

# The Challenges of Starting a Hardware Business

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At the beginning of July in Birmingham, United Kingdom, took place the TaaS (Transportation as a Service) Technology Conference aiming at highlighting and rewarding the most innovative and successful startups in the smart mobility field.

FundingBox was well represented with 8 accelerated startups (by the Impact Connected Car programme) taking part in the nominee list. Among them, can you guess how many were **doing hardware, that is to say manufactured tangible devices?**

## 1. Hardware is expensive

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After dismantling it piece by piece, some German automotive engineers found out that a Tesla Model 3 would have production costs nearing \$28,000. Taking into account a selling price of \$35,000, there is not much margin left after also discounting marketing and other costs.

On the other hand, would you be able to guess how much it costs to build an MVP\* mobile application?

Well, around \$10,000 says this article from Thinkmobiles . Not to mention that once it is built, commercialisation can easily be scaled (unlike a car, you don't need to rebuild an app if you want to sell it to your n+1 customer).

Manufacturing a product also involves in general higher fixed costs. Indeed, what is potentially more expensive: renting a 30 people office at WeWork or setting up and maintaining a 3,000-square metre factory?

Granted, these examples might seem extreme but in the long run, a continuous comparison would lead to the same assessment: hardware is intrinsically more expensive.

This means you need a *lot* of cash at the beginning. And according to CBS Insights, running out of cash is the number 2 reason why startups fail (29%).

## 2. Everything is much slower

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Ordering pieces, building and rebuilding a prototype, shipping your product, etc. "*Patience is a virtue*" and it's even more the case when you dedicate yourself to hardware which involves inherent manufacturing delays.

As a consequence, Agility processes are much harder to implement. In comparison, think of a software programme for which you can release a new version every week and ask for immediate feedback to your customers.

On the contrary, when it comes to hardware, the moment you ship your car, you cannot change it anymore. And neither can you afford to send an “updated” one on a weekly basis to your clients.

This means that in addition to patience, perfectionism comes in handy too. It's only if you make yours the two aforementioned qualities that you'll slowly but surely start making profit.

### 3. Experience matters more

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Have you heard of aircraft manufacturers other than Boeing and Airbus? Well, there are a few: Tupolev, founded in 1922, Bombardier, founded in 1942 and Embraer, founded in 1969. Boeing and Airbus were respectively founded in 1916 and 1970.

And that's it.

In brief, hardware manufacturing requires know-how, know-how requires experience and experience only accumulates itself with time and this is one of the reasons that explains why the aircraft industry still remains an extremely closed market.

Do note however that this list is not exhaustive. You'll have to keep on reading 5 kilometres of other options before you actually start running a real 5K with one of those apps.

Starting a hardware company is a challenging move to the extent that gathering all the tech manufacturing knowledge around you takes time and is sometimes just impossible due to talent scarcity.

Indeed, in 2018, Industry Week was quoting that the US will need to add 4.6 million manufacturing jobs in the next 10 years, 2.4 million of which may eventually be unfilled. And the same assessment can be made for Europe.