



INVEST IN VULCAN AUGMETICS

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## Democratizing prosthetics for developing nations 🦾

### LEAD INVESTOR



**Ato Bentsi-Enchill** Director, Black Adam Africa Capital Management

I chose to invest in Vulcan primarily because of Rafael and the rest of the team. After more than 5 years in the venture capital space, I'm 100% sure that the strength and passion emanating from the founders is what builds a successful company. Rafael shows deep technical and domain expertise and has translated parts of his experiences from childhood to solve a problem afflicting millions of people worldwide, at a better price point and with more functionality than the incumbents! Vulcan is a truly disruptive player in the business of democratizing access to prosthetics, especially for emerging markets. This is just the first step for the team; with their product roadmap as well, I'm fully confident the team will rise to become a formidable leader in all things related to the \$13B assistive mobility industry.

**Invested \$1,000 this round**

[Learn about Lead Investors](#)

[en.wearevulcan.com](https://en.wearevulcan.com) Austin TX

Technology

Robotics

Medical Device

Hard Tech

Minority Founders

## Highlights

- 1 Techstars, Shark Tank, & SXSW Innovation Award company, 30 yrs experience in prosthetics & robotics
- 2 ISO 13485, export-ready, 18 clinics in nation-wide network with 80% conversion, 90% retention.
- 3 Fast execution: built, certified & launched functional robotic hand in 2.5 yrs, \$420K raised
- 4 📄 3 patents in mechatronics, ML and UX systems — 1 assigned, 2 pending
- 5 Transforming the \$800 billion physical disability market, starting with prosthetics
- 6 Vulcan is 10x cheaper & 5x faster to fit than competitors, can be upgraded at home in seconds

## Our Team



**Rafael Masters** CEO & Co-founder

Rafael grew up next to the biggest disabled college in the UK, and has spent a lifetime working around disabilities. He has an MBA, is self taught in 3d design and manufacture, and is listed on multiple patents. He is also a huge sci fi and lego fan.

I grew up next to the biggest disabled college in the UK. Most of my teenage friends were in wheelchairs and led full, amazing lives. And the technology to do this was not that complex. A couple of motors, some wheels and a joystick. But it was hideously overpriced.



**Ella Trinh** COO & Cofounder

Ella is from a military family and spent her childhood around veterans with war injuries. Her talent in CX, system design, network building, and marketing built Vulcan into an industry leader: 2 yrs from founding to certified product with NPS 4.5/5



**Duy Phuong Nguyen** Software Lead

Duy leads the Machine Learning and software development at Vulcan, and ran the ML project with Qualcomm last year. He is currently taking a PhD in Robotics and Machine Learning at Princeton university.

[SEE MORE](#)

## Why Vulcan Augmetics?



Here is the deep dark secret that most prosthetics companies wont tell you:  
**Making an affordable robotic prosthetic isnt actually that difficult.**

the problem isn't to develop a (financially) successful prosthetic. It's not

The problem isn't technology (literally anyone can 3D print a prosthetic. It's not hard), the problem isn't affordability (or everyone would have cheap Chinese prosthetics already). Its **distribution and maintenance at scale**. The disabled don't need the latest and greatest tech. They need something that **just WORKS, for them, right now**, and that they can take care of themselves.

Vulcan's CEO grew up next to the biggest disabled college in the UK. Most of his teenage friends were in wheelchairs and led full, amazing lives. And the technology to do this was not that complex. A couple of motors, some wheels, and a joystick. But it was hideously overpriced.

After graduating and moving to Vietnam, he observed that disabled people in developing nations have even fewer options and that all of the startups trying to solve this are approaching it as a design problem, not a systems problem.

So that's why Vulcan was created. To provide a platform to sell and distribute practical wearable technology in low infrastructure environments, and put control of their body back in the hands of the user. And if they don't have hands for us to put the control back into, we'll give them some.



we aim to make a difference, and you can too.

