EYEDOG

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1. Executive Summary

1.1 Pitch

EyeDog is a laser-based ADAS system that can identify objects from long distance and save lives by warning the driver of an incoming danger during road overtakes, train collisions and other dangerous road situations that cannot be prevented using current technologies.

1.2 Problem

Road overtake is one of the main causes of road accidents and fatalities. According to a Nottingham University research[1]:

- 35% hit a vehicle turning right as the overtaking vehicle was attempting to pass
- 16% hit a vehicle travelling in the opposite direction
- 8% lost control during whilst overtaking or returning to the nearside lane
- 6% hit a vehicle that was turning or crossing at a junction
- 5% resulted from evasive action taken by a driver when attempting to avoid someone else's risky overtaking maneuver.

Many ADAS solutions available in the market are unable to effectively address this issue since **they do not have the ability to identify objects from over several dozen meters**, a distance that is not enough to warn of a possible collision. Same problem applies to the railroad industry where many collisions occur due to insufficient stoppage time.

1.3 Solution

EyeDog is a revolutionary laser-based ADAS system that identifies objects on roads and railroads from up to 1.2km when applied to vehicles and up to 6km when applied to trains. The technology is based on a camera transceiver that uses a unique high resolution CMOS camera with high spectral response in the Near-infrared.

EyeDog works as follows:

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[1] http://www.ijettjournal.org/2015/volume-28/number-5/IJETT-V28P243.pdf
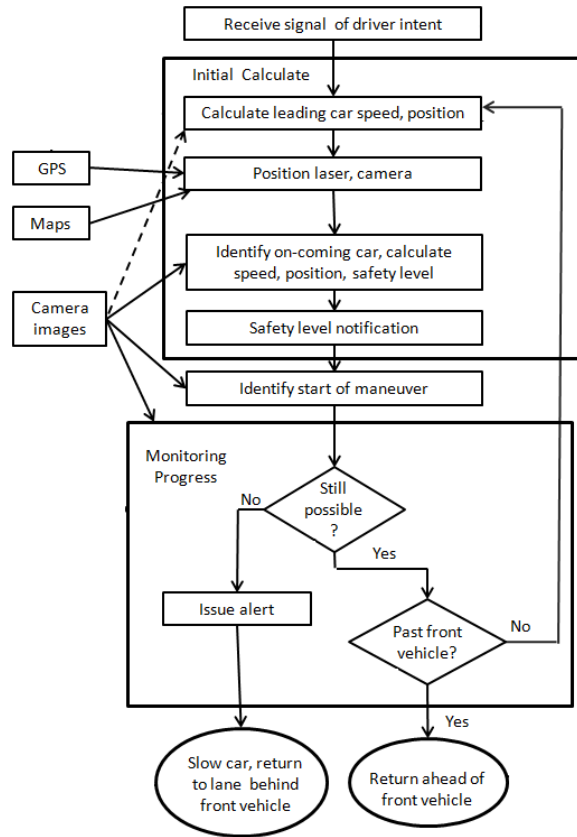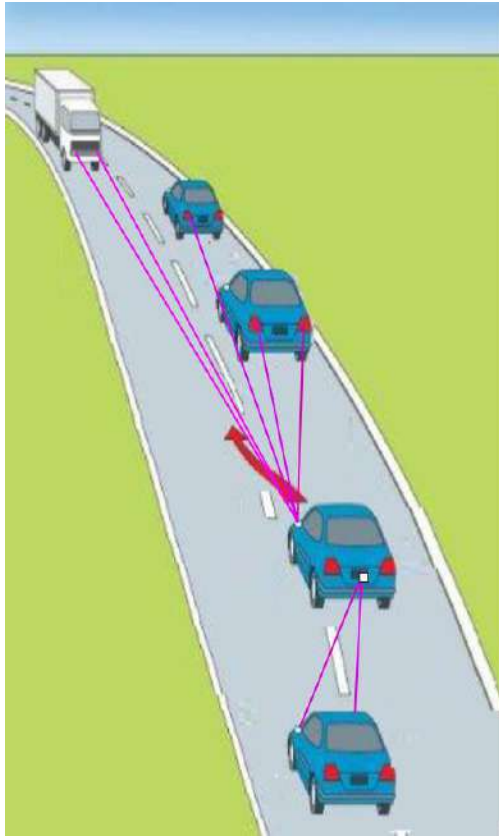
1.4 Market

EyeDog operates in a constantly growing environment that is associated with the ADAS market, autonomous vehicles market and the global smart railways market.

- **$14B** – ADAS market
- **19%** - CAGR of the ADAS market
- **56M** ADAS units are expected to be sold by OEM in 2020
- **$126.8B** – autonomous vehicle market by 2027
- **76M** self-driving cars will be on the roads worldwide by 2035.
- **$17B** - the global smart railways market size

1.5 Business Model

EyeDog's technology can be implemented in both road vehicles and locomotives. EyeDog's goal is to establish strategic partnership with global car and train manufacturers (OEM/ODM), as well as selling the system as a standalone product to the end consumer through wholesale and direct channels.

Channel	Transfer Price	COGS
Wholesale	$400	$267
Direct Sales	$800	
Train(OEM) Operators/Locomotives	$3758	$835

1.6 Competitive Edge

In the automotive market, EyeDog's ability to detect frontal vehicles from long distance makes it the only solution available in the market that can effectively warn the driver in case of a dangerous overtake and prevent fatal accidents, being able to identify moving objects and threats over 1,000 meters of distance.

Within the train industry, EyeDog's competitive edge is as follows:

	EyeDog	Rail Vision	Mors Smitt A Wabtec Company
Type	Laser	Image processing technology	Image processing technology
Detection Range	Up 6km	Up 2km	N/A
OSS	Yes	Yes	Yes
TSS	Yes	Yes	Yes
AWS	Yes	Yes	Yes
Weather, Day & Night	Works in all types of weather, Day & Night	Works in all types of weather, Day & Night	N/A
Installation procedures	Simple	Complex	Complex
Price	$	$$$	$$$

1.7 Investment Sought

EyeDog is seeking **$5M** in two installments that will be used to:

- Finalize the development of EyeDog.

