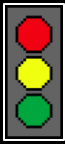
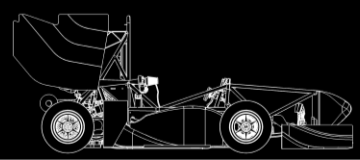




2024 FSAE Michigan - Business Presentation

Georgia Institute of Technology: Car #7

Presented by: Eli Kuperman, CEO, Alexander Merryman, COO



Company Intro

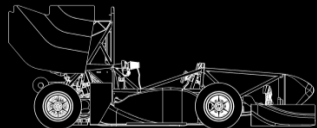
Formula Style Car
Manufacturing Company



100+
Employees

17,000 Sq ft.
Facility

4,000 Sq ft.
Machine Shop



Introduction

Customer

Shareholders

Operations

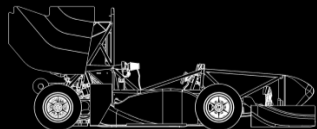
Conclusion



Mission Statement



"Inspiring the next generation of motorsports fans to drive with the future in mind."



Introduction

Customer

Shareholders

Operations

Conclusion



Road to Market



I. Customer

- ❖ Market Research
- ❖ R & D
- ❖ Product

Complete understanding of the Hybrid market



II. Shareholders

- ❖ Finances
- ❖ R & D
- ❖ Shareholder Value

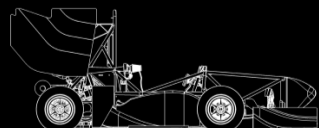
Full transition and healthy financials



III. Operations

- ❖ Supply Chain
- ❖ New technology
- ❖ Personnel

Supporting Activities for success



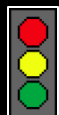
Introduction

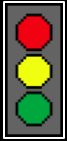
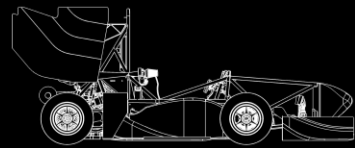
Customer