# YOUR PERKS WITH ❤️



## \$250-\$500: GEEK FAN

Print your own hand:  
Vulcan STL File or  
Challenge Coin



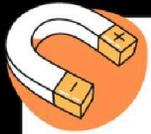
## \$5000: LIFE CHANGER

Sponsor a FREE  
prosthesis to change an  
amputee's life - forever.



## \$10,000: BOSS OFFICE

Infamous Vulcan Set &  
HandGun.  
Drop some jaws.



## \$1000: STARTUP FOUNDER

RFID Business Card: Tell  
your startup story in a  
cool way. Custom made.



## \$30,000: INVENTOR

You work with us inventing a  
robotic module to empower  
prosthetic YOUR (wild) way.  
NAMED - AFTER - YOU.



# The assistive technology industry is broken.

It is inefficient, inaccessible, expensive, and impractical. It's not reaching 65% of its potential users.

**WEARABLE TECHNOLOGY IS BROKEN**

WHO estimates **2 billion** people will need assistive technology by 2030

Only **35%** have access to products

**Over 70%** abandon them

**Why?**  
**Terrible user experience**

<b>No Information</b>	<b>Dependency on clinics/travel</b>
<b>Expensive products</b>	<b>Inaccessible</b>

2

There is no trusted central source of information for new amputees, people cannot access products, the ones they can access are expensive, the pricing is opaque and exploitative, and the products are designed to require constant maintenance from clinics requiring users to travel frequently.

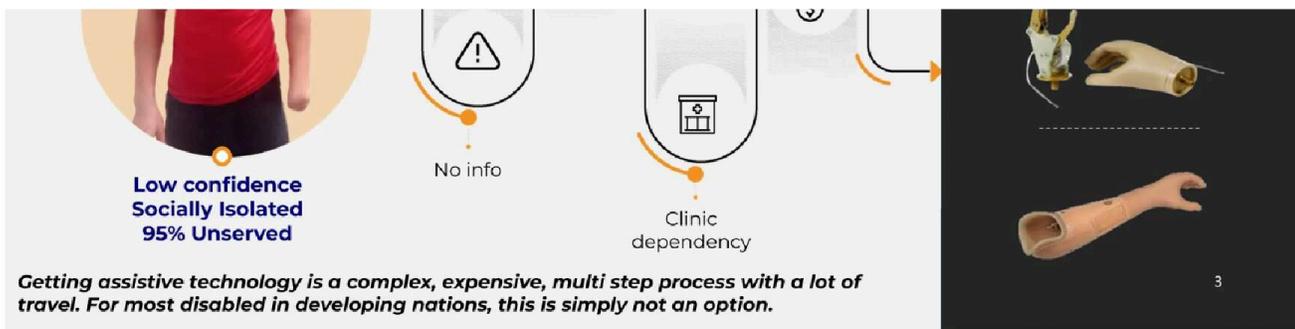
This is why there are over 38 million amputees who have literally zero access to this technology, and why nearly 70% of users abandon their prosthetics.

**WRONG PRODUCT, WRONG DISTRIBUTION**

Travel

High cost

Impractical "Solutions"



Our solution, we make the product modular and digitize the process, turning prosthetics into an affordable, convenient consumer product.

Making it modular means it can **click together as easily as lego**, so if a part needs repair, replacement, or upgrading we can simply ship parts to the user’s door and they can **fit themselves**. It also means clinics require less training to take care of users, and we can design a range of easily switched **special attachments** to help users get back into work.

We digitize by having the whole process online, from hospital recovery to rehabilitation to clinic visits to product maintenance to community. Instead of just building a product we are **building an ecosystem** that gives our users full control of the process and their body, and the information to make the choices that are best for them. We also use **ML-powered software** to read the user’s biosignals and train their prosthetics to better respond to their body better over time, instead of having to adapt their body to their prosthetic (which is what happens now).

## SOLUTION: GO MODULAR AND DIGITIZE



Make the hardware into a modular product family, distribute online, and use advanced ML to speed up adaptation process and increase retention.

### Built for life, not the lab

Hardware designed to be easy to learn, use and maintain, based on input from real users in real life situations.

