TechCrunch+ Work

How we pivoted our deep tech startup to become a SaaS company

Brian Casey 11:30 PM GMT+5:30 • January 11, 2023

Comment

Image Credits: Thomas Winz / Getty Images

Brian Casey
Contributor

Brian Casey is CEO of ECM PCB Stator Technology.

For the foreseeable future, global markets will require billions of highly specialized electric machines that perform much better than the inefficient relics of the past.

Initially, we approached this as a hardware challenge until we determined that the key to meeting next-generation electric motor demand actually lies in software. That's why we've pivoted to a SaaS model.

Like any major startup redirect, there were several "a-ha!" realizations, accompanied by trials to make it all work. Fortunately, the SaaS direction has delivered upsides: We've achieved relatively strong product-market fit and cash flow-positive status without big VC raises or burn rates.

The process wasn't precisely linear, but (looking back) we did four core things to conclude SaaS was our model:

- Assessed what was truly disruptive, scalable and profitable about our technology.
- Engaged our board and investors candidly.
- Studied global markets and tech trends.
- Took our MVP to market quickly, opting to polish in public rather than perfect in private.

ECM PCB Stator Technology was founded on the innovation of MIT-trained electrical and software engineer Dr. Steven Shaw, our chief scientist. After launch, we began developing proprietary printed circuit board stators that replace bulky copper windings — the central component in electric motors — and using in-house software to make them lighter, faster and more efficient machines.

Pivoting from hardware to SaaS was the right move for our electric motor design startup, but the process wasn't precisely linear.

Two years later, I joined as a growth-stage CEO after leading two energy technology companies to scale and acquisition. At that point, we were still at a relatively early stage in funding and product-market fit. The startup had raised a venture round and was flirting with becoming an axial flux electric motor manufacturing company. The initial impetus for a SaaS shift came when I began to assess the company with fresh eyes and engage Steve and the board on our inherent advantages and path to profitability.

At that point, we also pulled in some new investors.

On a macro level, we conferred to determine our competitive advantages and addressable market. An early observation was that there were already several large, established players making off-the-shelf electric motors. An assessment of global trends (e.g., mass electrification, automation, reducing carbon emissions) also revealed that the need and requirements for next-generation electric machines were rapidly shifting.

After plenty of analysis and a number of board meetings, this appraisal emerged: The global marketplace will require more efficient, better performing and custom-designed electric motors that can be produced in the hundreds of millions in a more sustainable way.

With that in mind, I turned to Steve and our board to evaluate the best business model. We concluded that the most competitive aspect was the ability to leverage printed circuit boards via “motor CAD” software to create bespoke electric motor designs that require less raw material and outperform legacy offerings.

Then we addressed a critical question: How can we take this technology to market rapidly with a favorable capex profile?

From a company standpoint, we’d assessed that the most disruptive facet of our technology was using software to create custom PCB Stator electric motor designs that could plug into multiple applications.

We’d completed an assessment of technology trends that indicated there was a multibillion dollar market emerging around the need for more efficient, next-generation electric motors customized to exact performance and dimensions.

Becoming a full OEM motor manufacturer would have been incredibly expensive, required multiple VC raises, alienated a large and viable market vertical of motor OEMs and actually delayed bringing our technology to market — while also delaying scalability and profitability.

An extra nudge in the SaaS direction came through an unsolicited partnership request. A large military defense company reached out to see if we could devise an electric motor designed to precise specifications and form-factor requirements. Our engineers were able to create exactly what they needed.

It was at this point that all these individual “a-ha” moments in our startup discovery added up to a “eureka!” moment for me and the board. We realized manufacturing hardware wasn’t truly disruptive: The best path forward was a SaaS model that could scale the most innovative aspects of our electric motor design and PCB Stator technology to multiple players, inclusive of motor OEMs.

Next, we had to determine how best to deliver that to market, which entailed making our in-house process scalable and repeatable through a platform we could extend to legions of innovators. To do that, Steve continued to develop, advance and refine code to create a product version of our electric motor design software.

In developing our MVP and getting to market, we opted to polish in public instead of perfecting in private. We completed certain key steps to hedge risk, but to define the addressable market, I believed we needed to start solving customer problems immediately.

So we assembled a solution-based sales team, one that started turning over client opportunities across a wide range of partners and sectors, to determine what kinds of problems we could solve with this technology. Paired with that, ECM shifted to operate just short of the full SaaS launch before testing PrintStator in beta in 2022.

