

INVEST IN DRIVEN

## A technological leap for e-bikes

### LEAD INVESTOR



**CeramicSpeed Sport** Heidi Jennifer Fly Christensen

There are many reasons why CeramicSpeed believes this company has a high probability of success. Driven has created an e-bike drive system that is destined to disrupt the e-bike industry. Their drive system eliminates the complexity and maintenance of a chain and derailleur configuration. This beveled gear system is surprisingly simple, reducing the gear-count, making it light weight and accommodating both manual and continuously variable shifting modes. The system is also one of the most efficient configurations on the market.

This direct drive configuration is up to 20% more efficient than other e-bike drive systems - this translates to better battery range and a high sustainability factor. Another differential advantage is that since it is a sealed unit, the drive system is virtually maintenance free and will need lubrication only after thousands of miles. The Driven drive system is based on road tested technology that is currently in use in many hybrid automobiles and is protected by Driven through a patent portfolio specifically tailored for e-bike/cycling applications. The simplicity of the drive system also makes it cost effective to manufacture. We believe that Driven can offer a superior product that competes with high-end e-bikes resulting in a high margin business model and quicker timeline to profitability. Furthermore, this system is OEM-friendly with a single bolt on solution. The e-bike market is exploding, with sustained growth of over 12% year-over-year. And finally, the management team at Driven has met all

its deadlines and has already produced three rideable prototypes. This system is proven and ready to launch. Bringing on Brian Baker and Jason Wolf to augment the founder and inventor Jason Smith has been a boon to the company. Mr. Baker has great startup and manufacturing experience, Mr. Wolf brings Fortune 500 experience and M&A to the mix, and founder Jason Smith is bike industry veteran with several of his inventions at market today - this is his latest brainchild and we believe it to be a winner. For all of these reasons, we feel that Driven can positively transform the e-bike and mobility markets, and that's why we have decided to be lead investor.

Note: Driven was spun out of CeramicSpeed in 2020. CeramicSpeed is the majority stockholder in Driven.

**Invested \$50,000 this round & \$700,000 previously**

[madebydriven.com](https://madebydriven.com)

Boulder CO



B2B

Hardware

Transportation

Sports Tech

## Highlights

- 1 Advanced and innovative e-bike drive system.
- 2 Three patents awarded, 2 provisional patents. The Driven system is truly novel to micromobility.
- 3 Extended battery range of 10 - 19% - more efficiency is better for riders and the environment.
- 4 Extremely low maintenance (every 10,000 miles).
- 5 A single, bolt-on solution - no more cobbling together of chains/derailleurs/motors.
- 6 The e-bike market is experiencing hyper growth. Now a \$30B + market with almost a 15% CAGR.

7

Led by seasoned bike industry professionals with dozens of successful products in the market.

8

Spun out of CeramicSpeed. Already raised ~\$2M from bike industry and crowd funding investors.

