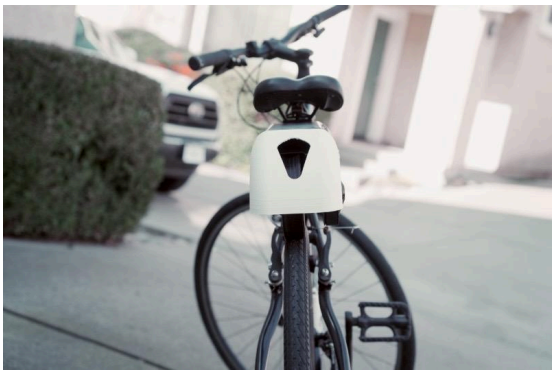
POWERWHEEL

A. Opportunity

We are Powerwheel that provides an attachable, modular power assistance smart device to urban bike commuters. There's a noticeable gap in the market for a way of commuting that is light, affordable, hassle-free, and exciting. Commuters or recreational cyclists often find riding over manageable distances extremely exhausting. Research shows that the primary concerns for traditional bicycle users include assistance on uphill rides (about 84% and 85%), the ability to travel longer distances (about 68% and 65%), and assistance against strong winds (about 62% and 65%). Older respondents showed greater interest in assistance on uphill rides, coping with windy conditions, and keeping pace with fellow cyclists, whereas they were less fascinated by the ideas of riding faster and exerting less effort. Clearly, an external, electrified, modular power assistance device that addresses these cycling challenges while allowing riders to enjoy the benefits of pedaling and expanding the range and capabilities of their bicycles, without the need to purchase a new electric bike, would be highly welcomed by the market.

B. Product

PowerWheel offers a simple and economical way to electrify regular bicycles, allowing riders to enjoy the benefits of assisted pedaling and extending their bicycles' range and capabilities with a fraction of cost of electric bike while giving superior user experience instead of trade off .The Powerwheel is a snap device drives the rear wheel, featuring a portable, detachable body installed behind the seat post. Its symmetric, mudguard-like shape communicates its function to users without needing textual explanations. It integrates seamlessly with standard bicycles, providing additional power without compromising the simplicity and familiarity of existing riding habits. The charging station at home is connected to the device through magnetic alignment, which ensures the charging is as easy as putting down their keys unlike the hassle of an electric bike. Through a single-step operation, riders can easily switch from a regular bicycle to PowerWheel-driven mode, focusing on simplicity to make urban commuting more efficient and enjoyable without a full upgrade to an electric bike, yet providing additive advantages include enhanced portability and supreme charging experience. PowerWheel will also offer iterative upgrades (P2) based on user feedback regarding stability, speed, and aesthetics.



Power Wheels product development includes proprietary technology, planning for patent applications post-development. It holds a technological first-mover advantage in U.S. college campuses, as no equivalent products currently exist in this space, providing PowerWheel a competitive edge to dominate the market.The P1 iteration has completed the first prototype, please access our company's website to review the on-bike testing media. The target customer base includes:Students commuting by bicycle within campuses, Faculty and staff commuting by bicycle within campuses,Potential bicycle users who haven't purchased a bicycle yet.These target customers are characterized by their ability to afford the purchase cost, their pursuit of efficient and energy-saving commuting methods, their trendiness and openness to new products, and their interest in product upgrades.

Market:

Statistics show, for instance, that the university town of Davis has about 15000 bicycle users, with the majority using bicycles mainly for campus commuting. The average commute time is about 15 minutes, covering a radius of approximately 1.6miles. Furthermore, cyclists facing urgent time constraints need to reduce their commuting time by more than half. Assuming half of Davis's bicycle users upgrade to this auxiliary power device, this could create a market demand for 7000 to 8000 units, leading to a SAM of 1.74 to 1.99 million USD.The iterative upgrade product (P2) would also trigger an equivalent scale of market demand. Considering the number of university campuses across the U.S. with similar

bicycling usage, this device could generate a significant market scale nationwide, which represents an 87 million dollar SOM. The TAM is estimated as the total market of people urged to upgrade to electrified biking experience of any form, which represents a 17 billion market size.

Currently there are few direct competitors with powerwheel in the US under similar e-bike conversion categories. Three approaches are made in terms of e-bike conversion: Friction drive, hub drive, and gear drive. The comparative analysis is being described below.

Friction drive Electrifying a conventional bike by friction refers to using the motor to spin a roller or a drive wheel that makes contact with the bicycle's tire. This friction created between the drive wheel and the tire propels the bike forward. This product form has the best uniformity between motor, battery and control system. Powerwheel is an example of the all in one converter kit, it has the tool free advantages over the whole category. **Hub drive** In a hub drive conversion kit, the electric motor is housed within the hub of the wheel, either the front or rear, depending on the model.Swytch is a hub drive product which represents the most easy-to-use installation on the market. However, hub drives can add weight to the bike, particularly in the rear wheel, which might affect the bike's handling. Additionally, repairing or replacing a hub motor can be more complex and may require specialized tools or expertise. **Gear drive** (or mid drive) a gear drive system is situated around the bike's bottom bracket, near the pedals. Gear drive systems may have a more complex installation process compared to hub drives. They might also require more maintenance, as they involve more moving parts within the bike's drivetrain. Similar to hub drive kits, such complications require reassembly of parts of the bike. A bike mechanic usually needs to assist the user which causes additional communication cost. Bafang is a company that makes products representing this approach.

C. Implementation and Finance

Powerwheel aims to seize the opportunity and actively explore the market with a lean startup strategic goal. Marketing strategies include offline displays and sales through existing bicycle brand stores, coupled with online sales directly to end customers. The city of Davis has 11 local bike resellers, which represents a very high market penetration, given a local bike supplier density of 1 per 1518 customers. This volume of biking population and the density of the sales channel is frontier in the United States. In the product development phase, we plan to take our minimal viable product to negotiate shelf space in local bike shops. The sales in this phase are mainly in pursuit of customer feedback, incorporating features and appearance. The company is dedicated to developing the first generation of external, electrified, modular power assistance devices (P1), with subsequent iterations (P2, P3) as upgrade products.

The revenuel be supported by a dynamic marketing campaign, targeting both online and offline channels to maximize visibility and engagement . The initial sale is expected to start at the end of the quarter and phase one customer feedback round round. The online distribution channel will be built in a parallel fashion, where the website is built and maintained using the wix platform. Additionally. The company will leverage its proximity to campuses with "flash mob" style promotions to increase product awareness and capture a larger customer base and sales channels during the start of the semester. This approach will be replicated in other California college towns and across the U.S, aiming for a 3-6 year sales expansion.

Our second prototype is expected to be prepared mid april, with our first prototype completing the initial experimenting phase, the second model would complete direct use experiments. We have made contacts with reliable suppliers and manufacturers in China for all inventory and transportation costs, and came up with a cost of 150 dollars per unit. We project to sell products through online and in person stores in Davis. Our online website, at a selling price of 199 dollars comes at a fixed cost of 149 dollars per year and a projected selling platform fee of 2% of our sales and shipping cost would be directly charged depending on the carrier. In person stores, at a selling price of 249 dollars, we project a higher sales commission share at 15% with no fixed cost due to the nature of sales. Through all distribution channels we would be offering two payment methods, one time payment and monthly subscription. Power wheels initial R&D, product managers and marketing team would be getting paid through equity in the first phase. Once finalized prototypes, we would shift to debt financing in order to maximize shareholder value. This would give us a profit margin range from 15% - 25%, we would then use the profit to reinvest in online sales platforms and develop other biking towns.