For the last few years, our business development team has taken customer specs for a wide variety of electric motor applications so our in-house engineers and beta partners could use our software to model, prototype and produce design solutions. We’ve also partnered with production houses for clients who don’t have their own manufacturing capability.

Making this pivot to SaaS has not been without friction: A big challenge was transitioning culturally and organizationally to identify and operate less like a motor company and more like a software company.

As part of that evolution, we updated our platform and system security and obtained the right patents to license our software externally. We also needed to finalize the programming to offer our design and prototyping services on a larger scale. Most importantly, though, I had to fully convince employees and investors that the SaaS move could be a winner.

That entailed holding board and employee meetings — and numerous one-on-one conversations — to lay out the value proposition for software. We also brought in several new investors who were sold on the SaaS strategy from the start.

To fully shift the company culture to SaaS, we had to prove there was a large enough customer base for our electric motor software design platform to take off, which was something our solutions-based sales exercise would affirm.

Fortunately, we've found substantial demand for electric motor design solutions and have grown customer acquisition significantly enough to plan a full SaaS launch in early 2023.

Pivoting from hardware to SaaS was the right move for our startup. Still, I'd remind founders that the process we followed holds inherent value, whatever business path you choose. Remaining agile, adaptable and open to new possibilities is key to any successful startup journey. The market forces, customer needs and opportunities that existed for your venture at first raise and launch will almost certainly change down the road.

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Hardware

Now that it's thoroughly spoiled, here's Apple's M2 MacBook Pro 'event' video

Brian Heater
9:02 PM GMT+5:30 • January 17, 2023

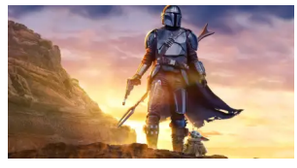
One of two things likely happened here. Either Apple made a proper video before deciding this wasn't quite enough to justify a proper "event," or this is just how the company is going to treat smal...

Media & Entertainment

Disney+ releases full trailer for 'The Mandalorian' Season 3

Lauren Forristal
8:57 PM GMT+5:30 • January 17, 2023

Disney+ premiered the latest trailer for Season 3 of "The Mandalorian" last night, giving fans a glimpse at what the bounty hunter and his tiny companion will get into this time. The season will ma...



Security

Royal Mail CEO confirms cyberattack downed UK postal service

Carly Page
8:54 PM GMT+5:30 • January 17, 2023

Royal Mail CEO Simon Thompson has confirmed that a cyberattack is to blame for the ongoing disruption at the U.K. postal giant. The admission comes almost a week after Royal Mail first said it was ...

Enterprise

Amberflo wants to transform SaaS pricing with metered usage

Ron Miller
8:42 PM GMT+5:30 • January 17, 2023

Over the years software pricing has shifted from rigid seat licenses for on-prem legacy software to subscriptions with tiered pricing, as software shifted to the cloud in the early part of this cen...

Commerce

DoorDash expands Starbucks partnership with plans to reach all U.S. states by March

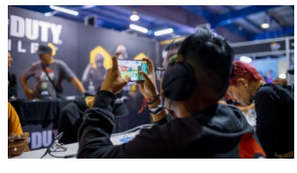
Sarah Perez
8:41 PM GMT+5:30 • January 17, 2023

Starbucks will become available for delivery via DoorDash across all 50 U.S. states by March, in an expansion of a partnership with the delivery service announced last year. In September, Starbucks...

Gaming

African gaming startup Carry1st raises $27M from Bitkraft Ventures and a16z

In the coming decades, Africa will be a significant growth market for mobile games driven by the proliferation of technology adoption among the continent's youthful population. And as gamers in sub...



Tage Kene-Okafor
8:30 PM GMT+5:30 • January 17, 2023

Transportation

Uber drivers in Europe gain access to Tesla, Polestar and other EVs through Hertz

Kirsten Korosec
8:27 PM GMT+5:30 • January 17, 2023

Uber has expanded an agreement with Hertz to get thousands of ride-hailing drivers behind the wheel of an electric car — this time in Europe. The two companies announced that Hertz will make up to ...

Transportation

Chevy announces the fastest Corvette yet, the electrified 2024 Corvette E-Ray

Matt Burns
8:20 PM GMT+5:30 • January 17, 2023

The great American sports car is going partly electric. Chevy pulled the wraps off the 2024 Corvette E-Ray, revealing a dual powertrain affair. A 6.2L Small Block V8 sits behind the driver in a mid...