---

## Our Team



**Jason Smith** Founder and CTO

20-year Mechanical Engineer, Several bike inventions at market



**Jacob Csizmadia** Board Member

Founder of CeramicSpeed



**Martin S. Banke** Board Member

EVP at CeramicSpeed



**Brian Baker** CEO

25-year executive, several consumer tech products at market

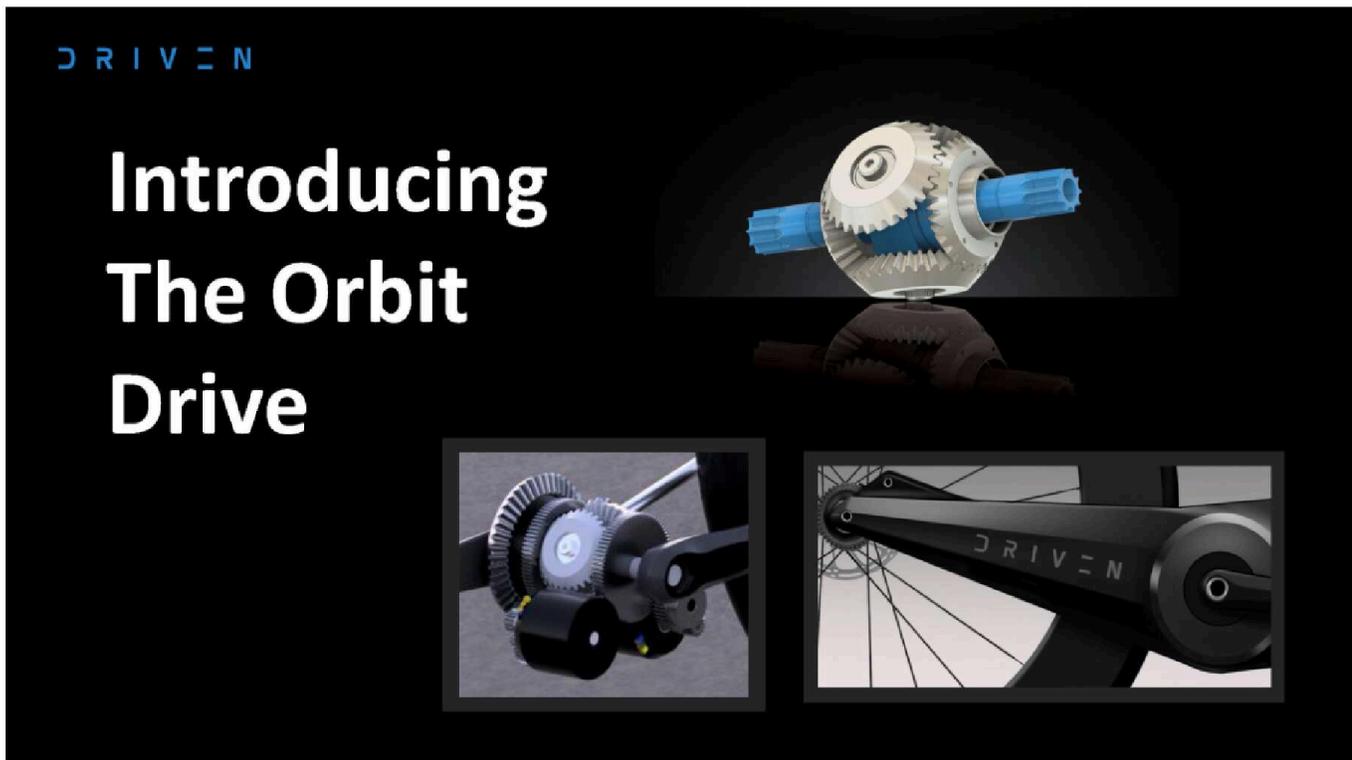


**Jason Wolf** CFO

27 years of finance and strategy experience within large Fortune 500 companies

---

# Driven Technologies



Driven Technologies had a Eureka moment last summer, when we discovered that an electric hybrid vehicle drive system is one of the better solutions to propel an e-bike.

This led us down the road of building such a system, patent-protecting the technology, and bringing it to market.

We introduced our system, called the Orbit Drive, in Germany this June to great industry and press accolades. We believe this is the future of e-bike drive systems, designed and developed in Boulder, Colorado.

## Press Comments from Eurobike



*"(Driven) is going to change how drivetrains work and you have to see it in action."*

*"(Driven) will again steal the limelight at Eurobike."*

*"It is clear that this innovation has the potential to revolutionize the way we ride electric bikes."*

*"...the Driven system is back in the limelight.."*

			
<p><i>"Revolutionizing the Future of Cycling.."</i></p> 	<p><i>"The maintenance-free nature of the system will likely appeal to riders and brands alike.."</i></p> 	<p><i>"It's what the internals achieve that's impressive."</i></p> 	<p><i>"we were completely in awe."</i></p> 
			

# What Problem are we Solving?



Most e-bikes use old-school chains and derailleurs as their drive systems, coupled with a motor at the rear wheel or in-between the pedals.

This technology is 100 years old and is ripe for disruption.

Our goal is to provide the e-bike industry with a drive that isn't exposed to the

elements, uses modern gear technologies, and provides a better experience to the rider, all in one package.

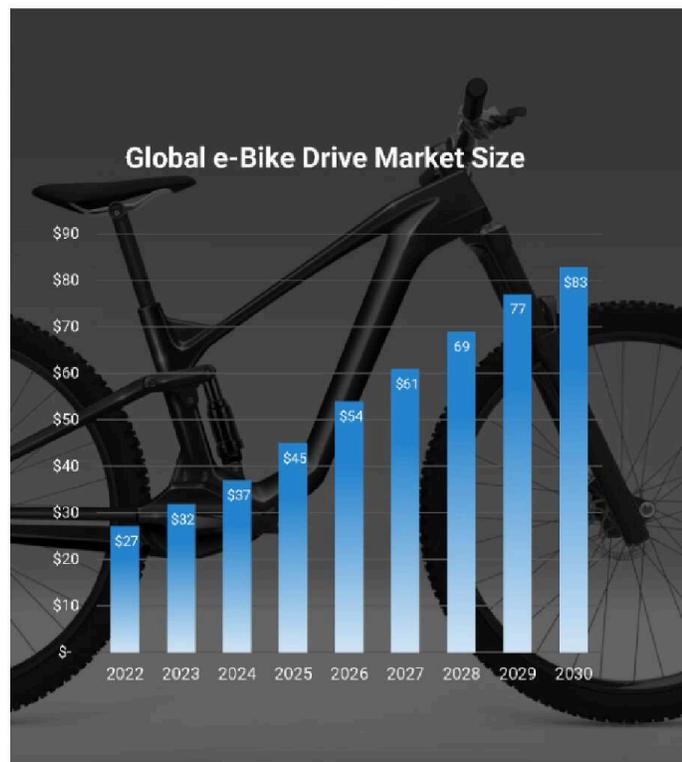
Our solution is an e-bike drive system that mimics hybrid electric vehicle technology from Toyota, Ford, and Stellantis (owners of Chrysler/Dodge/Jeep/Fiat).

