LAUNCHPAD

February 25th, 2019

How to Start Your Own Lab (A Comprehensive Guide)

By Dylan Gerfunkle

Starting up a new laboratory is an exciting and challenging endeavor. One of the first things to determine when starting up a new lab is where you're going to get the lab equipment that you need to run it. Often, due to limited funds, one of the first thoughts you may have is to consider purchasing used lab equipment.

So, you want to start your own lab? Maybe you just walked out of college armed with your Ph.D. and ambitious visions, or maybe you're suffering from industry burnout, and you want to create your own atmosphere and research projects. There are a thousand reasons to start a laboratory, and each person is going to have their own vision and unique objectives that push them into this entrepreneurial project. But, like any other business, starting a lab requires some initial thought, a strategic business plan, and some best-of-breed practices to remain lean budgeted and operationally efficient.

Let's get something out of the way. Each lab is going to vary in needs, goals, and workflows. Some of your initial planning will depend on the funding you captured, your location, and your personal goals. But each new lab will undergo some similar steps in the beginning.

This guide is to help visionaries, dreamers, entrepreneurs, and scientists create a laboratory from the ground-up. These are the steps you will need to take to get started.

1. Research

Before you start grabbing accreditations, purchasing the appropriate supplies, and prepping for onboarding, you need to validate your business model. Why are you building a lab? What niche is your lab serving? How are you planning on running your lab? All of these questions require you to do some outside research.

This research comes in two categories — broad and granular.

1.1 Broad Research

What's the current state of affair with laboratories in your country? You want to know how financially successful the average lab is, how many labs are currently running-and-operating, and how the overall outlook for laboratories is shaping up.

1.1.1 Market Overview

You'll want to start by looking at the overall market for laboratories in your country. This includes market penetration, market trends, demands, income, locations, etc. The resources you use to do this will vary by country, but we recommend always using

verified and trusted sources to verify the health of the market — not just questionnaires or white papers with small search samples.

For example, the Diagnostic and Medical Laboratories industry in the United States has seen a growth rate of 1.1% year-over-year, with rising revenues, employment, and size according to IBIS. Of course, your laboratory may be a forensic lab or another lab operating outside of the medical field of study. In this case, you would want to search out the specifics of your industry.

1.2 Granular Research

Now, you want to research your specific lab's niche. Who are your direct competitors? Who can you build networking relationships with? What's the shape of your competition? Which specimens are you going to test, and who offers the best menu of specimens?

1.2.1 Competitor Research

When you first start researching your lab on a granular level, you're going to run into a bunch of competitors. Don't worry! Every lab is going to have competitors who are attempting to accomplish the same goals as they are; it's natural.

Here's what you want to ask yourself. What are they currently doing well? And, what could they improve upon? You could accomplish this in a quick Google search. But, if you need additional information, and you have the capital, you can invest in a market research team to perform in-depth competitor analysis. You can find these teams on directories like GreenBooks.

1.2.2 Networking

What suppliers can you connect with to foster meaningful and profitable relationships? Who offers the best specimen samples? What other labs can you connect with to improve collaborations and communications?

Some laboratories need to set up extensive networking capabilities to produce training and mentorship programs, surveillance, and data management. These processes are complex and will require specific steps dependent upon your laboratories niche and community.

1.2.3 Testing Menu

For medical research labs, choosing the correct testing menu is a crucial part of lab setup. Your testing menu will determine not only what types of equipment and processes you need, but it will also assist you in creating your lab's value proposition. Otherwise, what is it that you do?

There are a few key points to remember when choosing your testing menu.

1. Avoid trying to incorporate too many tests into your plan. While it may seem smart to test as many things as possible, testing largely relies on volume per test to remain profitable. Remember, equipment costs add up.
2. Attempt to choose a testing menu that you are comfortable with. This will go a long way in both keeping your lab initially productive as well as keeping you enthusiastic about your new project.
3. Research your testing menu. LabCorp provides a thorough review of testing types and methodologies.