Shareholders

Operations

Conclusion





Introduction

Customer

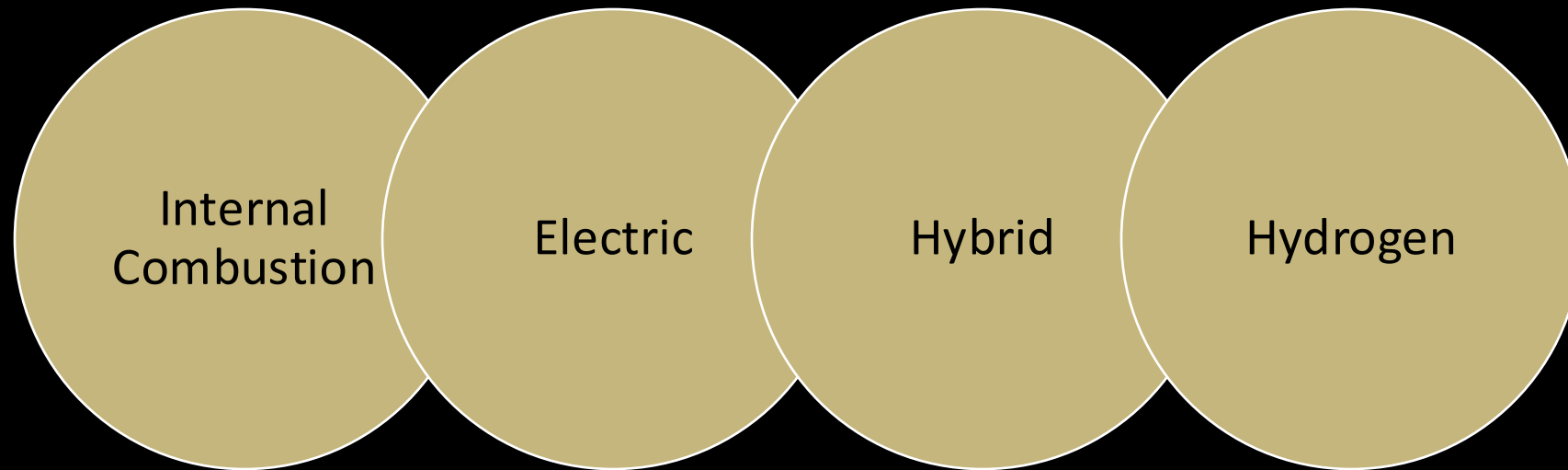
Shareholders

Operations

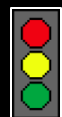
Conclusion



Market Research



*Further explanation in Appendix 4



Introduction

Customer

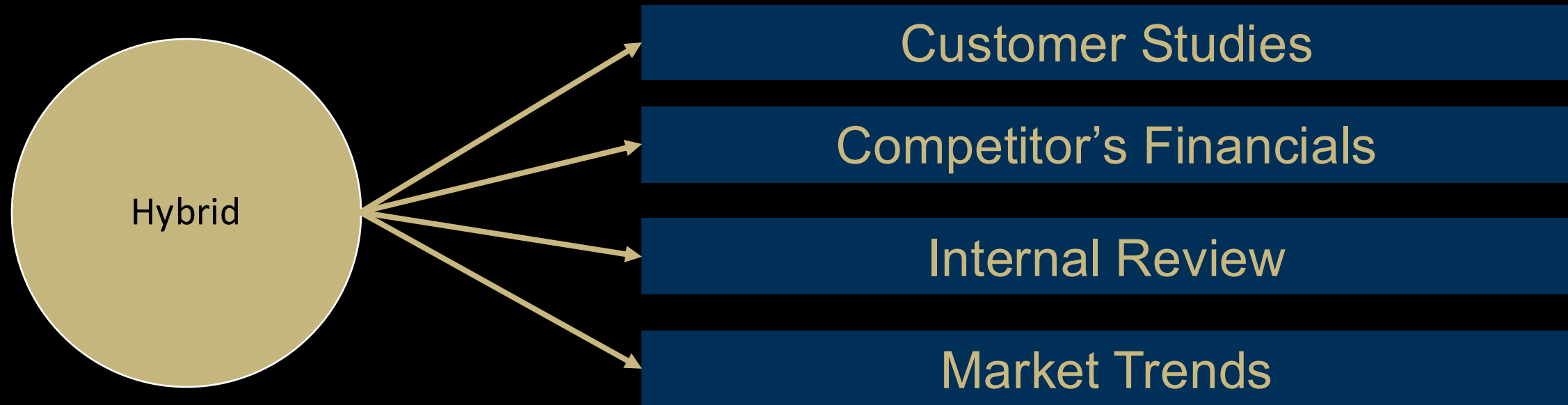
Shareholders

Operations

Conclusion



Market Research



*Additional information in Appendix 5



Introduction



Customer

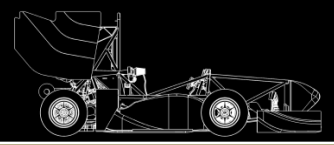
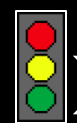
Shareholders

Operations

Conclusion



Hybrid Trends



Introduction

Customer

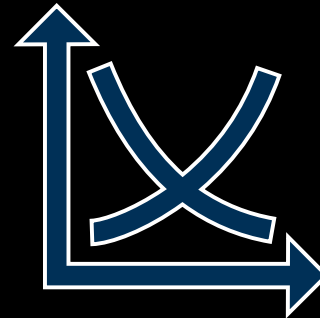
Shareholders

Operations

Conclusion



Consumer Profile



Introduction

Customer

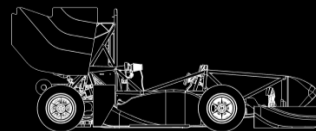
Shareholders

Operations

Conclusion



Consumer Profile



Introduction

Customer

Shareholders

Operations

Conclusion

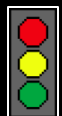
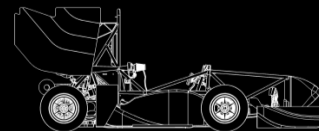


