

The Challenges Faced by Hardware Startups

 medium.com/globaluxsoft/the-challenges-faced-by-hardware-startups-f4f7b9b81458

June 26, 2018

Software startups are not a novelty anymore; they have become ingrained in our lives. Burgeoning entrepreneurs have access to tons of useful information and strong support, which are available from numerous sources. If we speak about hardware startups, the situation is a bit different. This direction of technological development is becoming more and more promising one, opening wide horizons for ardent innovators. However, it is not a primrose path for the latter; the guys who decide to devote their time to a hardware product need to make their way through many challenges.

This type of business differs from other startups, and it requires the consideration of its peculiarities. If you've never brought the hardware product to the market but you are willing to do this, you will find some useful information below. Who knows, maybe it will save you from making a crucial mistake.

1) The Costs Challenge

The first fundamental challenge that lays wait for a startupper is the financial aspect; in most cases, hardware startups require more funding than software ones.

Cold reality requires you to have enough funds to nurture your startup; otherwise, you should postpone your plans. The costs for yet habitual, but still expensive, software development are gradually lowering. Hardware development still costs a pretty penny.

For instance, there is a possibility of underestimating the development costs. The process can always take a sudden turn, leading to devastating consequences. At the initial stages of your startup's development, your profit margins will be zero or close to zero. This is a normal occurrence since you can't apply an economy on the scale yet. As soon as your production and sales go up, you should take measures on lowering your production costs without hurting product's quality to increase your profit margins. But if this plateau period extends, you will feel hog-tied without the possibility to substantially invest back into your business.

In order to avoid this, you need to acknowledge your Cost Of Goods Sold index (COGS) at different stages of production and to make predictions regarding your profit margins. COGS denotes the accumulated total required to create and sell the product.

Then, it is more expensive to build MVP for a hardware project. If, in some cases, an MVP for a software solution can be built with less than \$1000, an MVP for a hardware one would cost minimum \$5000.

Thus, you always need to have a decent sum in your back pocket that can serve you in case of unpredicted expenditures (and most probably there would be some). Yet, look at the brighter sight of things: a restrained budget can motivate people to make smarter choices.

2) A Prototype Challenge

Creating a prototype for a high tech product takes a good deal of time. Even the simplest solution would require at least 6 months of painstaking work.

In the course of scaling a prototype to mass manufacturing, the product can change drastically; in result, the original prototype and the product that is aimed at mass production may have little in common.

We recommend introducing Design-For-Manufacturing (DFM) practices as soon as possible to save money and make the process more predictable.

Do not limit yourself to one prototype; create them as much as you can – it will give you a possibility to test various functions separately and to boost the clients' interest manifold. And do not hesitate to show off your brainchild to receive proper feedback.

3) Distributed Development Challenge

Being a virtual asset, a software product can be endlessly improved; by contrast, a hardware solution is a physical asset and it should be created almost perfect from the beginning. It means it has less room for mistake. And, unfortunately, fewer maneuvers with the development process.

The process of distributed development is not easy to manage. Any person involved can receive software literally within seconds since the transportation of hardware between the locations takes a substantial amount of time.

Whatever strategies of the project and team management you choose, always pay attention to visual work management tools, which imply visibility of resource queues, efficient management of resources' application, instant feedback, clear project priorities and decentralized project management and planning.

4) Investment Challenge

The majority of investors — ranging from angels to institutional investors — are hesitant when it comes to investing in hardware. They are reluctant to pump into something before it's a proven market. Venture capitalists prefer spending their dollars on something that transparently boosts the value of the business, e.g., recruiting talented staff.

In many instances, it is connected with investors' experiences. Many of them have some roots in software background and engineering, which means they can't evaluate the offered high tech inventory with an objective mind.

The solution here is to demonstrate market validation and demand for the product. Such crowdfunding platforms as [Indiegogo](#) and [Kickstarter](#) are heaven-sent opportunities, allowing startup owners to kill two birds with one stone: first, finding customer appetite and thus validating the product, and, second, raising funds.

5) Human Resources Challenge

As compared to the world of software, the talent pool in hardware sphere is much more shallow; in order to find the qualified specialist who will suit your needs, you will probably have to work for it.

On top of that, hardware startup requires the involvement of more people. If it is possible to launch the simplest web product by efforts of 3 people, hardware teams should consist of minimum 8 persons (4 of them are responsible for hardware development, 2 — for software and 2 persons communicate with clients and do marketing).

It's not a reason to despair. You as a startup owner should place a premium on your team. Gathering talented people under the same roof is the key to startup's success and its highest priority. It concerns not only executives but co-founders as well. Who knows whether Apple would have taken the world by storm if it had not been ruled by a perfect combination of two charismatic personalities, who in fact were very different and thus complemented each other.

To sum up, you need to be aware of all these hurdles and remember to apply the custom approach to your project. Even taking all this info into account can't guarantee the success of your project. However, it lifts your chances of success.

Despite all the challenges that may lurk in the way, building hardware startups is not only hard. It is a unique and inspirational experience that is able to open bald technological ideas to the world. Now that you've read this article and you are somehow forewarned, we hope you'll continue working on your hardware product, keep on exploring the opportunities and find the right people to rocket your project. Initiatives blossom in capable hands, so go for it!