1.2.4 Location

You will also need to plan out your location requirements. While this is included in competitor research, you also need to plan out where your location is and what kind of internal equipment you need to successfully power your lab. This includes thinking about square footage, cooling and heating, plumbing, and surface materials.

1.3 Business Plan

All of that research — both broad and granular — should help you develop a business plan. A business plan is a roadmap that helps you understand where your laboratory is at and where it's going. It's important to note that this business plan will also help you capture funding and may be an essential part of your pitch.

According to the U.S. Small Business Association (SBA.gov), a business plan should include the following:

- **Executive Summary**: This is a brief overview of what your lab is, what it will do, and why it will succeed.
- **Company Description**: This is where you start to list out why your laboratory is going to be successful based on your business model and all of that rich research you've outlined. Is your location prime? Do you service a particular need? Is the industry outlook fantastic? Remember, only note the positives in this section.
- **Market Analysis**: This is where you plug in all of that competitive research from the granular research section.
- **Organization and Management**: Who is going to run your lab? How many employees will you have? What is your management type and what unique lab processes are you using?
- **Marketing and Sales**: How will you effectively capture revenue (funding or non-funding) and how will you continue to produce results?
- **Funding Requests**: How much do you need? Why do you need it? Explain everything the funding will cover and why its a necessity.
- **Financial Projections**: For labs, this can be either finances or results, depending upon the niche. How do you plan on producing something of substance?
- **Appendix**: This is where you will provide all of those resources you dug up during the research phases.

2. Accreditation

Every business, labs included, need accreditation to become a legal business. For labs, these accreditations will come in two forms — business and laboratory-specific.

2.1 Business Accreditation

Labs, like all businesses, need to file as a business. But, before you run off and start filling out forms, you need to figure out one critical detail about your new lab — what's your name?

The naming process isn't the easiest step. Maybe you already had a name-in-mind when you decided to start up your lab. But, now you have to make sure the name is available. It's recommended to envision or design a logo at this point. There's also the issue of your website. Now is the time to register your domain name for future digital marketing and efficiency.

Remember, you will have to register your business at the state level. So, you will need to find the registration process pertaining to the state that your new laboratory will be located in.

2.2 Lab Accreditation

Now, you'll need to get laboratory-specific accreditations. This part is hyper-dependent on your specific laboratory, your niche, and how deep down the accreditation hole you wish to go. The primary certifications for labs are the CLIA, COLA, CAP, and The Joint Commission. The primary accreditation is CLIA, which is administered and regulated on a state level. But, according to federal law COLA, CAP, and The Joint Commission are also recognized accreditations because they are "at least as strict as CLIA."

The accreditation you choose will depend on your circumstances. We recommend reaching out to a laboratory consultant to help you choose the best option for your circumstances.

Note: ISO certifications are often baked into these accreditations.

Important: There are plenty of unsavory online accreditations that are offered to laboratories. Don't purchase certifications outside of the ISO/IEC range until you are thoroughly familiar with the accreditation side of laboratory management.

**Additional accreditations may be required on the state level for specific types of labs.*

3. Supplies and Resources

Once you have a plan and accreditations, you will need supplies and resources. The obvious first step involves procuring land and building (or buying) a physical laboratory. But there are an incredible number of nuances associated with that particular process, so we're going to skip that step. But, the actual physical plans for your laboratory should be discussed between yourself and your funding resources in detail.

When you first start your lab, finding the correct supplies can be a complicated process. You will need to reach out to multiple suppliers, research specific equipment sets, and find the appropriate software to power your digital needs.

Typically, labs will need the following:

- Equipment
- Materials
- Specimens
- Software (e.g., LIS, MIMS, etc.)
- Safety Tools
- Chemicals
- Testing Materials
- Upfit
- etc.

During the process of equipment procurement, you will want to think about how your lab's digital components are going to be organized (e.g., mobile devices, computers, machines, etc.) as well as how they are going to be connected (e.g., networking, software, LIS, etc.)

