

KEY STARTUP QUESTIONS AND PLANS

Startups are exciting but challenging endeavors. Unanticipated developments and changes are inevitable. The saying “Measure twice, cut once” is very applicable, especially given the limited resources and time pressures often associated with startup activity. While few if any original plans stand the test of time, they are essential nonetheless and must be rooted in thorough customer discovery efforts. Most startups fail because they do not have a product or service that customers want to buy, not because their technology failed.

Below are questions we ask when first engaging with startups and descriptions of the types of plans needed to successfully move ventures forward.

CAN YOU ANSWER THE FOLLOWING?

1. Describe and quantify the opportunity, solution, target customer, value proposition, and compelling use case in five concise sentences.
2. How do you define “success” over the next three years?

STARTUP PLANS

Technology Development Plan

How will this technology be turned into a commercial marketable product from its current state?

- What is the current state of the product? A concept, prototype, pre-production, etc.?
- Do you have proof of concept and supporting data?
- What are the major milestones, success metrics, value creation inflection points, and timeline?
- If your product is FDA regulated, do you have clinical and approval plans? Have you engaged the FDA?
- Do you have supporting customer feedback that validates your development plan, goals, and metrics?
- What are the major development risks, and what is your plan to mitigate them?

Business Case

What is the rationale for starting the business and attracting advisors and team members?

- What is the product/service?
- What is the need for the product/service, and how has it been verified and quantified?
- How big is the market?
- Who is the competition, and are there alternatives?
- What are the major risks – technical, regulatory, IP, market adoption, reimbursement, other – and what is your plan to mitigate them?

Business Plan

How do you plan to capture value, create a sustainable business, and secure funding?

- What is your target market, and who is the target customer?
- What is your target market size, and how was it estimated? (Target market is your venture's revenue potential.)
- Who are the competitors, and how is your product superior as defined by your target customer?
- What is the status of your intellectual property, and what is your strategy for strengthening it?
- What is your technology licensing status and anticipated timeline?
- For faculty, have you reported the invention, and do you have an approved conflict of interest plan?
- What are your intended business model and commercialization plan?
- What funding have you received to date?
- Do you have a five year financial model and funding plan tied to major milestones?
- What are your current funding resources, and what major milestones do they support?
- Who are the current team members, what are their roles, and what is your human capital plan?
- What are the major risks to your business plan, and what is your plan to mitigate them?

ADDITIONAL DOCUMENTS

Do you have a current pitch deck or other document(s) that describes your Technology Development Plan, Business Case, and Business Plan?

RESOURCE DOCUMENTS AND LINKS

[Johns Hopkins Technology Ventures](#)

[JHTV Digital Library](#)

[JHU I-Corps Program](#)

[FastForward Translational Funding Application Guide](#)

[JHU Conflict of Interest Policy](#)

[JHU Use of Name Policy](#)

[Research to Revenue: A Practical Guide to University Startups](#)

[Steve Blank Lean Startup Materials](#)

[Khosla Ventures Business Plan Guides for Seed Stage and Main Venture Fund Applicants](#)

[Original Sun Microsystems Business Plan](#)

MENTOR-IN-RESIDENCE RECOMMENDATIONS

Be a Risk- Mitigator¹: Words of Advice from a Successful, Veteran Entrepreneur

Author: Arthur “Skip” Colvin

Arthur (Skip) Colvin is a serial entrepreneur with a 35-plus-year record of technical innovation and successful leadership of entrepreneurial product creation and development programs. Skip has been directly responsible for more than 40 successful products in life science and medical technology from concept to commercialization, and has served in corporate positions ranging from chief scientist to CEO.

We asked Skip to share some words of advice based on his experience as a Mentor-In-Residence at FastForward.

Why planning is essential

Many founders want to start a company and jump right in. Unfortunately, as new entrepreneurs, they often do not understand the importance of business and strategic planning in positioning the startup for success. “Ready, fire, aim” does not work nearly as well as “Ready, aim, aim, aim, fire.” When meeting with new founders, I explain that, through timing and their business plan, they must position their startup to be successful from the start.