Apps

Google's Clock app now lets you record your own alarm sound

Ivan Mehta
8:15 PM GMT+5:30 • January 17, 2023

Google's clock app for Android has plenty of sound options to set as an alarm. If you don't like the default tone, you can use a song or a podcast from Spotify or YouTube Music (only if...

Media & Entertainment

HBO Max subscribers can now livestream U.S. national soccer games

Lauren Forristal
8:11 PM GMT+5:30 • January 17, 2023

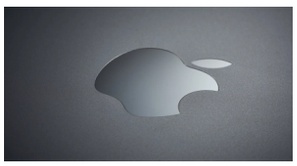
HBO Max makes history tonight with its first-ever domestic live sporting event. Starting at 10 p.m. ET, U.S. subscribers can watch the U.S. Women's Soccer National Team take on the New Zealand team...

Hardware

Apple unveils M2 Pro and M2 Max chips, featuring new Neural Engine and more

Kyle Wiggers
8:07 PM GMT+5:30 • January 17, 2023

Apple this morning announced new Macbooks powered by the latest generation of its in-house, custom-designed PC chipsets. The chipsets — the M2 Pro and M2 Max — feature a more powerful C...



Hardware

Apple brings M2 Pro and Max chips to the 14- and 16-inch MacBook Pros

Brian Heater
7:56 PM GMT+5:30 • January 17, 2023

There's no big Apple event today (well, not in any traditional sense, at least), but the company's got quite a bit of news to share this morning. In addition to the new Mac Mini, a pair of new MacB...

Hardware

Apple's M2 Mac Mini arrives January 24, starting at $599

Brian Heater
7:43 PM GMT+5:30 • January 17, 2023

Apple just dropped a refresh to the Mac Mini. The new version of the compact desktop arrives with a choice of last year's M2 chip, or the freshly arrived M2 Pro. The system received a major refresh...

Startups

Komunal raises $8.5M to digitize Indonesia's rural banks

Catherine Shu
7:34 PM GMT+5:30 • January 17, 2023

Komunal is reaching out to Indonesia's rural customers by going where they are. The fintech partners with more than 220 banks in tier 2 and tier 3 cities spread through 19 provinces. Founded in 201...

Venture

Amplifica Capital 'wants to be the fund that LatAm's female tech founders reach out to first'

Christine Hall
7:32 PM GMT+5:30 • January 17, 2023

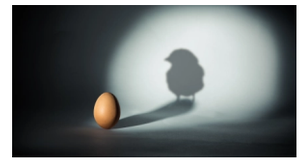
Amplifica invests mainly in teams where there are female founders or co-founders or goods and services focused on women.

TC+ Growth

Cost-effective IP strategies can lead to massive exit valuations

Kyle Graves
7:30 PM GMT+5:30 • January 17, 2023

Overreliance on conventional wisdom allows valuation destroying timebombs to hide within successful businesses, only to detonate during a liquidity event.



Apps

AI21 Labs intros an AI writing assistant that cites its sources

Kyle Wiggers
7:30 PM GMT+5:30 • January 17, 2023

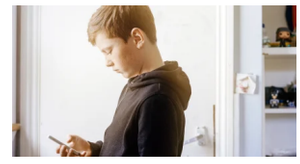
ChatGPT, the AI that can write poems, emails, spreadsheet formulas and more, has attracted a lot of negative publicity lately. Q&A coding site Stack Overflow temporarily banned users from shari...

Government & Policy

Tech bosses who willingly flout UK online child safety rules to face criminal liability

Natasha Lomas
7:00 PM GMT+5:30 • January 17, 2023

The UK government has confirmed it will expand criminal liability powers contained in draft online safety legislation which is currently making its way through parliament with the aim of preventing...



Robotics & AI

DeepL takes aim at Grammarly with the launch of Write, to clean up your prose

Ingrid Lunden
6:59 PM GMT+5:30 • January 17,

On the heels of raising a big round of funding at a $1 billion valuation last week, DeepL is taking the wraps off a new language product, the first extension for a startup that made its name from i...

2023

Startups

Sequoia India-backed GoMechanic faces severe trouble

Manish Singh
6:53 PM GMT+5:30 • January 17, 2023

GoMechanic has laid off a significant number of its workforce as the Sequoia India-backed startup struggles to raise funds amid serious concerns of accounting troubles, a source familiar with the m...

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