## The e-bike Drive Market is Booming!

### Market Fantastic Growth In E-bike Drive Systems

The e-bike drive market – a \$32B juggernaut showing no signs of recession

**CAGR 14.6%**



The current e-bike drive market is at \$32B globally. This market is growing at an astounding 14.6% compound annual growth rate. Projected growth puts the drive market at over \$80B by 2030. (Fortune Business Insights, 2023)

## Big Players are in the Space

### Recent Acquisitions and Partnerships

Industry Consolidation is on the Rise



Harley Davidson's invests heavily in their 'Serial 1' e-bike – currently a best-seller



Sequoia Capital invests in Aventon e-bikes, deal valued at over \$100m



Porsche acquires Fazua and partners with Ponooc (Pon) to create two new divisions within Porsche – now a powerhouse in e-bikes and micromobility

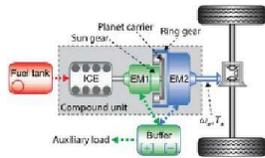


Bombardier acquires majority stake in Pinion (gearbox technology) to advance e-bike solutions and micromobility products

# Our Solution to Old Technology

## Hybrid Vehicle Tech to e-bikes

Hybrid cars combine internal combustion with electric motors



Driven combines pedal power with electric motors



## Bringing modern hybrid vehicle technology to e-bikes

The Orbit Drive uses an epicyclic gearset to combine two inputs, one from the pedals (the rider) and one from the electric motors, to form

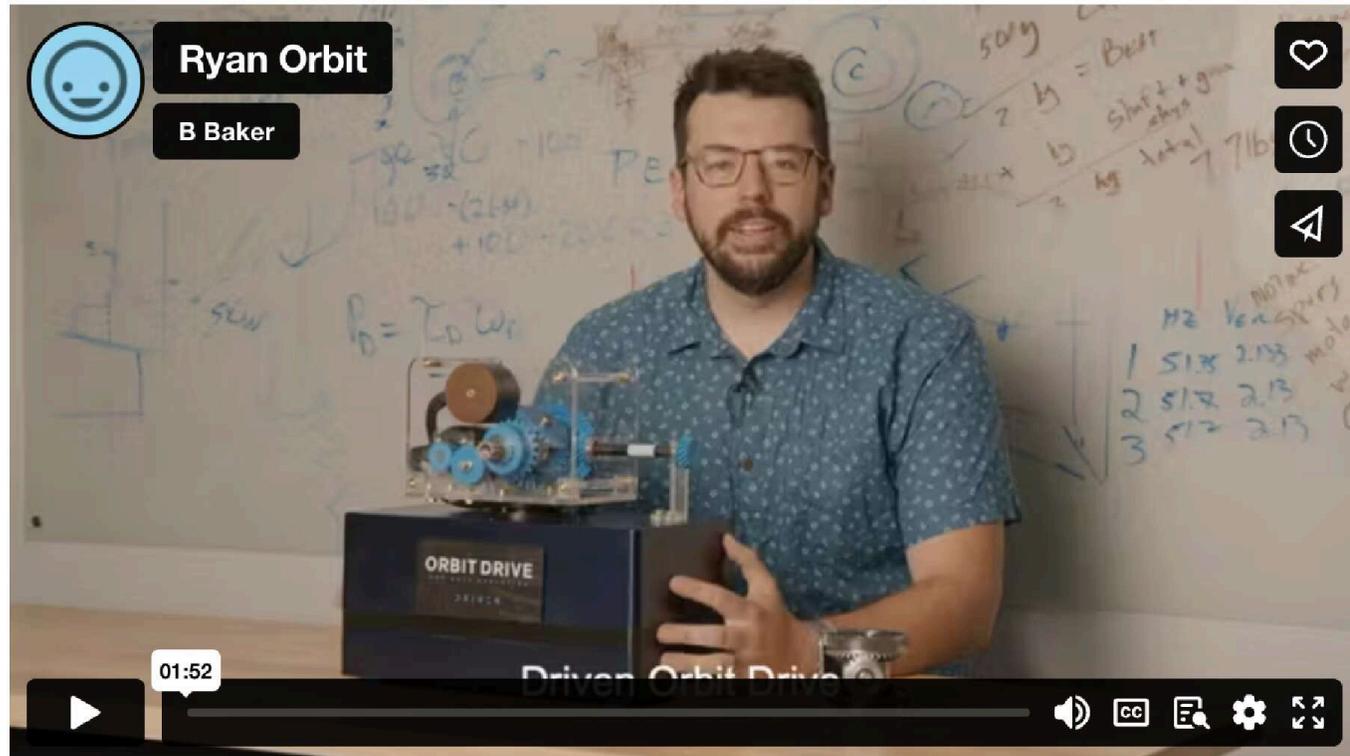
one seamless output of propulsion to the rear wheel.

