REPORT PREPARED BY:

IDC
INNOVATIVE DESIGNS & CONCEPTS

Indcusa.com

Purpose of This Report

The purpose of this report is to provide needed insight on the planning and development of this new venture. It will also provide analytics that support the project context and provide additional insight for potential investors. This report will provide historical, planning, and development context necessary for the establishment of goals, strategic planning, and working models for the new venture.

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About Innovative Designs and Concepts (IDC)

Innovative Designs and Concepts is incorporated in the State of Michigan in 2019 as a domestic limited liability company. The owners, James O. Price, and Kevin D. Binion, are managing members of the company. The current design office of the company is in Clinton Township, Michigan.

BykeCam Overview

BYKECAM ™ - Patent Pending, United States Patent and Trademark Office, EFS ID: 40563894

BYKECAM is a cycling visual aid safety feature installed on bicycles to assist riders in awareness of their surroundings. Bykecam works on pedal and electric bicycles. The purpose of this device is to provide bicycle riders with the ability to see rear view traffic from roads or pedestrian walkways.

This product was developed by Innovative Designs and Concepts as a direct response to research and statistics regarding bicycle fatalities in the United States. This device will reduce the number of bicycle related accidents for youth and adults.

Safety Research and Statistics

Bicyclists,[1] like motorcyclists, are not safeguarded by occupant protection measures found in passenger vehicles and face comparatively high exposure to injury risks in crashes on the roadway. In the absence of separate bike lanes, trails, or paths, bicyclists may be required to operate foot or low-powered electric bicycles on the roadway with vehicles. Bicyclists are also more susceptible to outdoor elements such as weather and road surface conditions (Reish, 2021). Rising bicyclist and pedestrian fatalities have prompted urgent calls from the National Transportation Safety Board (NTSB) and NSC in recent years (NTSB, 2019; Road to Zero, 2021). The number of bicyclists killed in traffic crashes has been steadily trending upwards since 2010. From 2010 to 2021, bicyclist fatalities ranged from 623 to a high of 966 with a yearly average of 800 (NCSA, 2022; Stewart, 2023). For the last 5 years (2017 to 2021), the yearly average has been 883 people on bicycles killed in police reported traffic crashes (NCSA, 2022; Stewart, 2023). Bicyclists accounted for 2.2% of total traffic fatalities in 2021 (Stewart, 2023).

Characteristics of the bicyclist fatalities during 2021 include (NHTSA, 2023):

Roadway location: The majority (62%) of bicyclist fatalities took place at non-intersection locations.

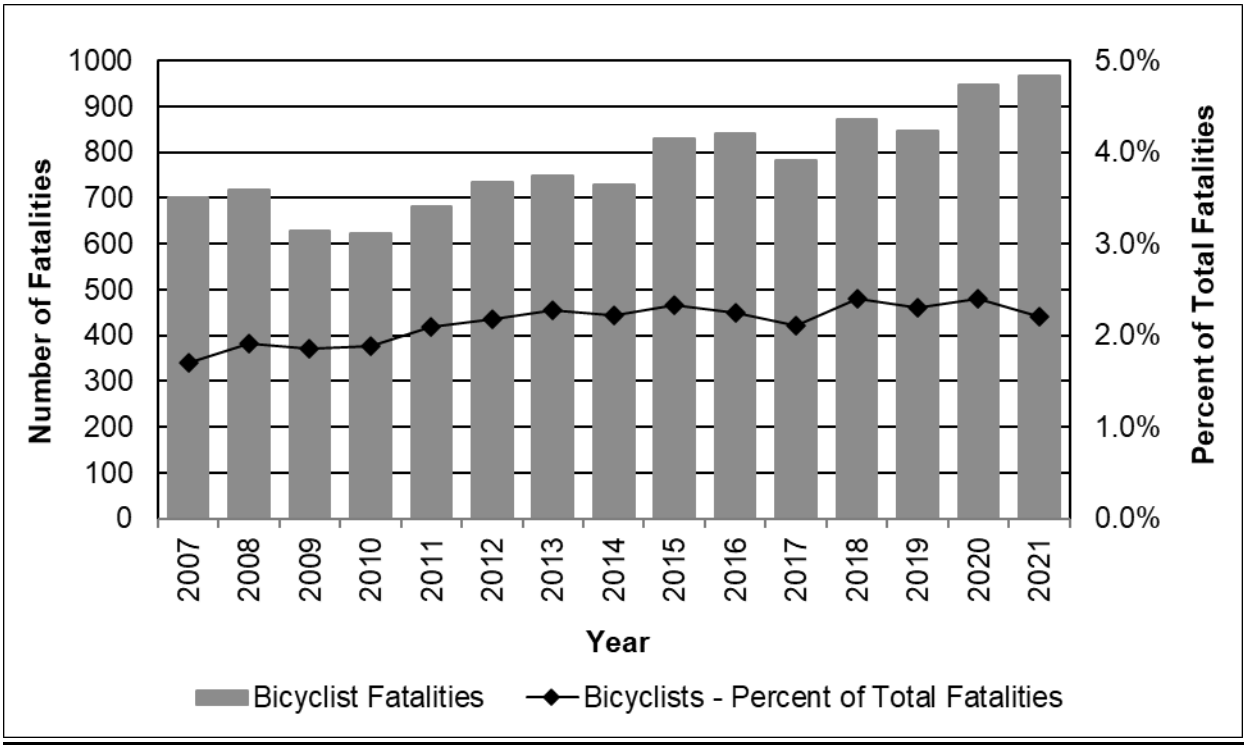
Land Use: Bicyclist fatalities tend to occur in urban areas more than rural areas, with urban fatalities accounting for approximately 85% of bicyclist fatalities. The proportion of bicyclist fatalities occurring in urban areas increased from 69% in 2011 to 85% in 2021.