- Tooling for the automotive version of EyeDog

- 24 months of R&D

1.8 Team

Mordechai Bar-Tal

Co-Founder & CEO

- Awarded the Israel Prize laureate for security
- Senior executive at Elbit Electro-optics and head of the electro-optic program

- Managing budgets and sales valued at $250M
- Project manager and senior engineer in several classified security projects for the IDF, including the Merkava Tank

Reuven Nanikashvili

Co-Founder & CTO

- CEO and VP R&D of an Israeli company that specializes in executing large-scale projects, technology consultation and medical devices
- CEO & CTO at Card Guard, an international company that develops and manufactures medical device in the field of Tele-Medicine
- Vice president of development at Orpak Industries, an international company for fleet management and automatic refueling
- Project and R&D manager at Elbit Systems

2. Product & Technology

2.1 Problems Overview

Road overtake is one of the main causes of road accidents and fatalities. According to a Nottingham University research[2]:

- 35% hit a vehicle turning right as the overtaking vehicle was attempting to pass
- 16% hit a vehicle travelling in the opposite direction
- 8% lost control during whilst overtaking or returning to the nearside lane
- 6% hit a vehicle that was turning or crossing at a junction
- 5% resulted from evasive action taken by a driver when attempting to avoid someone else's risky overtaking maneuver.

Many ADAS solutions available in the market cannot effectively address this issue since they do not have the ability to identify objects from over several dozen meters, a distance that is not enough to warn of a possible collision.

This problem also affects the railroad industry where many collisions occur due to insufficient stoppage time. A moving train needs to activate breaks at least 2.5KM from the moment it identifies a standing object and 5.5KM for a moving train in order to safely stop before it hits the object. In Europe, in 2016, 1787[3] significant rail accidents were reported and 10,972[4] accidents in the US

The main reason behind train accidents was the human factor, more specifically: human error[5]. Human error is followed by mechanic failure such as track or equipment malfunction, faulty movement of trains through a grade crossing, breaches on railway tracks and other types of train operator errors.

2.2 Solution/Technology

EyeDog is a revolutionary laser-based ADAS system that identifies objects on roads and railroads from up to 6km. The technology is based on a camera transceiver that uses a unique high resolution CMOS camera with high spectral response in the Near-infrared. It

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[2] http://www.ijettjournal.org/2015/volume-28/number-5/IJETT-V28P243.pdf
3 http://ec.europa.eu/eurostat/statistics-explained/index.php/Rail_accident_fatalities_in_the_EU
4 https://www.statista.com/statistics/204569/rail-accidents-in-the-us/
[5] https://www.wieandlaw.com/most-common-causes-train-accidents/

includes optical ZOOM and an interference filter compatible with a narrow spectrum, wide angle optics divergence laser.

<PICTURES HERE>

The laser beam illuminates the road and reflection from car headlights, license plates, road markers or retro reflectors on trine and railway. The reflection is received into the camera and creates a series of pulses that are processed by an innovative algorithm: Pulse-Laser synchronized with the camera.
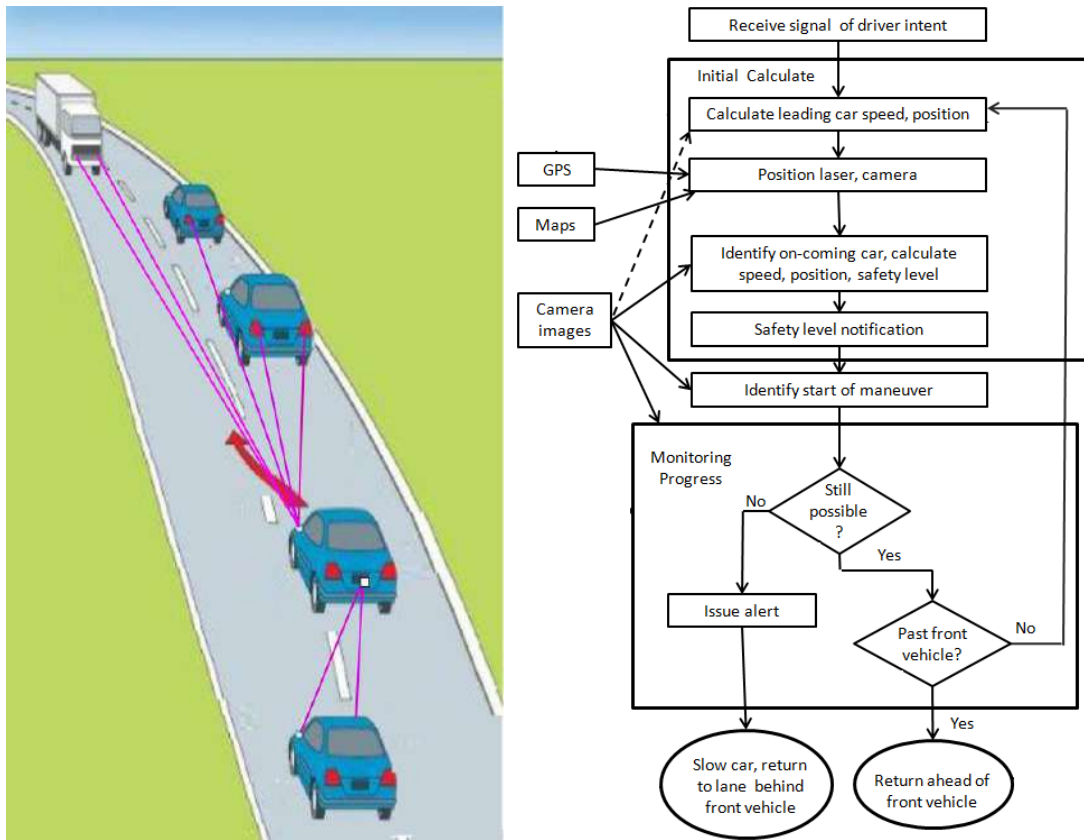
2.3 Implementations

Monitoring of Vehicle Passing Maneuver System

EyeDog's technology can be implemented as an ADAS that warns overtaking drivers when trying to make a dangerous overtake on the road. The system calculates factors such as distance from on-coming cars, speed and location which are calculated and assessed based on the chances of making a safe overtake.

The following scheme explains how the technology works:

- Assistance in making overtakes. Identifies vehicles on the opposite lane from up to 1.2 km
- Warns of front and rear collisions due to failure to keep distance
- Identifies standing vehicles from up to 1.2km that are stuck on the road and warns from frontal collision
- Alerts when deviating from the route
- Alerts when speeding above the speed limit

Autonomous Vehicles

Considered as the future of transportation, autonomous vehicles that are scheduled to step on the roads in the next few years will be equipped with highly advanced technological equipment designed to safely drive in a highly unexpected and complicated environment. Nevertheless, the technology used today in autonomous vehicles is not able to accurately assess the distance from vehicles that are located more than 1,000 meters away and cannot warn the driver of a frontal collision while making an overtake.

Using EyeDog's technology, autonomous cars will be able to safely perform overtake, as well as adding additional layer of security for many other features, including distance and speed assessment.