Environment

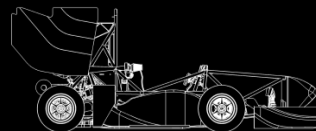
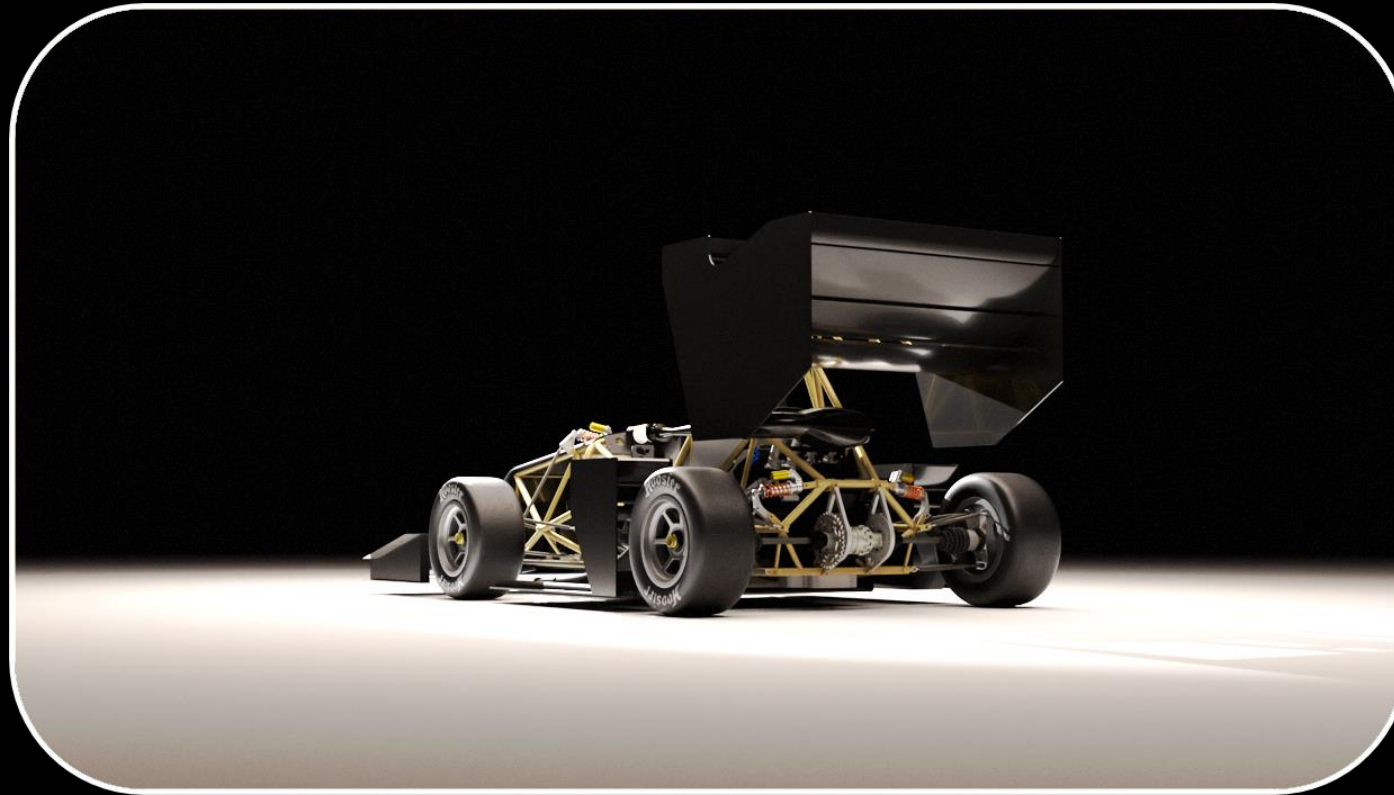
I.C.E.	Hybrid
350g CO ₂ per mile	260g CO ₂ per mile

EV	Hybrid
12 Kg of Li	8 Kg of Li
180 Kg of CO ₂ per battery	120 Kg of CO ₂ per battery

<https://climate.mit.edu/as-k-mit/are-electric-vehicles-definitely-better-climate-gas-poweredcars#:~:text=The%20researchers%20found%20that%20on,vehicle%20created%20just%20200%20grams.>