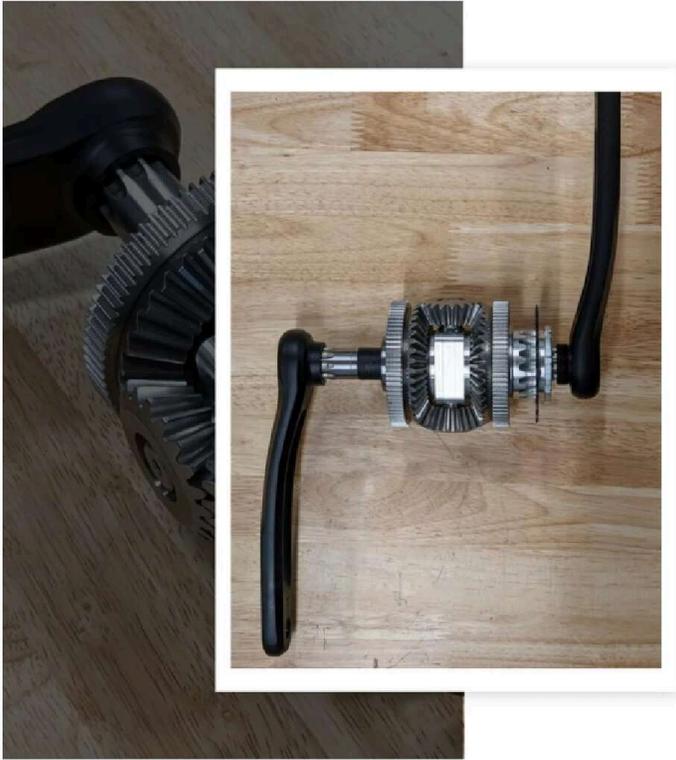
We then added a bevel to the gears, so they fit nicely inside the space between an e-bike's pedals, traveling over the spindle. Technically, this is called a 'variable speed bevel differential' drive system.

And finally, we enclose the drive in a fully sealed housing with the complete drive system delivered in one sleek package.

The result? The drive system of the future for all of pedal-assist micromobility – but let's stick with e-bikes for now.

Our Director of Engineering, Ryan, explains the Orbit Drive using our Eurobike fixture:





## Value Propositions of a Bevel Differential

- Ability to use fewer parts and enclose them all in one discrete package that fits between the pedals
- Extremely low maintenance requirements (10,000 m) - bringing automotive reliability to the e-bike market
- Continuously variable - the 'clunk' of shifting is a thing of the past
- Typical extended battery range of 10 - 19% (greater efficiency)
- Sustainable Bill of Materials + no grease or oil exposed to the environment

Ryan explains the benefits of a completely enclosed drive system:

**Ryan - enclosed drive**  
B Baker

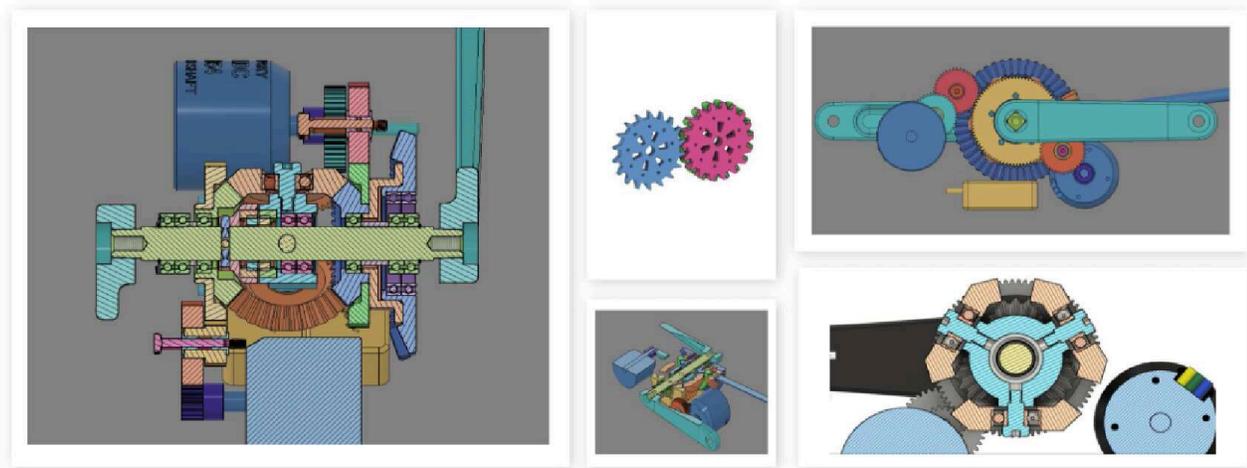
00:41

Ryan Driven

---

## Outstanding Patent Portfolio

---



### Patents

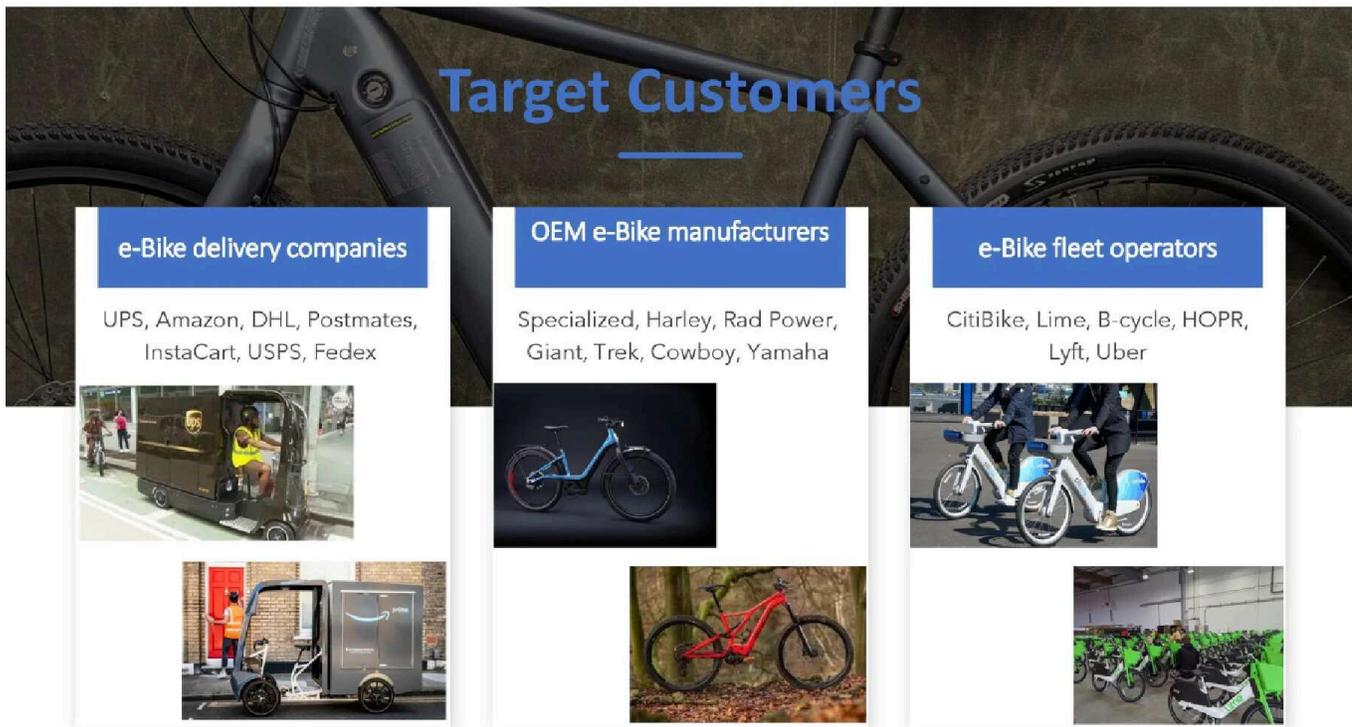
1. A European patent office has sent us an ‘intent to grant’ letter from our ‘bevel differential’ patent application filed in August, 2022. We have applied for patents across all of Europe, Asia, and the United States. We believe this patent is valuable IP.
2. As we are using two small motors, Driven is able to measure rider torque and cadence every few milliseconds, making adjustments on the fly to maintain constant rider-torque regardless of terrain (going up a hill? the motor adjusts accordingly so the rider can maintain preferred pace/torque). This patent is currently under review in the United States and will be under review in the Europe in January 2024. We believe this IP will also have great value in the e-bike space.
3. We have an awarded patent in rocker-chain technology for a bicycle chain. We

worked with CeramicSpeed to secure this patent and it may be used with the Orbit Drive in a chain configuration.