Railway Collision Avoidance System Prevention (RCAS)

EyeDog Technology can be implemented in trains and junctions as a mean to prevent collisions with incoming trains or obstacles on the rail. It uses laser beam to identify objects from distance and warn the train driver if there is a probability for collision.

Retro reflectors

Camera transceiver

RETRO REFLECTORS ON TRAIN

GPS

Vehicle Cameras

Train Camera

Train Camera

RETRO REFLECTORS WITH SHUTTERS

RETRO REFLECTORS ON GRAUND
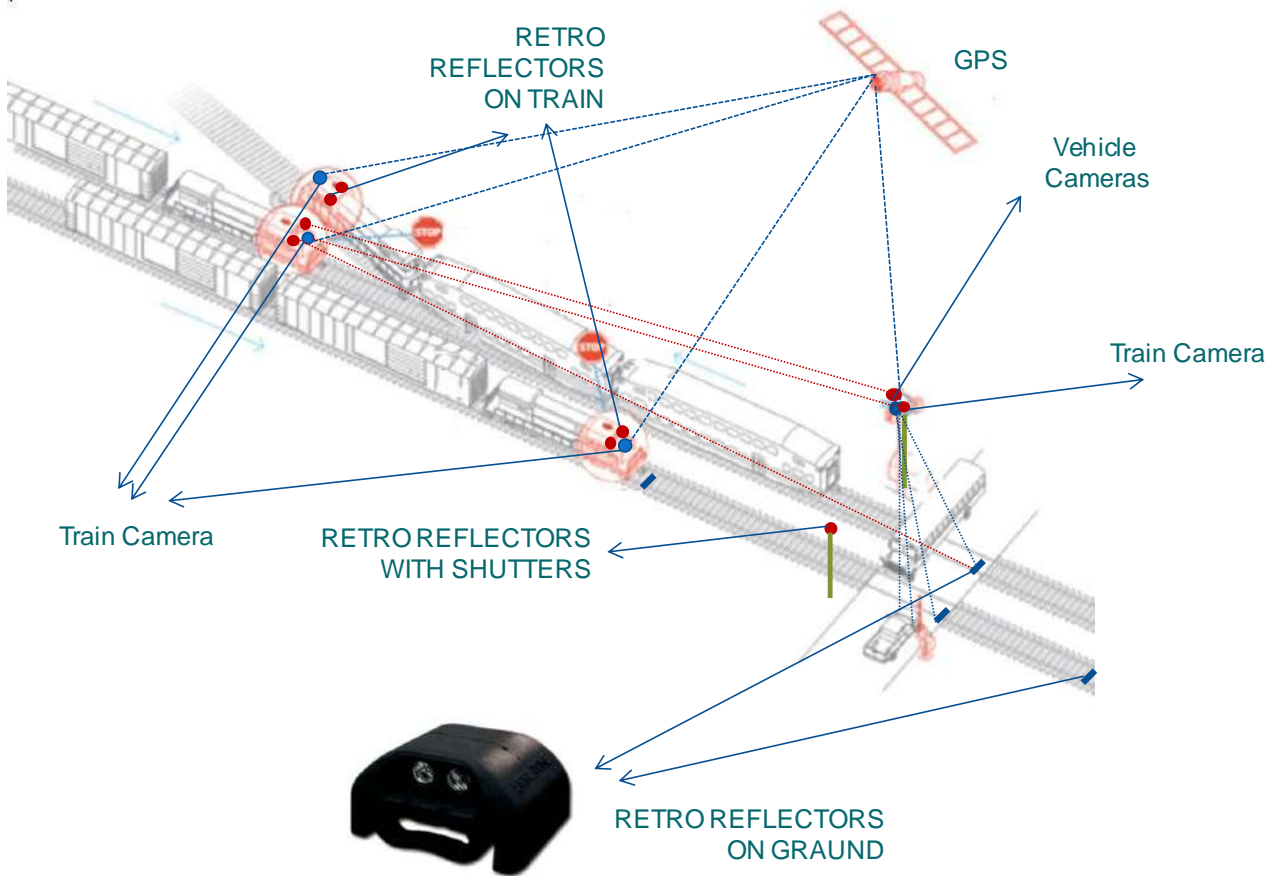
It provides the train's driver with the following features:

✓ Direct conflict prevention capability of the trains.

✓ The capability to prevent accidents between two trains on a track with a junction.

✓ Identifies stuck cars on railway crossings.

✓ The ability to look for the driver on a foreign object on the railway

- ✓ Covers 120 degrees
- ✓ Identifies trains and objects from up to 6,000 meters away
- ✓ Calculates speed and distance of objects using proprietary algorithms

2.4 Intellectual Property

EyeDog has filed 2 patent applications in the US after conducting a thorough patent research. Additional applications in other leading countries will be filed during 2018.

2.5 Status

- Received Keren Tnufa
- POC - Advanced prototype that demonstrates the technology. Was tested in the field. See attached for footage from the tests
- Two patents were filed – pending

2.6 Timeline

Timeline		ARO
1	Systems Preliminary Design	3
2	Preliminary Design Review	3
3	System Detailing Design	8
4	Developing Generic Sensors	8
5	Critical Design Review	8
6	Prototypes Production	12
7	Generic Sensors Testing	12
8	Prototypes Assembly	14
9	Systems UX/UI	14
10	Systems Integration	17
11	Systems PILOT	20
12	Production Readiness Revenue	24

3. Market Analysis

3.1 Market Highlights

- **$14B** – ADAS market
- **19%** - CAGR of the ADAS market
- **56M** ADAS units are expected to be sold by OEM in 2020
- **$126.8B** – autonomous vehicle market by 2027
- **76M** self-driving cars will be on the roads worldwide by 2035.
- **$17B** - the global smart railways market size

3.2 ADAS Market

The Advance Driver Assistance System ("**ADAS**") market is currently valued at $14B[67] and is expected to reach $67B by 2025 at a CAGR of 19%.