Introducing Darwin One



Introduction

Customer

Shareholders

Operations

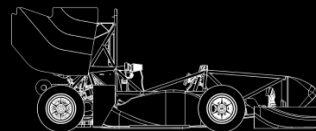
Conclusion

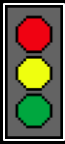


Product Improvement



I.C.E. Car	Darwin One
75 Horsepower	85 horsepower
Low-end lack of torque	Instant Torque
Understeering Driving Characteristics	Tunable rear-end with EV Motor





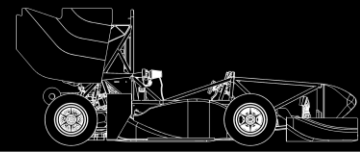
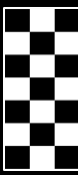
Introduction

Customer

Shareholders

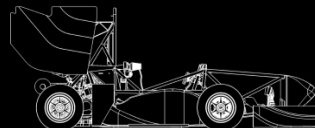
Operations

Conclusion



Future Outlook

	Year One	Year Two	Year Three	Year Four	Year Five
Production	IC & H	IC & H	H	H	H
Sales	IC	IC & H	IC & H	H	H



Introduction

Customer

Shareholders

Operations

Conclusions



Willingness to Pay

\$30,000



Introduction

Customer

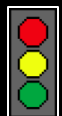
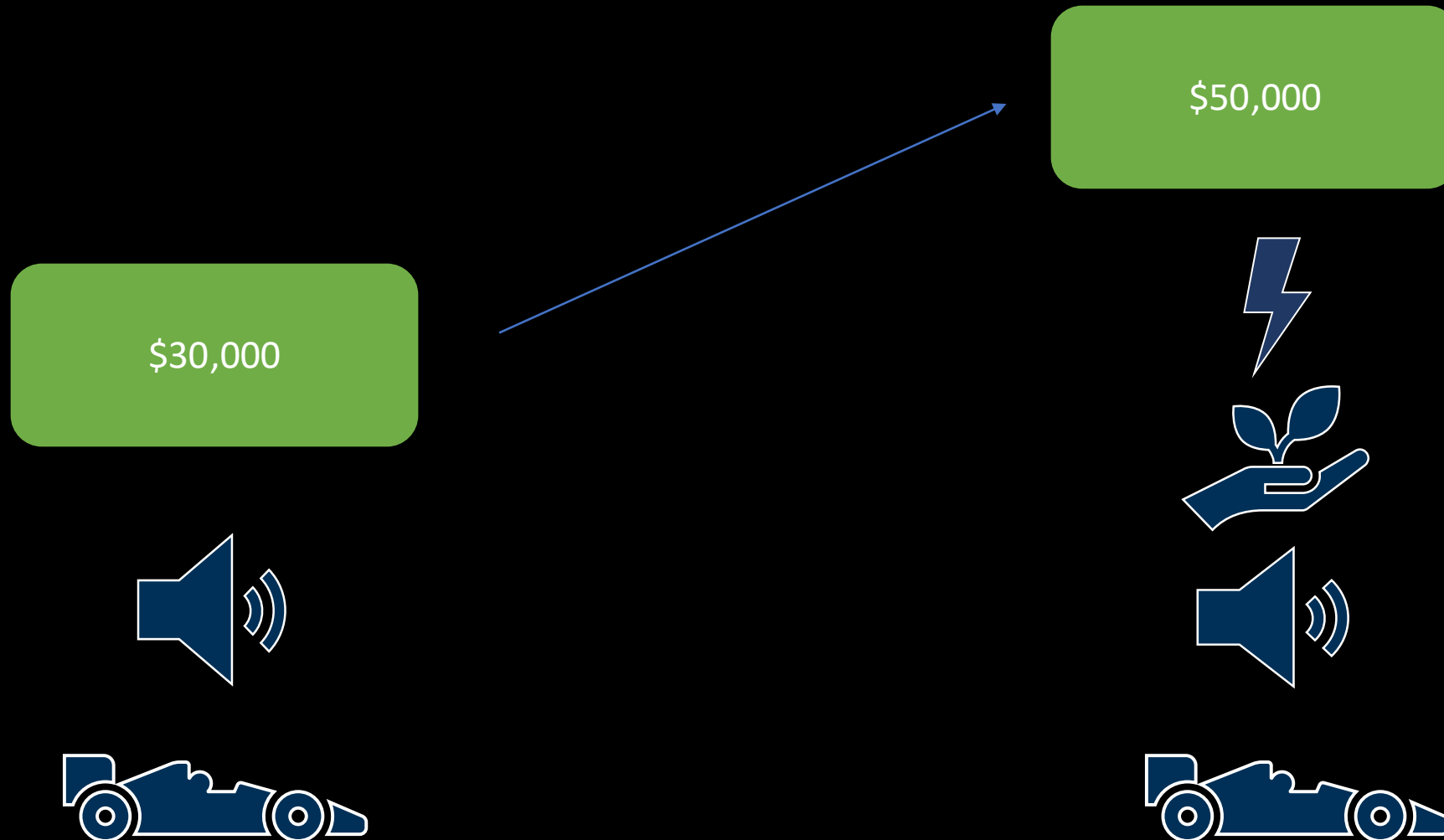
Shareholders