4. We have an awarded patent in roller-on-tooth gear technology in a bicycle application. This makes gears efficient. This IP would be effective should one of our partners like to use the Orbit Drive in an extreme-efficiency application.

5. We have an awarded patent in specialized 'face' gear technologies coupled with a drive shaft. This IP allows options for future iterations of the Orbit Drive.

## Customers



The graphic features a background image of a bicycle frame with the text "Target Customers" in blue. Below this, three white boxes with blue headers list customer categories and examples, each accompanied by representative images.

### Target Customers

- e-Bike delivery companies**  
UPS, Amazon, DHL, Postmates, InstaCart, USPS, Fedex  
  

- OEM e-Bike manufacturers**  
Specialized, Harley, Rad Power, Giant, Trek, Cowboy, Yamaha  
  

- e-Bike fleet operators**  
CitiBike, Lime, B-cycle, HOPR, Lyft, Uber  
  


## What do e-bike manufacturers/fleet operators need today?

Driven is a B2B company, with our drives available to e-bike manufacturers worldwide.

We've been talking to several e-bike manufacturers for the past year. Most of them are very frustrated with cobbling together drive systems. A typical Bill of Materials (BOM) for an e-bike drive system looks like this:

Motor (s) + Circuit Board + Control unit (to control the motors and drive) + Head unit (user interface module) + Chain or Belt + Chain or belt tensioners and covers + Cadence sensors + Torque sensors + Derailleur system + Wiring harnesses + Gears + Spindle (what the pedals are attached to) + Shifters + Battery (commodity).

Driven can minimize this BOM for e-bike manufacturers as our system incorporates many of these parts. The Orbit Drive system includes the motors, circuit board, control unit, all power transfer to the back wheel, wiring between battery, drive system and head unit; gears and gear-shifting, cadence and torque sensing via software, the spindle and the enclosure. Driven is cutting out more than half of the drive system BOM for e-bike manufacturers.

NOTE: we are agnostic to the batteries (a commodity) and the user interface/app (most brands have their own - we can simply plug-in via API).



VS



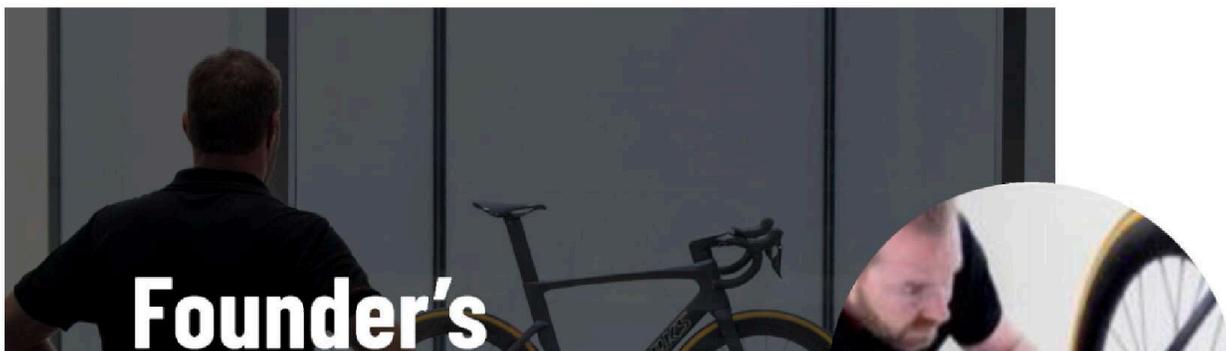
## Rider needs – what do e-bike riders want?

As with most products, people want something useful and fun, reliable and free of hassle. Think about your car – you don't want to be stuck on the side of the road waiting for a tow truck, you want to be moving! Same with e-bikes.

Driven solves the 'fun' and 'useful' issues by providing riders with a continuously variable gearset. This means that the rider won't 'feel' the shifting of gears, as gear-shifting goes up and down on a smooth ramp of power, depending on terrain and effort from the rider. If you've ever driven a Tesla, a Polestar, or even a Prius, you know what we mean – you can't feel gear shifts!

Driven then solves e-bike reliability issues in several ways. First, we do something that seems a bit basic but makes all the difference in the world; we put the drive system in an enclosure. The Orbit Drive contains steel and ceramic components surrounded by a lightweight enclosure. No more fragile gears and shifting mechanisms exposed to the elements; this is akin to a hybrid car transmission, in a bike.

