companies that are too small to have a dedicated IT department, this might mean designating one of your scientists as a systems administrator. By investing in this approach early on, your team can stay focused on impact and innovative research rather than worrying about where data is collected and stored.

Choose flexible software

Scalable software is flexible software. Software that can nimbly pivot to your company's evolving needs will ensure you are never locked into specific methods of data management, but rather, that your approach towards data organization and governance can continually become more sophisticated and grow alongside your organization.

“While I think that yes, scale is important — flexibility is even more so. Flexibility and scale go hand in hand, and I think that’s something that’s incredibly valuable as organizations experiment early on.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

Establish and maintain a single source of truth

Scalable software is flexible software. Software that can nimbly pivot to your Data is a valuable resource, and getting the most value out of your organization's data will require creating a single location in which all data is stored. This will ensure complete clarity, accuracy, and accessibility of your data while avoiding the potential discrepancies and time loss that go hand-in-hand with relying upon disparate systems.

“There’s been a mindset shift. If you want to centralize all your data assets and be able to quickly incorporate new ones, since the fundamental idea is we have data from different sources, we need to organize, normalize, and apply governance to make it accessible and accelerate discovery.”

Aaron Friedman

Principal Startup Solutions Architect

Healthcare and Life Sciences, Amazon Web Services

Remove data silos for greater collaboration

Developing a single source of truth for all your organization's data means teams will no longer need to rely upon a collection of systems for housing data. This not only eliminates the inefficiency of tracking down information across a variety of locations, but simultaneously enhances collaboration by ensuring everyone is communicating using the same, accurate information.

Let scientists do science

Toggling between multiple systems can pose an unnecessary drain on time and resources. Unifying your data provides scientists at growing biotechs the freedom and ability to focus solely on their work.

“Pick the best of breed systems for managing your data, remove the silos, integrate them well, and aggregate.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

“Building a strong, scalable technology foundation will let you innovate faster and more effectively. It will help you create a secure collaboration platform with your partners and allow your R&D team to focus on science — on the things they should be working on — innovation and discovery.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

Put in effort upfront for benefits down the road

will be an investment that repeatedly pays off. Simplified access to data using a flexible, nimble platform means scientists will routinely save valuable time that would otherwise be spent tracking down information across multiple systems, speeding innovation and discovery.

“It gets back to ease of use and reduces friction on day one. The mindset when I work with startups is, ‘Do we know this is going to be important?’ The answer is probably yes. So let’s try solving for it earlier. It may take a little bit more effort to do one or two more things upfront, but long-term, it’s absolutely going to be the right investment.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

Go cloud or get left behind

In contrast to conventional, on premise software, centralizing your data in the cloud will unlock improved flexibility, accessibility, and scalability. When your biotech startup is “born in the cloud,” you’ll be able to make decisions and innovate faster for a few key reasons.

Experiment at scale

The cloud enables a level of scale and speed that was previously not possible with on-premise solutions. This allows teams to test more ideas more quickly, expanding the breadth and depth of your research program.

“With platforms that are delivered as a service, like Snowflake and Benchling, you’re immediately able to do what I call ‘experiments at scale.’ And for me, culturally, that was a big change for my team going from an on-premise environment. It was, ‘Can we try this?’ The answer is yes. It’s not — you have to wait for it to deliver something in six months. Yes. Go try it. Now you can absolutely do that.”

Todd Crosslin

Global Head of Healthcare and Life Sciences, Snowflake

Accelerate discoverability and innovation

The right cloud solution will allow you to quickly interrogate vast computational data sets, shorten feedback cycles, and arrive at answers faster. Given the scalability of the cloud, it is possible to significantly increase the throughput by which data is digested and analyzed.

“Say you’re starting to do target discovery and want to do high-throughput virtual screening. You’re able to do that in ways that, historically, with a capacity constrained on-premises cluster, can now scale to thousands, hundreds of thousands, or even a million virtual CPUs.”

Aaron Friedman

Principal Startup Solutions Architect

Healthcare and Life Sciences, Amazon Web Services

Pivot quickly when required

The ability to pivot is critical for any growing biotech. New data can inform new directions of research, and the emergence of new experimental techniques can unlock new lines of previously inaccessible discovery. A cloud-based solution can shift and adapt to your organization's evolving needs.