Semiconductor and sensor revenue for ADAS applications[8]

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[6] https://www.grandviewresearch.com/press-release/global-advanced-driver-assistance-systems-adas-market
[7] https://www.abiresearch.com/webinars/adas-and-active-safety/
[8] https://www.pddnet.com/data-focus/2016/01/diving-driverless-vehicle-tech-part-2
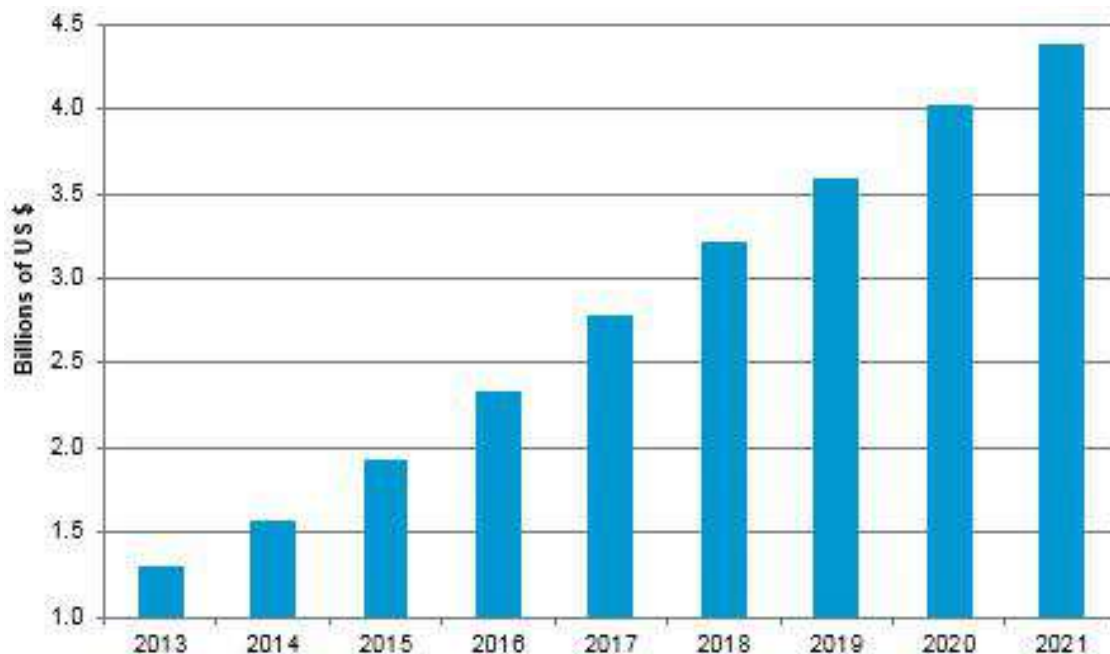
The most relevant ADAS technologies dominating the market are night vision, adaptive cruise control and driver monitoring. As represented in the chart[9], researches expect the greatest revenue growth to come from Night Vision, Vulnerable User, and Adaptive Cruise Control.

ADAS Overall Value by System Type
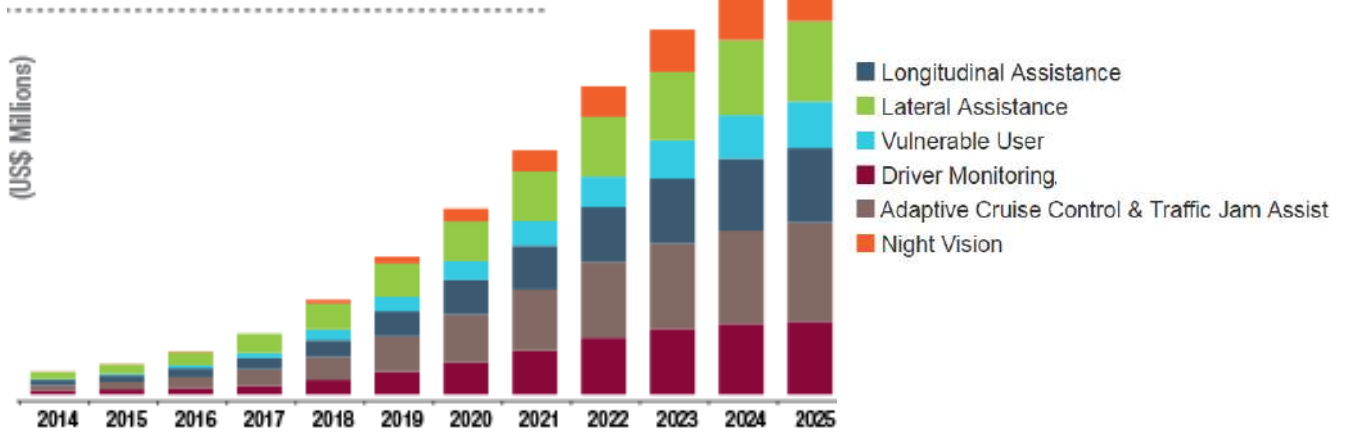**World Market, Forecast: 2014 to 2025**

Legend:
- Longitudinal Assistance
- Lateral Assistance
- Vulnerable User
- Driver Monitoring
- Adaptive Cruise Control & Traffic Jam Assist
- Night Vision

Unit-wise, the total number of ADAS units that are expected to be shipped by OEM in 2020 will go up to 56M units[10].

Global ADAS unit shipments in 2020, by OEM (In Millions)

OEM	Shipments in million units
General Motors Group	15.5
Ford Group	14.1
Fiat Chrysler Automobiles Group	8.9
Hyundai Group	6.8
VW Group	5.8
Daimler Group	2.6
BMW Group	2.2
Geely Group	0.4

[9] https://www.abiresearch.com/webinars/adas-and-active-safety/
[10] https://www.pddnet.com/data-focus/2016/01/diving-driverless-vehicle-tech-part-2
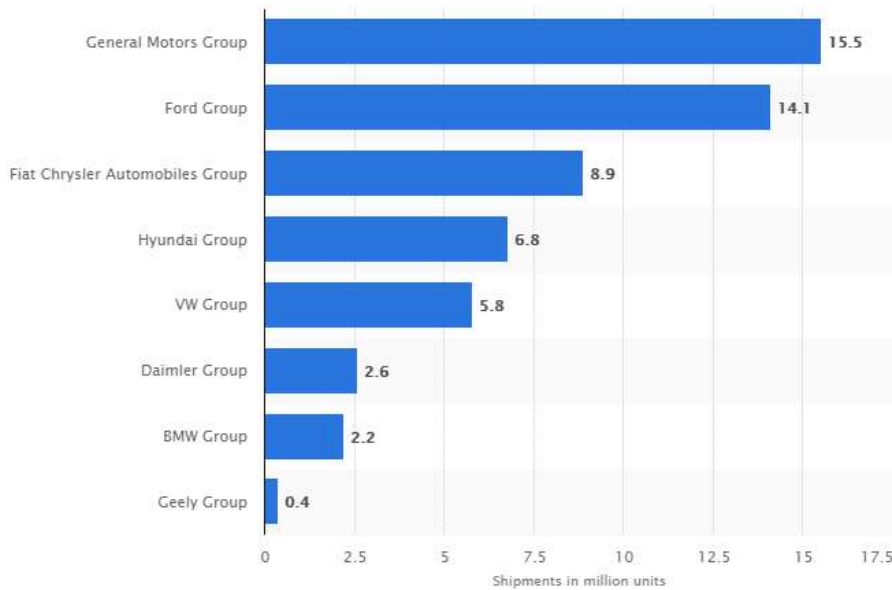
3.3 Autonomous Vehicles

Although autonomous vehicles are not yet commercially available in the market, this innovation is expected to take the car industry by storm, revolutionizing the segment in the years to come.