We are also confident in the longevity of the system. Our drive system is similar to those used in hybrid vehicles for over 25 years and is battle-hardened and tested by Toyota, Ford, and the Stellantis brands. By design, our drive also has fewer parts than most gearing systems on e-bikes (fewer failure points), and once installed requires no adjustments.





## A founder's journey leads to a Eureka moment

2018 – 2020 Jason Smith, our founder and CTO, was working on advanced gearing systems for CeramicSpeed, a bike-component company out of Denmark. Their first 'Driven' drive system wins the Eurobike innovation award and rocked the community!

Late 2020: Driven becomes its own company located in Boulder, Colorado, the epicenter of the United States bicycling community. CeramicSpeed is the majority shareholder.

Early 2021: Driven runs an equity crowdfunding campaign and raises 1 million dollars in 36 hours! Jason hires engineers to support advanced gear development.

Summer 2022: The bevel differential gearset is identified as having a bright future in e-bikes.

Summer 2022: A new CEO (Brian) and a new CFO (Wolf) join Driven. The company immediately goes into stealth-mode to start building prototypes and filing patents around their new drive system. CeramicSpeed supports this development with further investment.

Summer 2023: After 10 months of continuous development and prototyping, Driven unveils their new drive system at Eurobike 2023 to great fanfare and industry validation.

Today: A return to equity fundraising (Wefunder!) to bring our patented Orbit Drive to e-bike manufacturers the world over.

## What's Next for Driven?

### **We are super excited by our response from Eurobike!**

We have eight hot leads from the show, with another five in the wings. We are still in the early stages with these companies, but we can say that each produces hundreds of thousands of e-bikes or components every year and they represent the leadership of the industry.

Big companies like this command a long sales cycle, but our next steps with them are clear: provide drive systems on bikes that they can test on roads and trails. This is our most pressing task, creating these hardened test-bikes, and are a necessary part of the process. After that, we will be working with these partners to secure purchase orders or joint-development agreements.

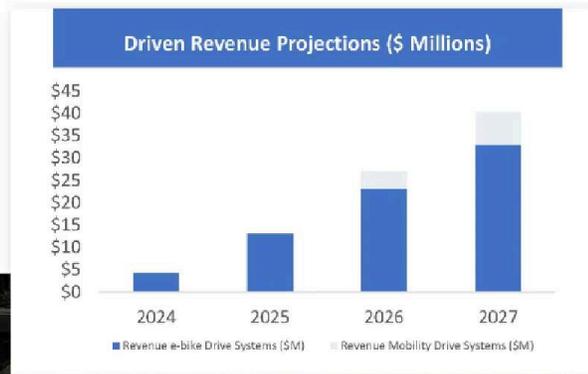
How far away are we from delivering drives? Depending on a myriad of factors, we expect to be in the drive-selling business by the Summer of '24. And, if one of our current soft-orders becomes a reality, maybe even sooner.

Our management team has great experience in dealing with this sort of deal-flow AND with building product at scale. Jason Smith has invented several products currently for sale in the bicycle market. B. Baker has pioneered several products for sale worldwide in consumer tech, and Jason Wolf has secured M/A transactions worth billions of dollars. We are extremely optimistic about potential partners and we know the ins and outs of big business; we believe this is a winning combination.