Operations

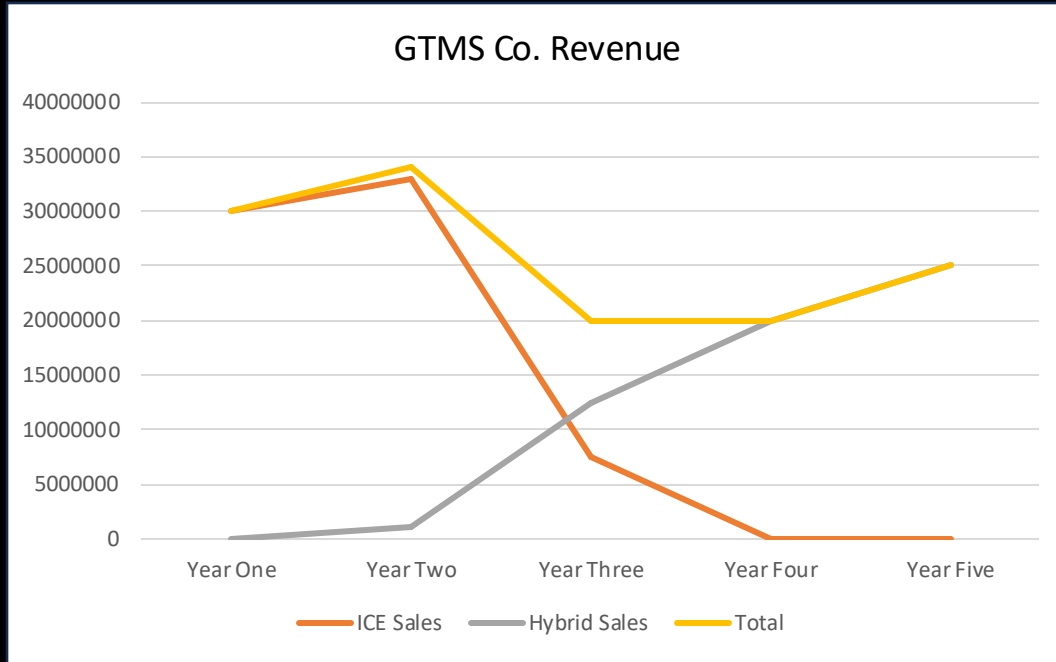
Conclusions



Willingness to Pay



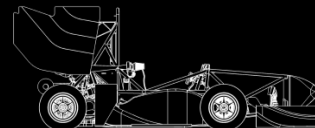
Finances



ROS Y1: 14.93%

ROS Y5: 38.28%

*Full Financial Statements: Appendix One



Diminished Costs and R&D

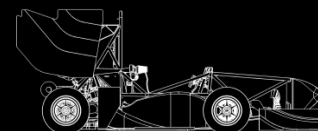
Years 1,2: Hybrid Development	Years 1,2: \$3,000,000
Year 3: Custom Controller	Year 3: \$1,000,000
Year 4: Custom Encoder	Year 4: \$500,000