The global autonomous vehicular market will value up to USD 126.8 billion by 2027. Many companies announce a self-driving car in the next years, Audi announced its first autonomous car in 2020, Ford in 2021, Volkswagen in 2019 and the first autonomous car from Toyota will be available in 2020[11].

Geographically speaking, the market expands over the whole world. Its market can be segmented into Europe, the US, Asia Pacific and the Rest of the World.

According to the Information Handling Services **(IHS)** next to all the other regions shown below, the US will be an early leader in developing autonomous vehicle technology. Research shows that 76M self-driving cars will be on the roads worldwide by 2035 (21M will be sold **in 2035** and nearly 76M sold **through** 2035)[12,13].

3.4 Global Smart Railways Market

The improvement of the safety is one of the major goals when applying IIoT in railway environments. For instance, an accurate on-board positioning system is essential in order to determine the position of other trains and then avoid collisions[14], perform safer operations in close proximity and optimize the use of the tracks. Another safety application is related to the measurement and control of the speed[15].

Smart Railway Market is expected to continue growing at a fast pace, with an expected CAGR of 14.83% for the 2018-2023, with the market reaching $ 27.63 Billion from 2017s $12.05 Billion[16].

[11] http://www.driverless-future.com/?page_id=384
[12] https://technology.ihs.com/579470/autonomous-vehicle-sales-set-to-reach-21-million-globally-by-2035-ihs-says
[13] https://www.variantmarketresearch.com/report-categories/automotive/self-driving-car-market
[14] https://www.smartrailworld.com/it-and-wifi/expert-view-the-smart-railway.-how-operators-are-using-digital-tech-in-the-fight-for-customers
[15] https://www.ncbi.nlm.nih.gov/pubmed/28635672
[16] https://www.mordorintelligence.com/industry-reports/smart-railways-market

The Smart Railways market can be segmented into three microsegments: Solutions comprises 44.8% of the market, followed by Devices (29.4%) and Services (25.8%). EyeDogs main segment, devices, is expected to reach **$8.12** Billion by 2023.

Global Smart Railways Market Share (%) – By Offering, 2021[17]

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[17] https://www.researchnester.com/reports/global-smart-railways-market-analysis-opportunity-outlook-2021/142
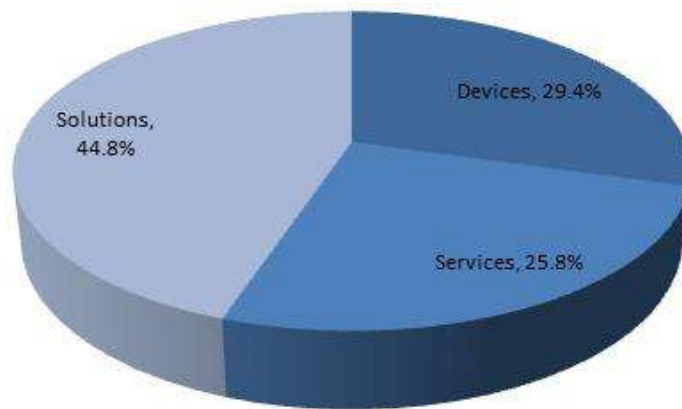
3.5 SWOT Analysis

Strengths

- Significant competitive edge with a value that dramatically increases road safety
- Strong portfolio of patents
- Focused product offering

Weaknesses

- Requires professional installation service

Opportunities

- Both EyeDog's main markets (ADAS & autonomous vehicles) are expected to dramatically increase in the next several years
- High chances to be adopted by leading players in the industry, specifically OEMs
- Government mandating of safety technology

Threats

- Highly competitive market with many different solutions such as RADAR, LIDAR
- Some OEMs operate as competitors by developing their own ADAS

4. Competitive Landscape

4.1 Competitive Technologies - Vehicles

EyeDog's technology is competing against two main types of technologies:

Radar	Image Processing
DELPHI Automotive Systems	MOBILEYE®
DENSO	Autoliv
Valeo	Continental
QUALCOMM®	TOSHIBA

In order to provide a complete ADAS solution for drivers, practical implementations are needed for the driving maneuver of entering a lane of opposing traffic in order to overtake a vehicle on a two-lane road

Both technologies are capable of identifying objects in close proximity but lack the ability to identify frontal and rear objects from over 1,000 meters since.

Their inability to identify frontal and rear objects, as well as inability to identify incoming trains from long distance makes ADAS and RCAS products that are based on these technologies ineffective in preventing road overtaking accidents.

4.2 Competitive Edge - Vehicles

EyeDog's ability to detect frontal vehicles from long distance makes it the only solution available in the market that can effectively warn the driver in case of a dangerous overtake and prevent fatal accidents, being able to identify moving objects and threats over 1,000 meters of distance.

4.3 Competitive Technologies - Trains

EyeDog is the only solution in the market to employ the use of lasers technology for anti-collision purposes instead of image processing-based technologies. Laser technology has the following advantages over image processing:

1. **Safety -** Larger range of detection: up to 8KM with laser, compared to just a couple KM while using image processing solutions. This factor is important for the deacceleration process because trains have long stoppage range.
2. **Price –** the costs of laser technology is much lower than image processing technologies.
3. **Implementation –** Simpler to install and maintain compared to image processing technologies

 RailVision

About

RailVision is an Israeli startup that provides solutions for obstacle detection and collision avoidance solutions and operates, using image processing technology[18].

How it works

RailVision comes equipped with three obstacle-detection-cameras; one VIS Camera, one NFV - Thermal camera and one WFV - Thermal camera. That together detects obstacles up to 2 km of distance, which provides a deceleration that breaks the train stalling it 400m before the object.

Main Features

- Detection up to 2 km – does not provide a solution in case of trains collisions, only collision with still objects
- Transmits Alert to Command and Control Center
- Data is store at Big Data – in order to have a better future assessment of obstacles and collusions
- Works in all weathers, Day and Night

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[18] https://www.railvision.io

Mors Smitt

About

Mors Smitt is a French-Dutch company founded in 1898, with two main business activities: Railway Technologies and Industrial Technologies[19].

How it works

TPWS comprises of OSS (Overspeed Sensor System) and TSS (Train Stop System). The OSS system automatically applies the vehicles emergency brakes when the vehicle exceeds the posted speed over an active OSS transmitter. The TSS system automatically applies the vehicles emergency brakes when the vehicle passes an active[20].