# Forward Looking Plans

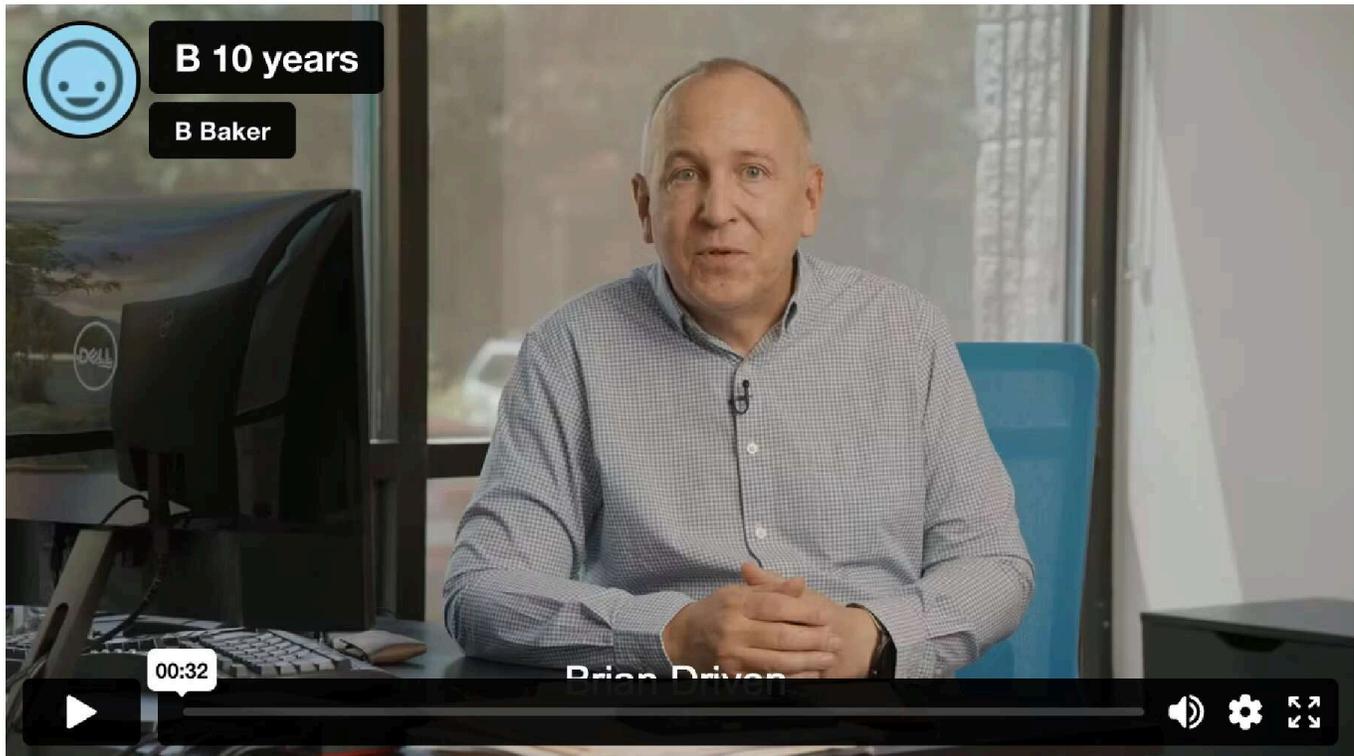
Conservative Revenue Projections, customer count, and units drive significant revenue

Driven Revenue Metrics	2024	2025	2026	2027
Revenue e-bike Drive Systems (\$M)	\$4	\$13	\$23	\$33
Revenue Mobility Drive Systems (\$M)	\$0	\$0	\$4	\$7
Market Share	0.1%	0.2%	0.3%	0.4%
Customers	5	8	10	15
Units/Customer	1000	2000	3000	3000



*Forward-looking projections are not guaranteed.*

Our CEO discusses 'disruptive' technology:



# Exit Opportunities

While we feel confident we can provide the Orbit Drive to OEM's and build this company, there may be situations where an exit will more than satisfy our shareholders and must be considered. We are open to all ideas that bring returns to our shareholders!

Licensing agreement with leading OEM e-bike manufacturer. Currently seeking partnerships with eight OEM's.

IPO – 3 to 7 years, we feel a .4% market share of providing drives to e-bikes would provide a growth-path that is attractive

Acquisition – The Orbit Drive is a leapfrog technology. Potential purchasers, for example, would include companies like Bosch, Yamaha, Specialized, SRAM, Trek, Porsche, Giant, et al. We are open to acquisition at any time should it greatly benefit shareholders.

Joint Development Agreement (leading to a purchase order or company sale) – A potential strategic partner may want to engage with Driven to further develop the orbit drive and have an exclusive arrangement to utilize the orbit drive in order to differentiate their product from the rest of the field.

*Exit is not guaranteed.*

## Save the world. Move better.

### Mission Statement

---

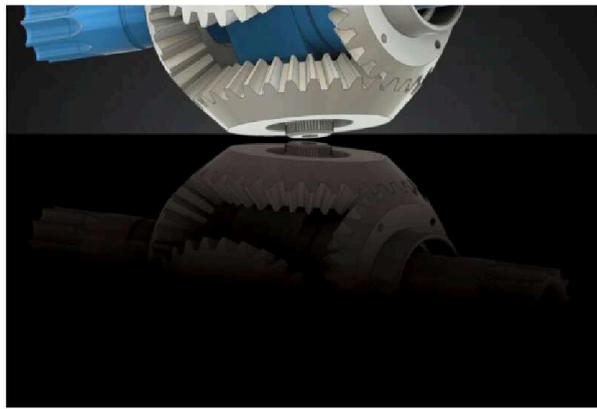
We at Driven believe that micro-



mobility is a significant step in achieving a sustainable future for all of humankind.

We are committed to providing micro-mobility markets with systems that take the highest level of technological sophistication to the masses.

Save the world. Move better.



**Thank you for reading! - team Driven**