### Evolve with the user

Modular upgrades and ML powered software so the users body can change with them over time and as

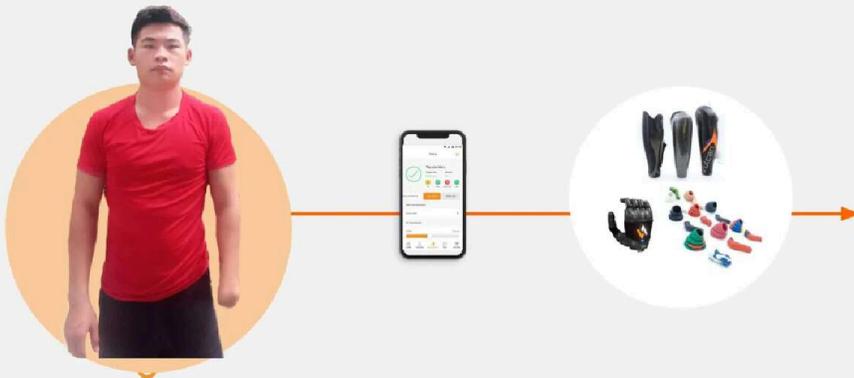
### Make it Easy

Full user process, discovery, purchase, rehab and service, moved online with a strong community of engaged users for

Our users can order our prosthetics by:

1. Visiting our app
2. Ordering their customizable prosthetics
3. Get it delivered straight to their door.

## A LIFE CHANGING SOLUTION



*We make prosthetics modular, and digitize the process to go fully remote service, the only prosthetics company to do so.*

*By designing a product around distribution and maintenance from day 1, we are able to move nearly the whole discovery, purchase and aftercare process online, and make a product that adapts to the user and increases retention*



Turn wearable robotics into a modular product family,  
let people customize on their own terms and build  
their own bodies



01



Help with daily tasks

02



Fulfil your passion

03



Improve your income

We built products to scale to millions, not to show off our tech. We work intensely with our users and design according to their requests, for things they actually need. We recognize that a systemic industry problem needs more than a single shiny product to solve it, and we build complete systems to scale accordingly.

**CLEVER PRODUCT**

- Modular customization
- Wireless controls
- Low cost, high function

**SMART SOFTWARE**

- Adapts with AI
- Device hub
- Full User Control

**SMOOTH SERVICE**

- Information & discovery
- Online marketplace
- CRM for clinics

**30X** faster adaptation time compared to industry standard

So we've built a platform, not just a single product, so we can integrate the whole recovery process and make sure our users get the tools and support they need from hospital to home.

**90% RETENTION | FANTASTIC USER EXPERIENCE**

Không Tay Gaming / đang sử dụng TikTok. Hãy tham gia c...

Một người dùng đang sử dụng thiết bị trợ giúp để chơi game.

Một người dùng đang sử dụng thiết bị trợ giúp để làm việc trên laptop.

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## Who are our competitors?

### The Establishment: Ottobock, Ossur, Tehlin.

Large multinational medical device manufacturers. Ottobock did over a billion in revenue last year. They are primarily focused on developed markets, especially the west, where they have governmental and insurance base subsidies to sustain higher prices.

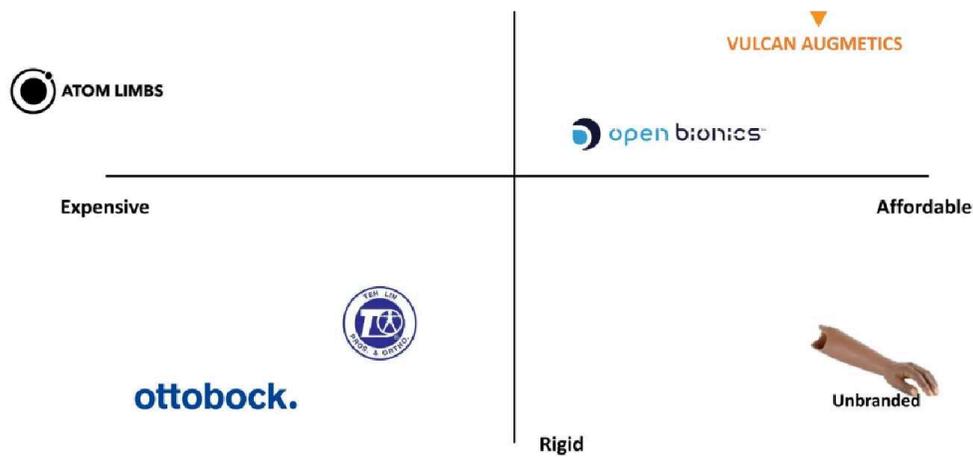
### The Generics:

Unbranded mechanical and silicon prosthetics, low function but also much cheaper than high-end robotics. (\$2,600 vs \$50,000). They are more popular but limited functionality means they have higher rates of abandonment, especially non-functional silicon hands.

### The Up and Coming: OpenBionics, Unlimited Tomorrows, Atom Touch

Startups focused on affordable high function hands. They make amazing products but they are still at least 10x our cost, and dependence on 3d printing as a core manufacturing technique (instead of supplementary) means scaling is a significant challenge. These companies tend to focus on making a single product (robotic prosthetic hands) affordable, which does not address systemic infrastructure and support issues, or have clearly defined roadmaps to extend to other products. With the exception of Unlimited Tomorrows, they also use standardized myo sensors and socket fits (Unlimited Tomorrows have their own system, which is highly effective but requires a lot of inbuilt sensors)





There are 57.7M amputees worldwide and 40M of them are in developing nations and mostly unserved.

Instead of us going to go where people are already served, we are going to expand the entire market by focusing on developing nations. We have already done this in Vietnam. Our next target is India by the end of 2022.

## What is your addressable market?

The global prosthetics market in 2026 is projected to be \$12.3 billion USD. The wearable technology market will be worth \$118 billion USD and the total physical disability market is over \$800 billion.

Step one is just prosthetics, and we are serving the 65% of the population currently not in the market, meaning we expect to expand the market size.

### MARKET POTENTIAL | UNTAPPED



**\$ 12.28B** + **\$ 22.81B**

2026 Global Prosthetics & Orthotics

65% of amputees worldwide UNSERVED



57.7 Mil

amputees worldwide

40 Mil

amputees in developing nations

95%

unserved

Our revenue streams over the next 18 months will be as follows:

## VALUE & REVENUE STREAMS

	 <b>USERS</b> <i>Affordable independence, confidence &amp; community</i>	 <b>CLINICS</b> <i>More clients, more money, less effort</i>	 <b>CORPORATE PARTNERS</b> <i>Look good for the world, pay less taxes</i>
<b>HARDWARE</b>	Affordable prosthetics Accessories, upgrades, replacements	Products they can sell w/ minimal training and no technical aftercare.	Prosthetics for impoverished amputees, custom branded modules and covers
<b>SOFTWARE</b>	ML software to control prosthetics	Customer management & tracking	N/A
<b>SERVICE</b>	Clinical support, maintenance, subscription & financing packages	Marketing, scheduling, technical upgrade training	PR coordination, events, product branding