“This sort of utility model makes a lot of sense because you just pay for what you use. If the experiment isn’t directing you towards where you want your organization to go, you stop. You don’t have any legacy infrastructure that you then have to decommission or find another use for. You just go onto the next thing. That’s something that’s incredibly valuable as organizations experiment early on.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

Derive value from your data

Data is the lifeblood of any biotech company, but its value is reduced if it's not centralized and standardized in a single, accessible location. Moving data to the cloud provides this single source of truth and allows growing biotechs to interact with their data in new ways, unlocking further value.

“There’s a ton of capabilities, scalability, and flexibility that cloud computing provides. But if I had to pick one thing, it makes it easier to get value from your data.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

Vet your vendors

It may seem obvious, but it's imperative to perform proper due diligence when evaluating a new software solution. It can actually be quite difficult to properly vet a potential new technology provider, so the following points are useful to keep in mind.

Evaluate the quality of the software platform

In evaluating the quality of the vendor's platform, ensure it has the capabilities previously mentioned, such as the ability to centralize all data in a unified location, aggregate data from multiple sources, and share sensitive data securely.

“There are a number of things that we take into consideration when evaluating vendors. The first one is obviously the quality of their platform they’re offering.”

Karina Chmielewski

Vice President, Platform Operations,
Third Rock Ventures

Consider whether the vendor has the resources you require

When you're vetting tools, make a point to see if that vendor has a customer success team in your region to support your growth. After implementation, understand what else they can provide in terms of service and support when you hit inevitable, unforeseen challenges.

“Think about the vendor from the support perspective. Do they have resources you would potentially need to implement? What is the roadmap to think about there?”

Karina Chmielewski

Vice President, Platform Operations,
Third Rock Ventures

Ensure the vendor aligns with your future goals

The technology partner you select should not only expertly address your needs in the short-term, but should be a modern and forward-thinking solution that will keep pace with biotech innovation and thus support the long-term vision and goals of your organization. This means choosing a vendor who not only has the capabilities to do the heavy lifting where required, but can also develop a nuanced understanding of your biotech's unique needs, and ultimately provide resources and support that will enable your biotech's innovation and growth.

“When you do make these decisions, think about future-proofing. Think about starting general and getting more specific over time. And if you do choose to work with a vendor, work with a vendor that can enable that.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

Value experience & check references

There's no substitute for having done it before, and there's no better proof that a vendor can deliver than hearing from their current customers. Look for software companies who have professional service staff with advanced biology degrees and previous industry experience. Furthermore, insist on speaking with several customer references who have a similar profile to your growing biotech to understand their experience with implementing and using the software.

“Think about the vendor from the support perspective. Do they have resources you would potentially need to implement? What is the roadmap to think about there?”

Karina Chmielewski

Vice President, Platform Operations,
Third Rock Ventures

Let your technology partners do the heavy lifting

Work with technology partners whose software is as innovative as your science. The ideal solution will do all the heavy lifting on the IT side and provide the necessary resources to streamline workflows, enhance collaboration, and ultimately allow your company to focus on its core mission of pursuing scientific innovation.

Don't reinvent the wheel

While it's important to remain on the cutting edge, harnessing established resources and technologies can actually assist your biotech in remaining a leading innovator in your domain of expertise.

“Build a platform that will allow you to aggregate data from your multiple data sources and leverage machine learning and other technologies to build value. Don't reinvent the wheel.”

Karina Chmielewski

Vice President, Platform Operations,
Third Rock Ventures

Reduce your risk

Working with the right vendor derisks your tech stack. Instead of having the responsibility to maintain your tech stack in house, working with a vendor provides you with a dedicated team who are experts in software infrastructure, configuration, security, and support. This frees up valuable resources in your organization to focus on science, not software.

“If you think about being able to move fast and offload risk, SaaS tools are a great way to do it. Partners can provide those capabilities and help early-stage organizations accelerate. It takes a lot of that risk and responsibility offline. That’s part of what you pay for when working with great third parties.”

Aaron Friedman

Principal Startup Solutions Architect
Healthcare and Life Sciences, Amazon Web Services

Buy over build

It may be tempting to consider building your own custom in-house software solution, but this can be a time-consuming and costly exercise. Rather than allocating time and resources to building your own ELN or LIMS, leverage technology companies who have done it before and can get you up and running quickly on a solution that can be customized to your unique use cases and grow with you.