You want to identify and mitigate as much risk as possible before hitting the “start” button, and you must be in a position where your business plan defines and describes exactly what is to be done and by whom and how to get from where you are to where you win. There must be a very clear purpose for the startup that founders must be able to articulate in detail. Otherwise, how do they tell their first employees what they are doing and how? How do they determine what kind of employees they need?

In the case of one startup I am helping, this is going very well. They had three major risk elements that needed to be mitigated before meeting with me. We identified them and set about mitigating them to make the startup ready. One of the risks was, could they could design the product in a way that could be manufactured? The answer was definitely not at the start because they had designed something that could be 3D printed but could not be made any other way. This would never fly as a medical device, and we needed to face that right away. You can’t sell it – or get FDA approval – if you can’t make it. So, for months we had to keep starting over until we finally figured it out. It was really hard, and that alone would have probably killed a fragile startup.

The next startup killer was to find someone who could make this very difficult design. We searched the country at least twice before we found someone who did not start their reply with “hell no” or “are you kidding me?” Eventually, we found someone with the right mix of crazy and rare talent. Now, we are 100% sure we can make the product to FDA standards, make them cost effective and can scale them as needed at any level.

Next up is our proof-of-concept trial. If the trial goes as expected, we will have scrubbed away the risk and can create the startup as fast as possible. If the proof-of-concept trial does not go as expected, the team must continue in research mode until they can solve the risk-element problems.

This approach, which has been tailored over the last six years for our Johns Hopkins community of innovators, makes for a very strong startup from the beginning because we have anticipated and handled the high-risk elements that could kill a young startup. We then can clearly define the purpose of the startup very crisply: To execute and achieve FDA approval for the finished product and thereby boost valuation substantially and then engage established companies or venture investors who would greatly benefit from this product opportunity. We can then accurately know how much time we expect this mission to take, what kind of people and how many we need, how much and what type of money we need to fund and how to map out good quarterly progress checks so we can make sure we are meeting mission milestones on time and budget until we hit the exit goalpost.

I explain to my mentees that just jumping in without thinking through the path, anticipating and mitigating risks where possible and doing all you can to position your startup for success out of the gate can bring horrible pain, misery and uncertainty. People tend to think entrepreneurs are big risk-takers, and that some can walk on water, but I promise you that behind the scenes they are very good and diligent at risk mitigation. The appearance of walking on water, in other words, is because they took the time to figure out where all the stones are ahead of time. Good entrepreneurs are not risk-takers but really good risk-mitigators. When you pull the trigger on that startup, you want to feel certain of hitting your target because, even with this level of perceived certainty, something will always go wrong and that all by itself can be enough to deal with.

Advantages and disadvantages of university-based startups

University-based startups are often founded by faculty members who are committed to seeing their research translated into a commercial product but are not seeking to leave academia. The inability to focus full-time on commercialization and startup efforts can result in a prolonged startup gestation period.

While a prolonged startup period creates risks in giving competitors an advantage in time to market and lost momentum, university-based startups do have an advantage in having time to identify and mitigate risks while inside the university system without bearing the time and funding pressures placed on outside startups. In the outside world, you don't have much, if any, of this capability. This is a super valuable advantage, and it's very important to understand and know how to use it.

This also fits and adds value from the other factor: Inventors and would-be entrepreneurs at universities typically don't quit their jobs. So, instead of not doing much to be of help, faculty can be of enormous help and value and skew the odds way toward success by doing this de-risking before the startup ever happens.

I teach my mentees to use all these huge advantages they have that outside-world competitors cannot have and use them to put themselves into a position of extreme advantage for the startup from the first day it is created. I have been working for six years trying to understand how to fit Johns Hopkins opportunities into properly adapted startup successes and think I finally may have the model.

The core startup trajectory

Having taken over 40 products to market and founded multiple companies, Skip is often asked for advice on how to start a company. His guidance is below and has come to be called the “core startup trajectory.”

Start with a clear and good idea.

Develop an intellectual property strategy to obtain reasonably, broad, strong and enforceable coverage at a reasonable cost.

Perform thorough market analysis, which gets you...

Effective planning, which gets you...

Financed, which gets you...

Team members, who can...

Execute the plan, which yields a....

Product, which leads to...

Sales, which leads to...

Success!