Vehicle Type: Collisions with light trucks (which includes SUVs, pickups, and vans) were responsible for the highest proportion of bicyclist fatalities (46%).

Time/Light condition: Over half (56%) of bicyclist fatalities occur in dawn, dusk, or night-time conditions; the highest proportion (21%) of fatal crashes on weekdays occur from 6 p.m. to 8:59 p.m.; the highest proportion (23%) of fatal crashes on the weekend also occur from 6 p.m. to 8:59 p.m.

Sex: 86% of the bicyclists killed and 81% of those injured were male.
Age: The average age of cyclists killed was 49.

Bicyclist injuries remain consistently, disproportionately high. In 2021 an additional estimated 41,615 bicyclists were injured. Over the last 5 years, estimated injury-only crashes averaged about 45,400 yearly.



The absolute number of crashes, without a measure of the volume of people riding bicycles, is an imperfect indicator and does not tell the whole story of bicycle safety. For example, while the number of crashes is higher in urban areas, this does not mean that the rate of crashes is high in comparison to the rate in other contexts. An analysis of crash rates that used National Household Travel Survey (NHTS) data to calculate fatality rates based on the estimated number of people riding bicycles identified the most dangerous regions for walking and bicycling and the safest regions for walking and bicycling (Schneider et al., 2017). The study authors concluded that many of the safest regions had central cities that have been nationally recognized for investing in bicycle and pedestrian infrastructure and programs.

Bicycling Trends

People travel by bicycle to work, to school, for social and family/caretaking trips, and for recreation, among other reasons. The growth in use of bicycles, and electric bicycles in particular during the COVID-19 pandemic has led to sharp increases in bicycling in some communities, and has resulted in expanded ranges of trip purposes, abilities, and experience of people riding bicycles on public roadways.

Buehler and Pucher (2021) reviewed available data to assess the impacts of the COVID-19 pandemic on the use of bicycles. Travel monitoring sources such as Streetlight and EcoCounter report an estimated 12% to 16% growth of bicycle use in 2020. Bicycle traffic on many off-road, recreational multi-use trails and greenways grew significantly. However, some locations saw a reduction in bicycling as commuting to work was reduced or where general lockdowns were in place.

Longer-term trends indicate only slight changes in bicycling rates in the United States. According to the National Household Travel Survey, from 2001 to 2017 the overall percentage point change in cycling generally was negligible. Significant shifts in who is bicycling has shifted, however. There was an increase among adults 25 to 64, those with higher educational attainment, and among those living in households without a car or in neighborhoods with higher residential density. There was a decline in cycling rates for children and adolescents 5 to 15, for those living in rural areas or areas with lower population densities, and among those in households with higher car ownership (Buehler et al., 2020).