You will also need to discuss the appropriate safety precautions with your team and look up the safety guidelines by your state. Business Intelligence solutions can assist you with some of these processes. Remember, each state also has both electronic record, waste disposal, and safety guidelines that must be adhered to strictly.

Your ISO and CLIA (or other) certifications will also require you to follow specific guidelines in equipment management and safety.

4. Preparing Your Back-End Processes

Finally, you will need to develop a robust set of processes to ensure continued lab success. Remember, running a lab requires day-to-day systems that ensure proper billing, payments, payroll, and more.

4.1 Finances

We're sure that most lab entrepreneurs didn't found a lab to dabble in finances. But, you're a business owner now. Finances are a crucial part of your operational success. Your initial financial planning can be broken down into two categories — budget and payroll

4.1.1 Budget

Creating a comprehensive budget isn't only necessary to keep operations smooth, but it will be a massive part of your funding success. Granting agencies need to know that you're both realistic (the number isn't too low) and lean (the number isn't too high.)

Finding balance in your budget can be tough. You will have to:

- Calculate instrument investments
- Include payroll (e.g., salary, benefits, etc.)
- Calculate supplies per bench per scientist
- and include all other costs associated with starting (and running) your lab.

4.1.2 Payroll

Although payroll is certainly included in your budget, payroll itself is another area of planning. Not only is payroll necessary to ensure that you're staying lean and efficient, but your payroll budget will determine which staff you can hire.

Remember, you will need additional support outside of testing personnel. This includes roles such as:

- Laboratory Director
- Clinical Consultant
- Technical Supervisor
- General Supervisor
- Laboratory Financial Manager
- Laboratory Consultant, etc.

*Note: CLIA **requires** that some laboratories (depending on the "complexity") have a Laboratory Director, Clinical Consultant, Technical Supervisor, General Supervisor, and testing scientists — though one person may fill multiple roles.*

As to how you process payroll, it will depend on your needs. Many labs outsource payroll needs, while others purchase software-as-a-service or onsite solutions to help them streamline their payroll needs.

4.2 Marketing

Another crucial part of your lab's success will come down to marketing. This includes both marketing to grant institutions and to those who procure laboratory tests. While your staff, equipment, and expertise may breed an environment of success, your marketing breeds an environment of profitability. While labs often skip hiring sales staff (which is a workable strategy), marketing cannot be avoided.

There are tons of marketing avenues that you will need to invest in, including:

- SEO
- Website Design
- Customer Service
- Emails
- Word-of-mouth
- etc.

When you first start out, marketing will be a major growth pillar. The basics include registering yourself in the correct lab databanks and creating a website. But, as you grow, you will want to connect with users on social media, send out emails, and incorporate dynamic marketing strategies. Labs require a constant stream of tests to remain profitable, so the more clients that you can capture, the more successful your lab will ultimately remain. Grants make up just one chunk of the total lab funding. You need clients.

4.3 Additional Processes

This is by no means an exhaustive list. There are thousands of other backend processes that your lab may have to account for to remain successful. This includes figuring out how to manage reports, ways to hack workflows to decrease redundancies,

incorporating the right SaaS solutions, and even your taxes, research and development, and legal services.

Running a lab requires a best-of-breed approach to process adoption. Use all of the available tools and processes to help your lab grow, scale, and succeed throughout your business lifecycle.

The specific back-end processes that you need will highly depend on your situation and lab needs. Make sure that you engage your lab consultant to discover which services will work best for you.

Final Thoughts

Building a lab can be a difficult process, but the payoffs can be incredible. Owning your own lab can put you in the driver's seat of your specific vision and provide you with the day-to-day life that you want. This guide is far from exhaustive, as that's impossible given the variability of lab types and the unique processes required state-to-state. But this list should help you get started. Enjoy your journey to lab ownership! You deserve it!