“Yes, you can build and deploy your own ELN, but do you really want to? It’s so much easier and it doesn’t necessarily provide any competitive value to your organization. Going with someone who’s tried-and-true is already thinking about future-proofing makes a ton of sense.”

Aaron Friedman

Principal Startup Solutions Architect,
Healthcare and Life Sciences, Amazon Web Services

The Final Word

Lasting Advice From The Experts

As your biotech company continues to grow, implementing scalable, cloud-based solutions is an instrumental factor in enhancing efficiency, collaboration, and innovation. Equip your biotech with technology that is as cutting-edge as your science so that your teams can focus squarely on their scientific work and achieve maximum potential. To close out the discussion, each panelist was asked to provide one final piece of advice for prospective biotech startup founders. Their responses are below.

Harness the power of unlimited storage

“We now have unlimited storage. To me that translates to unlimited possibilities in terms of what we do and how we analyze it.”



Karina Chmielewski

Vice President, Platform Operations
Third Rock Ventures

Remain focused on key truths

“What are those truths that aren’t going to change? We know data is valuable today. We may not know what its value is, but we know that it is valuable.”

**Aaron Friedman**

Principal Startup Solutions Architect, Healthcare and Life Sciences
Amazon Web Services

Be adaptable and get started now

“Recognize that at any point, you can potentially completely change the way that you govern, organize, and manage your data. With a snap of your fingers you can adapt very quickly. Be insanely flexible and get started now, because you’ll learn every step along the way.”

**Todd Crosslin**

Global Head of Healthcare and Life Sciences
Snowflake

Learn how Benchling can accelerate the pace of your R&D innovation.
Visit benchling.com.

Learn More

About Benchling

Benchling's R&D Cloud makes it easier to capture and access the data you need, collaborate as a team, and accelerate decision making. Benchling has helped hundreds of innovative biotech startups to establish solid data foundations for future growth. With our Benchling for Startups program, early-stage life science companies get rapid access to a unified platform for core functions including molecular design, lab notebook, biological registration, and inventory management – all at a price that works with your budget. We provide everything you need to be successful today, and as your team grows, Benchling will be able to grow with you. If you're ready to get started, request a demo, and our biotech experts will personalize one for your team.



Notebook

The most user-friendly electronic lab notebook in the industry — reduce time to data entry by 85% with the first cloud-based notebook built for modern life science.



Molecular Biology

A comprehensive molecular biology suite of 10+ tools in one collaborative environment — build, share, and record DNA and amino acid sequences in one unified platform.



Registry

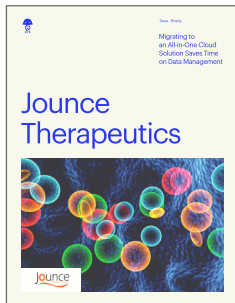
A convenient and easy-to-use registration system built from the ground up for large molecule R&D — model biological entities and easily enter and extract the data you need.



Inventory

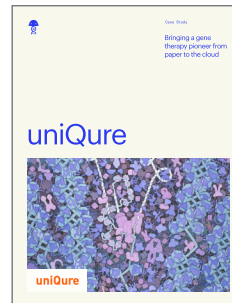
Laboratory inventory management — track the locations of vials, wells, batches, and more, and automatically link results to them.

Startup Success Stories



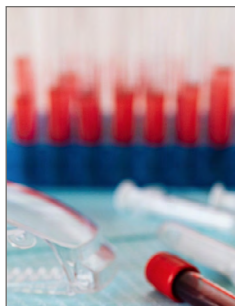
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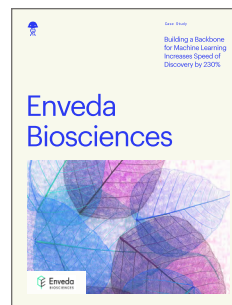
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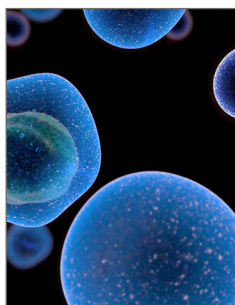
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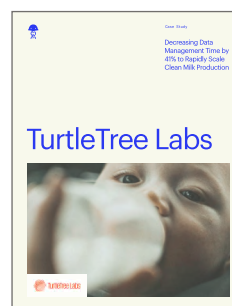
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