Main Features

- Train Stop System (TSS)
- Overspeed Sensor System (OSS)
- Automatic Warning System (AWS)

4.4 Competitive Edge – Trains

	EyeDog	Rail Vision	Mors Smitt A Wabtec Company
Type	Laser	Image processing technology	Image processing technology
Detection Range	Up 6km	Up 2km	N/A
OSS	Yes	Yes	Yes
TSS	Yes	Yes	Yes
AWS	Yes	Yes	Yes
Weather, Day & Night	Works in all types of weather, Day & Night	Works in all types of weather, Day & Night	N/A
Installation procedures	Simple	Complex	Complex
Price	$	$$$	$$$

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[19] http://www.morssmitt.com/about_us.htm
[20] http://www.morssmitt.com/railway/rolling-stock/onboard-systems/tpws-train-protection-and-warning-system-and-aws-automatic-warning-system/

5. Business Model

EyeDog's business model is based on a combination of both B2B and B2C.

5.1. B2B

Automobile industry

EyeDog's goal is to establish strategic partnership with global car manufacturers in order to have its product implemented in cars on the assembly line (OEM). Among the many manufacturers that combine ADAS systems in their cars are GM, Honda, Hyundai, Mazda and more.

Worldwide, **73M** cars were produced in 2017[21].
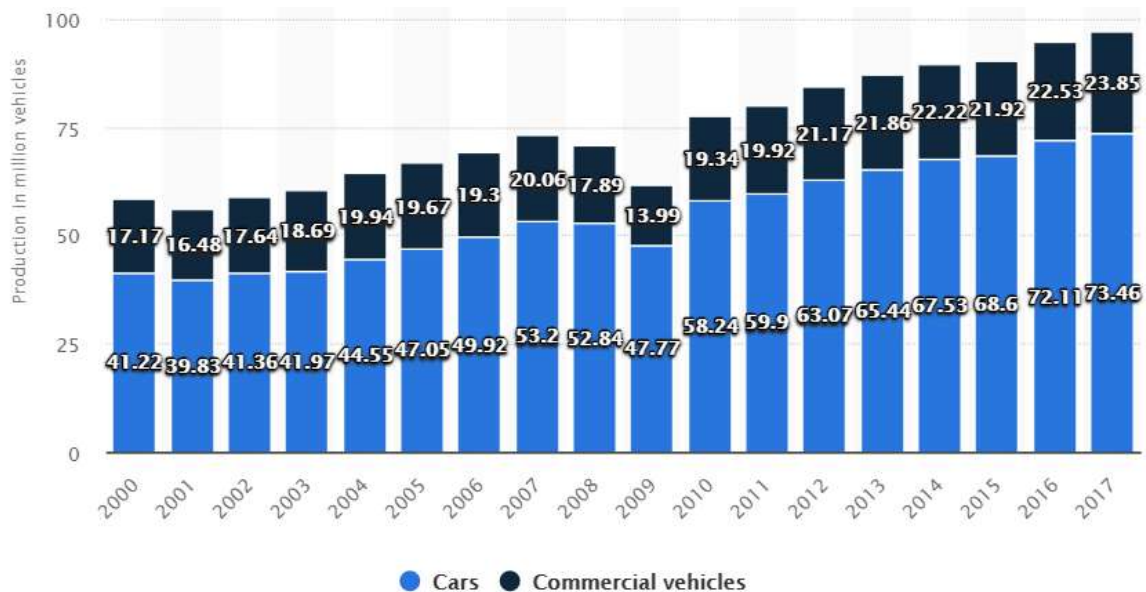
Trains industry

EyeDog's will aim at establishing strategic partnership with global train manufacturers in order to have its product implemented in train on the production[22].

The 10 most important rolling stock manufacturers generate EUR 39 billion in revenues, more than 75% of the global market for new vehicles in 2015[23].

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[21] https://www.statista.com/statistics/262747/worldwide-automobile-production-since-2000/
[22] https://www.sci.de/fileadmin/user_upload/Flyer_Hersteller_Schienenfahrzeuge.pdf

Top 10 manufacturers of rolling stock ranked by new vehicles' revenue 2015 (EUR million)
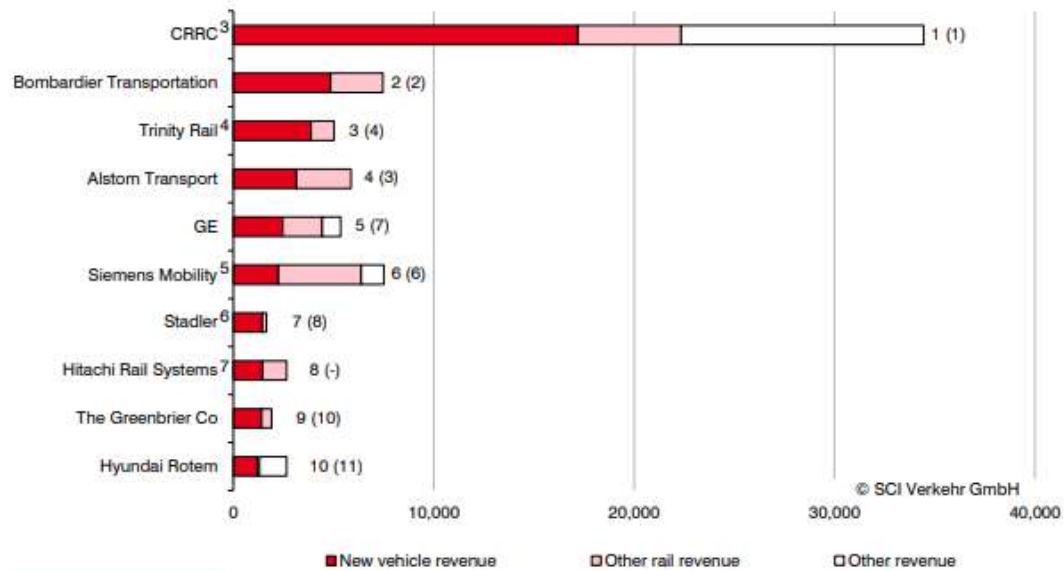
The information regarding the precise number of trains produced each year is not easily available; the best proxy to proper understand the market is by understanding the global annual rolling stock market as shown in the following chart[24].