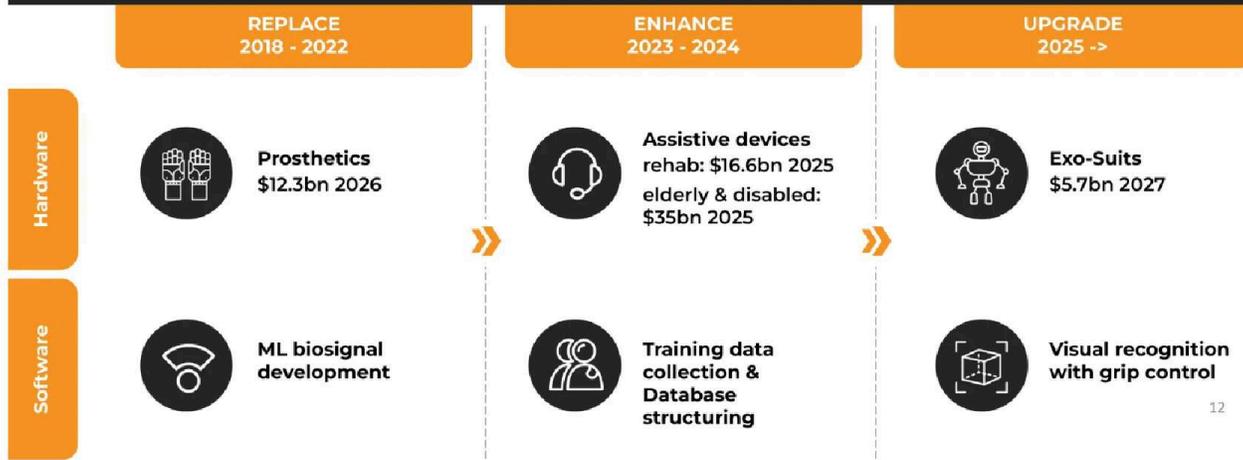
Our technology roadmap consists of hardware, software, and service offerings. We intend to leverage sensor platforms on affordable prosthetics from thousands of users to build the **ultimate ML powered control system for wearable hardware**, which can be extended into assistive tech, mobility aids, industrial exo suits, and of course AR. Meta have just released a suite of AR software directly based on prosthetics myo technology. We are going to approach it from the opposite direction, building amazing prosthetics software that can be applied to AR and wider markets.

We do not see our users as objects of pity, we see them as **tech pioneers** driving the next generation of human-hardware development.

## TECHNOLOGY & ROADMAP

Prosthetics are a **starting point** and excellent source of **training data** to build software and systems for the rapidly growing wearables and assistive technology markets.

The goal is to be the global platform for wearable technology, a **one stop shop to upgrade your body.**



12

## THE TEAM



**Rafael Masters |**  
**CEO & Cofounder**  
**MBA International Business**  
10 years business and special  
needs exp, 5 years in  
maker/3d print community



**Ella Trinh |**  
**COO & Cofounder**  
**B.A. Business**  
5 years management  
experience, 3 years medical  
network experience



**Mark Messina | CTO**  
30 years experience in  
robotics & medtech



**Linh Lê | CPO & Prosthetist**  
30 years prosthetics experience  
Industry influencer and clinic owner



**Duy Nguyễn | Electronics Lead**  
**B.Sc. Electronics Engineering**  
Princeton PhD in Robotics

13

With our current traction, we have 70 users and have generated \$64,000 in revenue. We have 18 clinics in our distribution network and 3 patents. (1 assigned, 2 pending) We have partnerships signed for financing (EasyGop), education (Funix) & CSR (Momo, DCI).

We have conducted projects with the UNDP and some of Vietnams largest brands, such as The Coffee House and BitisHunter.

We developed our ML technology through a program with Qualcomm, and it works with both biosignals and visual recognition, and finally we were selected as a SXSW Innovation Award Medtech finalist.

## TRACTION



**62**  
active  
users



**17**  
clinics and  
hospitals  
in our  
network



**3 Robotics/  
ML patents**  
**1 filed**  
2 pending



**90%**  
industry  
beating  
retention



Partnership  
signed to  
provide  
**interest free  
financing**  
to users

Qualcomm



RMIT  
UNIVERSITY

EASYGOP



14

## VULCAN AUGMETICS 2022



Optimise manufacturing to  
reach **85%** gross margin

**X5** sales revenue compared  
to 2021



Enter India or Africa



Launch ML app to  
first 20 users

Vulcan Augmetics | rafael@wearevulcan.com

15

We believe that the future of prosthetics lies not just in the product, but in making the entire experience convenient, comfortable, and smooth and something that works for our users where they are.

We want to invite you to join us in this movement to change the prosthetics industry on a global scale, **make traumatic disability a temporary inconvenience**, and give people back control of their own bodies.

inconvenience, and give people back control of their own bodies.