Estimates from the American Community Survey, conducted by the U.S. Census Bureau, suggest that the number of U.S. workers of all ages who travel to work by bicycle increased from 0.4% of workers in 2000 to an average of 0.6% of workers for the 2008-to-2012 period (McKenzie, 2014). The share of workers that "usually traveled to work" by bicycle increased at a faster rate than any other mode of travel. In 2016 the number of workers who biked to work remained at 0.6% of all surveyed workers (McKenzie et al., 2017). Current American Community Survey data shows that the percentage mode share of people bicycling to work declined to 0.5% by 2020 (U.S. Census Bureau, 2020).

The topic of bicycling volume (sometimes generally referred to as mode share or exposure) is intertwined with safety. The complex and non-linear relationship between crashes and volume highlights the fact that the absolute number of crashes is often an imperfect indicator of danger for people on bicycles, and thus, why strategies focused on increasing mode share and improving safety are often considered in tandem (i.e., Safe Routes to School programs).

The phrase "safety in numbers" describes the phenomenon whereby the risk to an individual bicyclist of being seriously injured decreases as the number of people bicycling increases. A recent meta-analysis of motorist-pedestrian or motorist-bicyclist injury crashes estimated that there is safety in numbers for both pedestrians and bicyclists (Elvik & Bjørnskau, 2017). By their estimate, if the number of pedestrians or bicyclists doubles (100% increase), the increase in crashes is expected to be 41%. A subsequent expanded meta-analysis determined that the safety in numbers effect may be stronger for pedestrians than bicyclists, and the safety benefit may stem from overall increases in numbers of bicyclists and improvements in motorist-bicyclist interactions at the population level (Elvik & Goel, 2019). However, a recent literature review of studies on the subject of "safety in numbers" found that despite numerous efforts to quantify it, the exact mechanism that produces this effect is unclear (Kehoe et al., 2022).

A focus on systematically improving infrastructure in tandem with road users' safe behaviors is important to increasing population-level safety (measured as a reduction in population-wide fatalities and injuries) and people on bicycles or bicycling mode share. Safety improvements with increases in bicycling will reduce individual risk. A recent resource titled Understanding and Using New Pedestrian

and Bicyclist Fatalities is focused on education strategies around newer and innovative bicycle facilities (Jackson et al., 2022).

Quick Facts

1. Estimated bicyclist injuries in 2025: 45,000 (NHTSA Traffic Safety Facts)
2. On average Nearly 1,000 bicyclists die and **over 130,000 are injured** in crashes that occur on roads in the United States every year.
3. The total cost of bicyclist injury and death is over $4 billion per year (National Safety Council).
4. 6% of Americans between the ages of 18-29 ride their bicycles daily, 9% between the ages of 30-36, 7% between 40-49, and 3% between 50-64/

According to the National Highway Traffic Safety Administration (NHTSA), their primary recommendation to avoid accidents and reduce fatalities is the use of a helmet. They have no additional recommendations for the safety of cyclists, children, or adults. This supports the need for BykeCam as a needed safety feature to be used in the prevention of bicycle related injuries or deaths.

Current Cycle Trends and Predictions

As a market research analyst, it's evident that Trek e-bike stands out as the most popular brand in the United States of America, reflecting the strong consumer preference for electric bicycles.

Riding a bicycle in the European Union yields substantial economic benefits, amounting to approximately 150 million euros, underscoring the significance of cycling as a mode of transportation.

By 2029, the global cycling industry is slated to be worth USD 127 billion.

China is the world's biggest producer of bikes. In 2020 the country produced 116 million bikes.

The bicycle manufacturing industry churns out a staggering 364,000 bicycles per day, highlighting the high demand for bicycles worldwide.

American consumers exhibit a significant investment in bicycle accessories and equipment, with an average annual expenditure totaling approximately 903 million USD.

The global sales of bicycles reached 60 billion USD in 2021, with a projected CAGR of 8% expected to propel the market value to 138 billion USD by 2032, signaling substantial growth opportunities within the industry.

The projected global sales of e-bikes in 2023 are estimated to reach 40.3 million units, showcasing the rising popularity of electric bicycles in the global market.

The Asian bicycle industry is forecasted to reach a market value of 23.75 billion USD in 2023, demonstrating the region's significant contribution to the global bicycle market.

In the United States of America, 870,000 individuals commute to work by bicycle, accounting for approximately 0.6% of the overall population, indicating the growing adoption of cycling as a means of transportation.

Female representation in cycling is noteworthy, with an average ratio of one female rider for every three male riders, reflecting the diverse demographics of bicycle enthusiasts.

The revenue of the bicycle industry is estimated to be around 6.9 billion USD, highlighting the economic significance of the industry on a global scale.