Global annual rolling stock market volume from 2008 to 2016, by region (in billion U.S. dollars) [25]

[24] http://www.worldwatch.org/system/files/GlobalCompetitiveness-Rail.pdf
[25] https://www.statista.com/statistics/201744/global-annual-rolling-stock-market-volume-since-2008-by-region/
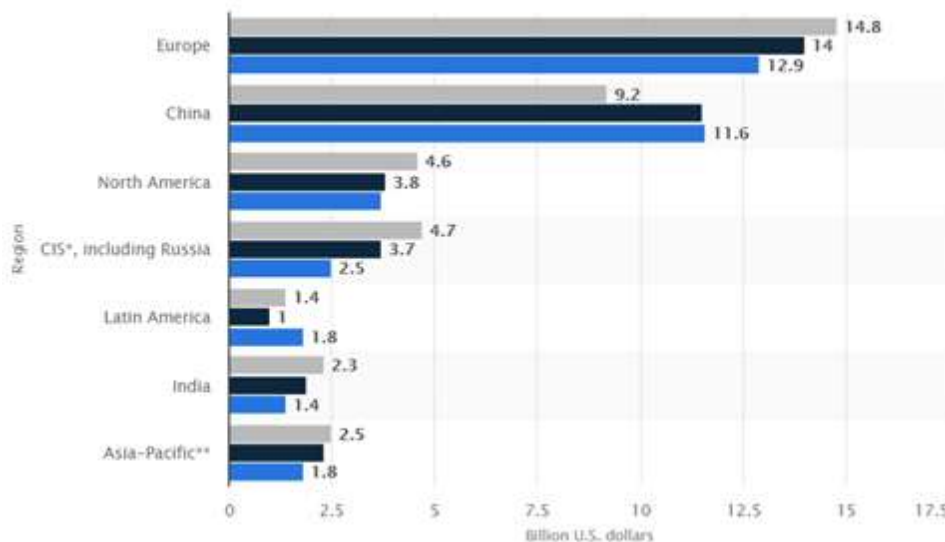
5.2. B2C

EyeDog will be sold as a standalone product to vehicle owners through car workshops, automotive stores and online stores such as Amazon and eBay Motors.

The online automotive aftermarket industry has reached $8.89 billion in 2017, posting a 16% increase over 2016, making it a highly profitable and popular channel for distributing EyeDog.

5.3. Revenue Model

Under the **B2B** model, EyeDog will generate revenues from one or more of the following models:

- **OEM –** selling car manufacturers EyeDog as a complete product which will be implemented in their vehicles/trains while on production line
- **ODM –** selling car/trains manufacturers EyeDog's core technology which will be implemented in their vehicles/trains under their own brand.
- **Wholesale** – selling to workshops, dealerships and distributors that will then sell EyeDog to the end consumer.
- **Train Companies:**
  - → Selling to Major train operators EyeDog as a complete product which will be implemented on existing locomotives.
  - → Selling to train locomotives companies EyeDog's as a complete product which will be implemented on new locomotives.
  - → Selling to national railway / Infrastructure companies EyeDog's core technology.

Under the **B2C** model, EyeDog will be sold to the end consumer via online channels.

Channel	Transfer Price	COGS
Wholesale	$400	$267
Direct Sales	$800	
Train(OEM) Operators/Locomotives	$3758	$835

5.4. Strategic Partnerships

- **Insurance Companies** – Partnering with car insurance agencies as a mean to encourage drivers to install EyeDog in return for a lower premium. In Israel, for example, a new regulation provides drivers with up to 18% discount on the insurance premium if the car has ADAS. Similar models exist in other Western countries where EyeDog will look to expand after its launch

- **Car Workshops** – Since EyeDog requires a professional installation by a certified mechanic, the company will reach out car workshops in order to market its product through workshops. Drivers who visit these workshops will be offered to purchase EyeDog and take advantage of the fact that their car is already in the workshop.

- **Car Dealerships** – Partnering with car dealerships will allow EyeDog to offer its product to customers who purchase cars. For every unit sold by dealerships, they will receive a sales fee.

- **Train Manufactures –** Partnering with train manufactures will allow EyeDog to offer its product its anti-collision system to their clients.

5.5. Value Chain
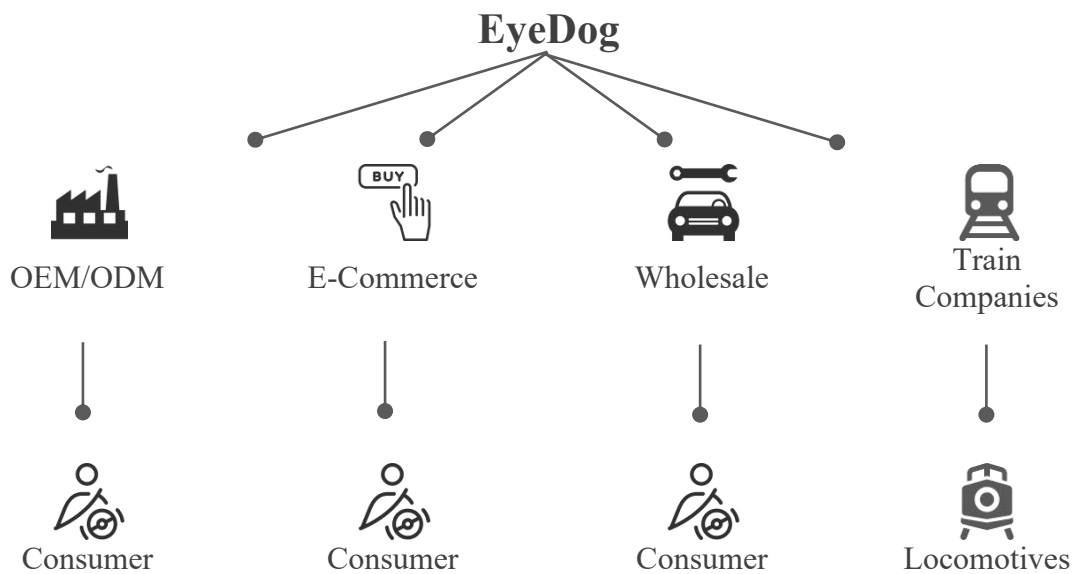
5.6. Sales and Marketing Strategy

a. Branding

EyeDog Marketing campaign will be focusing on creating awareness regarding its accident prevention and anti-collision solutions and about the life saving potential.

b. Strategy

The purpose of the marketing strategy is to create awareness among the partners, consumers, train and cars manufactures, governments and insurance companies. For this purpose, EyeDog will use the following channels:

- **Exhibitions** – Attending global ADAS, autonomous cars and train related exhibitions such as ADAS Sensors[26], Autonomous Vehicle Technology Expo[27], etc. Senior industry personnel tend to participate in such exhibitions in a search for new products which can lead to a fruitful cooperation.

- **Door to Door** & **Roadshow to manufactures** – EyeDog will execute a door to door & roadshow strategy in order to spread awareness regarding EyeDog solutions to B2B sales reps that will be in charge of approaching B2B clients, as described above.

- **Public Relations** – to brand EyeDog as an efficient and life-saving product, it will use PR agencies to promote articles and marketing videos that feature and support EyeDog's functionality. Among the channels that will be used are social media pages, automotive magazines and opinion leaders and exhibition to government authorities.

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[26] http://www.adassensors.com/
[27] http://www.autonomousvehicletechnologyworldexpo.com/en/

6. Financial Plan

EyeDog is seeking **$5M** that will be used to achieve the following milestones:

- Finalize the development of EyeDog.

- Tooling

- 24 months of R&D

Budget breakdown:
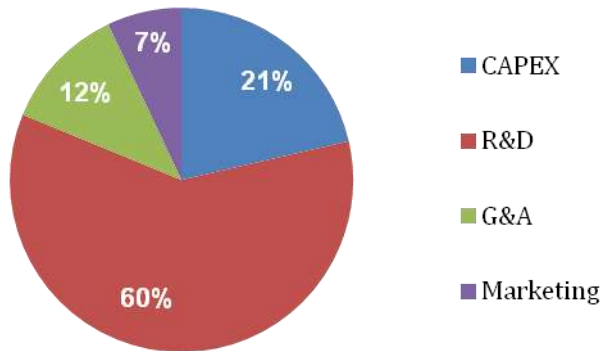
The following financial plan represents the future prediction of the company's operations. The assumptions and projections are supported by the figures and strategies described in the business plan.

CAPEX	Development				
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Hardware & Computers	50,000	30,000	30,000	30,000	30,000
Prototypes	40,000	100,000	100,000	100,000	100,000
Tooling	-	700,000	150,000	150,000	
Office Fixtures	50,000	50,000	20,000	20,000	20,000
Total	**$140,000**	**$880,000**	**$300,000**	**$300,000**	**$150,000**

OPEX	Development				
	Year 1	Year 2	Year 3	Year 4	Year 5
Rent & Utilities	60,000	60,000	66,000	72,000	78,000
Legal & Accounting	12,000	12,000	15,600	19,200	24,000
Bookkeeping	6,000	6,000	7,800	9,600	12,000
Communication & Computing	13,200	13,200	17,160	21,120	26,400
Insurances	12,000	12,000	15,600	19,200	24,000
Financial Expenses	6,000	6,000	7,800	9,600	12,000
IT	6,000	12,000	15,600	19,200	24,000
Software Licenses	9,600	9,600	12,480	15,360	19,200
Hosting	3,600	3,600	3,780	3,960	4,140
Travels	4,000	20,000	50,000	100,000	150,000
Miscellaneous	12,000	12,000	15,600	19,200	24,000
Total	**$144,400**	**$166,400**	**$227,420**	**$308,440**	**$397,740**

Personnel	Development				
	Year 1	Year 2	Year 3	Year 4	Year 5
G&A					
CEO	36,000	144,000	151,200	158,400	165,600
COO	27,000	108,000	113,400	118,800	124,200
CFO	-	96,000	100,800	105,600	110,400
Customer Service	-	42,000	84,000	168,000	252,000
Bookkeeper	-	42,000	44,100	92,400	144,900
Office Manager	9,750	39,000	40,950	85,800	89,700
Marketing & Sales	-	-	-	-	-
CMO	-	96,000	100,800	105,600	110,400
VP Sales	-	96,000	100,800	105,600	110,400
Sales Rep	-	96,000	201,600	264,000	552,000
Online Campaign Manager	-	60,000	63,000	132,000	207,000
R&D	-	-	-	-	-
CTO	132,000	132,000	138,600	145,200	151,800
Team Leader	90,000	240,000	252,000	264,000	414,000
Algorithm Developer	204,000	306,000	321,300	673,200	1,173,000
Engineer	231,000	252,000	264,600	554,400	772,800
Programmer	210,000	336,000	441,000	739,200	966,000
Outsource Services	180,000	240,000	-	120,000	120,000
QA	48,000	96,000	100,800	158,400	220,800
	-	-	-	-	-
Sales Commission			162,715	472,290	1,321,740
Total Expenses	**$1,167,750**	**$2,421,000**	**$2,681,665**	**$4,462,890**	**$7,006,740**

Marketing	Development				
	Year 1	Year 2	Year 3	Year 4	Year 5
Creative & Branding	-	100,000	50,000	50,000	50,000
Media Buying	-	-	500,000	1,000,000	1,500,000
PR	-	-	1,000,000	2,000,000	3,000,000
Total	**$0**	**$100,000**	**$1,550,000**	**$3,050,000**	**$4,550,000**

Revenues	Development		Year 3	Year 4	Year 5
	Year 1	Year 2			
Total Units Sold	-	-	**10,000**	**30,000**	**90,000**
Trains					
Units Sold	-	-	100	600	3,600
Sub Total Revenues	**$0**	**$0**	**$375,750**	**$2,254,500**	**$13,527,000**
Direct Sales					
Units Sold	-	-	9,500	24,000	45,000
Sub Total Revenues	**$0**	**$0**	**$7,600,000**	**$19,200,000**	**$36,000,000**
Wholesale					
Units Sold	-	-	400	5,400	41,400
Sub Total Revenues	**$0**	**$0**	**$160,000**	**$2,160,000**	**$16,560,000**
Total Revenues	**$0**	**$0**	**$8,135,750**	**$23,614,500**	**$66,087,000**

P&L	Development		Year 3	Year 4	Year 5
	Year 1	Year 2			
Revenues	-	-	**8,135,750**	**23,614,500**	**66,087,000**
COGS	-	-	2,726,800	8,350,800	26,074,800
Gross Profit	-	-	**5,408,950**	**15,263,700**	**40,012,200**
Expenses					
CAPEX	140,000	880,000	300,000	300,000	150,000
G&A	217,150	637,400	761,870	1,037,440	1,284,540
R&D	1,095,000	1,602,000	1,518,300	2,654,400	3,818,400
Marketing	-	448,000	2,178,915	4,129,490	6,851,540
Total Expenses	**1,452,150**	**3,567,400**	**4,759,085**	**8,121,330**	**12,104,480**
EBIDT	-1,452,150	-3,567,400	649,865	7,142,370	27,907,720
Tax (20%)	-	-	-	264,107	5,581,544
Net Earnings	**-1,452,150**	**-3,567,400**	**649,865**	**6,878,263**	**22,326,176**

■ Revenues   ■ Net Earnings

66,087,000

23,614,500

22,326,176

8,135,750

6,878,263

649,865

-

-

-1,452,150

-3,567,400

Year 1   **Year 2**   **Year 3**   **Year 4**   **Year 5**