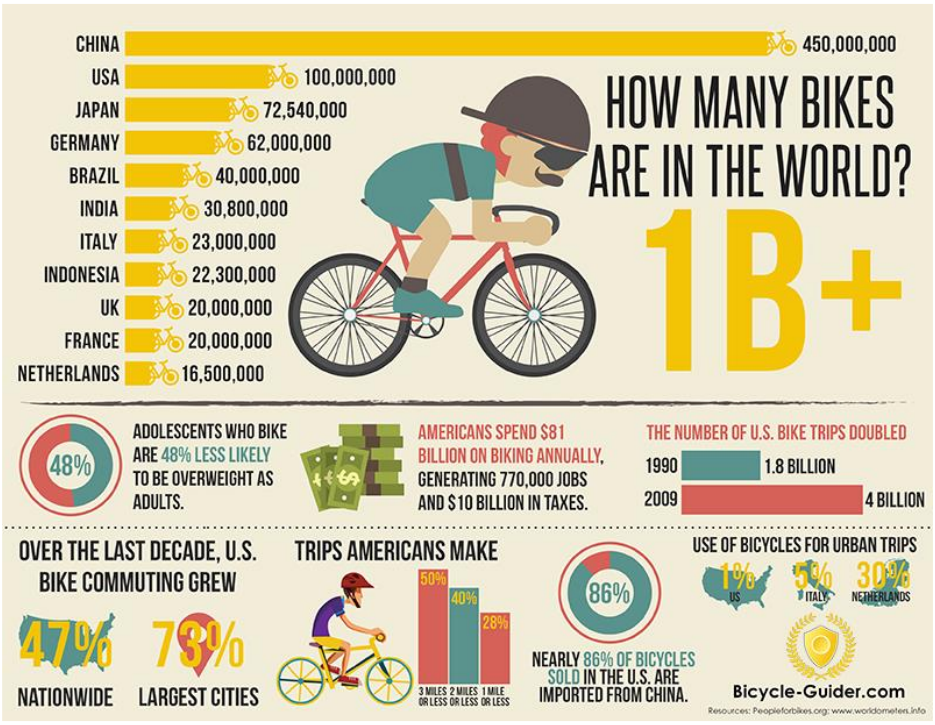
Ebike market sales experienced an impressive growth rate of 240% between 2020 and 2021, showcasing the surging demand for electric bicycles.

The sale of bicycles in 2022 reached between 17-20 million units, indicating sustained consumer interest and market demand for bicycles.

The United States bike industry is projected to witness a healthy CAGR of 6.12% from 2022 to 2027, underlining the industry's steady growth trajectory in the coming years.

Market Opportunity

There is an estimate of one billion bicycles currently used in the world. The largest percentage is approximately 450,000 in China, followed by the United States at 100,000. There are 364,000 bicycles produced daily and approximately 47,770 sold daily. Every 19th person in the world buys a bicycle and the production output for bicycles is 2x the number for cars.



Construction and Innovation

BYKECAM has two components a front monitor and rear camera. Both components can be put into the tool and molded at the same time. A steel tool (recommended) is good for 100,000 cycles with a minimum of 10,000 cycles guaranteed. Additional considerations for construction include aluminum v. steel, plastic resin, flame retardant requirements, UV stabilization, surface finish, and colors.

BYKE CAM
(Specs)

Monitor Module Overall Dimensions
2.8" x 2.8" x 2.3"

Screen Overall Viewing Dimensions
2" x 3.8"

Lithium Battery Capacity between charge
10 Hours (Max)

Monitor Module weight /w Lithium Battery
9oz

Color Camera Module weight
2.9oz

Color Camera Module
Viewing Angle 180 Degrees

The Technology Innovation (Phase 1)

Extreme care and caution have been created to ensure the safety of adults and children. Safety is at the forefront of all production initiatives. Phase I testing includes evaluation of the product for safety and reliability of all components.

The Technical Objectives and Challenges

The initial challenge of this invention will be in creating a prototype that can be tested in a retail setting to ensure effectiveness. Additional challenges would include mass production of the equipment, development of a model that meets NHTSA requirements and user education for children and adults.

Business Model

Customer Segments	Customers are youth and adults, ages 5-90+, avid bicyclists recreationally and professionally.
Value Proposition	We provide an innovative safety solution that will reduce risk of injury or fatality during bike riding events.
Channels	We will reach our customers via social media, online advertising, print and mail. We anticipate social media marketing will be most effective for our initial sales platforms.
Customer Relationships	Our customers want a relationship that allows purchase of a product that improves safety and security. This relationship will provide comfort during ride share with motorized vehicle and pedestrian traffic.
Revenue Streams	Customers will be willing to pay the advertised price per unit. Customers currently pay $0.00 as there is no comparative product on the market. As the product scales contributions to review are projected to be as follows: Recreational cyclists – 55%, Professional cyclists – 30%, motor cyclists – 15%
Key Resources	Resources include product packaging, plastic casings, electronics, batteries, wiring, harness, chips, and motherboard.
Key Activities	Activities include online – direct to consumer – sales, shipping, packaging, and distribution.
Key Relationships	Relationships include R&D, eCommerce, manufacturing, express shipping, fulfillment, online sales and marketing, contract labor.
Cost Structure	The most important costs are related to manufacturing and equipment of product parts, shipping, and delivery. Electronic parts manufacturing and fulfillment are the most significant resources and activities.

Estimated Production Costs

1.	Rear Camera Molds	$14,935.00
2.	Front Monitor Molds	13,275.00
3.	Bykecam Front Mount Accessory	14,888.00
4.	Bykecam Rear Mount Accessory	15,883.88
5.	Packaging	10,018.12
6.	**Total**	**$69,000.00**

Summary of Production

- Production Equipment – 1+1 Cavity aluminum (UMI) Unit Mold Inserts, 1+1 Cavity Aluminum Standalone Mold, ABS Black UV-Stabilized Resin.
- Support Equipment Front
- Support Equipment Rear
- Signage and marketing – primary cost variance drivers, main signage, brand & logo design launch, marketing, desired level of passer visibility
- eCommerce – creation of online sales platform, warehousing (inventory) and packaging (branding), Merchant sales system with PCI compliant protocols.

Packaging and Distribution

BYKECAM parts will be manufactured in China and shipped to the United States for assembly. Packaging will be completed in the United States. Distribution will be direct to consumer via the www.indcusa.com. Warehousing and fulfillment will be managed by IDC.

Suggested Product Pricing and Sales

Pricing Per Unit

Manufacturing	Wholesale	Online (DTC)	Suggested Retail
25.34	99.80	129.99	199.99

***Suggested retail price is based on average markup of 300%.**

Projected Annual Sales Forecast – at 100,000 units (sales in millions)

Estimated Wholesale	Estimated Online (DTC)	Estimated Retail
9.9	19.9	23.9

Click on each link to view manufacturing pricing per component.

24Copy of BYKE_CAM_FRONT.xlsx

24Copy of BYKE_CAM_REAR.xlsx

Note: Parts for Bykecam are manufactured in China. Packaging is done in California and Pakistan.

Product Summary

BYKECAM is a highly scalable machine that can be adapted to various areas of the recreational vehicle marketplace. This product will have global influence as a proactive solution in safety concerns for cyclists and pedestrians.

Investment Opportunities

IDC is offering the following investment opportunities:

1. Up to 20% equity share in the business. Current valuation is $1.29M.
2. Up to 10% equity share in the business plus $1.00 per unit sold up to $500K.
3. Cash loan of $500k, at 4.88%.
4. Membership equity share of five percent.

Why IDC Needs Investors

Innovative Designs and Concepts (IDC) is seeking investors who regard the vision of this company and are willing to provide resources to assist in building our mission. These investment opportunities will provide the following:

1. **Reduced financial burden**. IDC is looking for investors to assist in the procurement of manufacturing equipment and materials. Injection molds will enable IDC to increase inventory and meet the growing demand for BykeCam products.

2. **Reduced pressure to repay**. Conventional bank loans are an option; however, IDC is looking for partnerships to work with the business during stages of growth and development.

3. **Valuable expertise**. Business relationships provide professional knowledge needed to increase market share and product development. This knowledge will also assist in limiting the number of mistakes which lead to profit loss.

4. **Networking and connections**. IDC is building a global brand; therefore, connections in additional markets is key to our business model. These connections are needed for emerging markets and key collaborations.

5. **Increase moral and inspiration**. Accomplishments and achievements increase the morale of the company and culture. Our successes inspire our teams to contribute at a high level to product efficiency and sustainability of our brand.

6. **Improves stakeholder confidence**. Our investors, clients, customers, and business communities increase their confidence in our company. They see good decision-making, commitment to customer service, and establishment of a brand that is reputable and reliable.

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