*Units costed in YoS

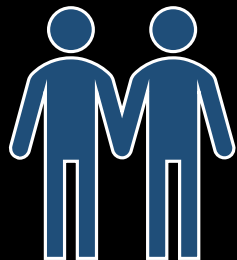
*Full financials in Appendix One

*Full costs in Appendix Three



R&D Work Force

Year One



Introduction

Customer

Shareholders

Operations

Conclusions

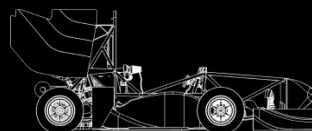
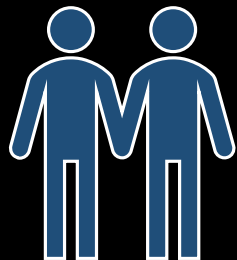


R&D Work Force

Year One



Years Two-Four



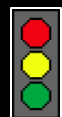
Introduction

Customer

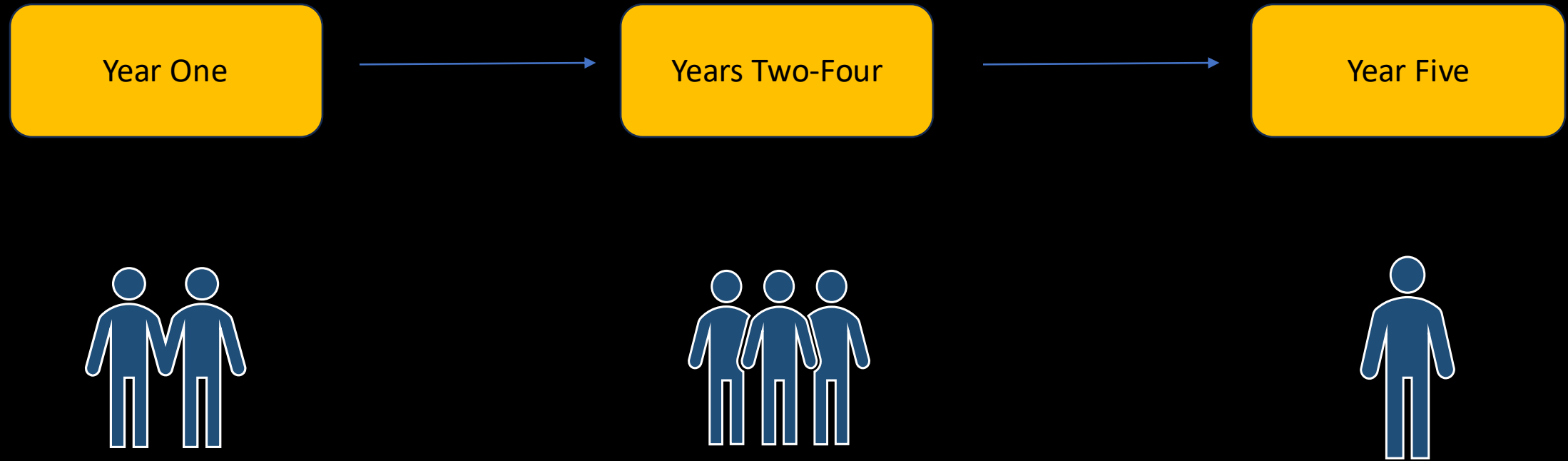
Shareholders

Operations

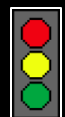
Conclusions



R&D Work Force



*Full Workforce in Appendix Two



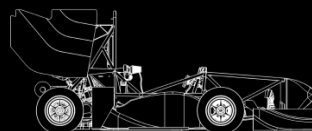
Introduction

Customer

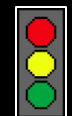
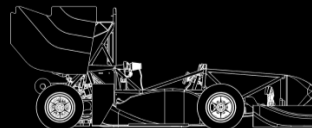
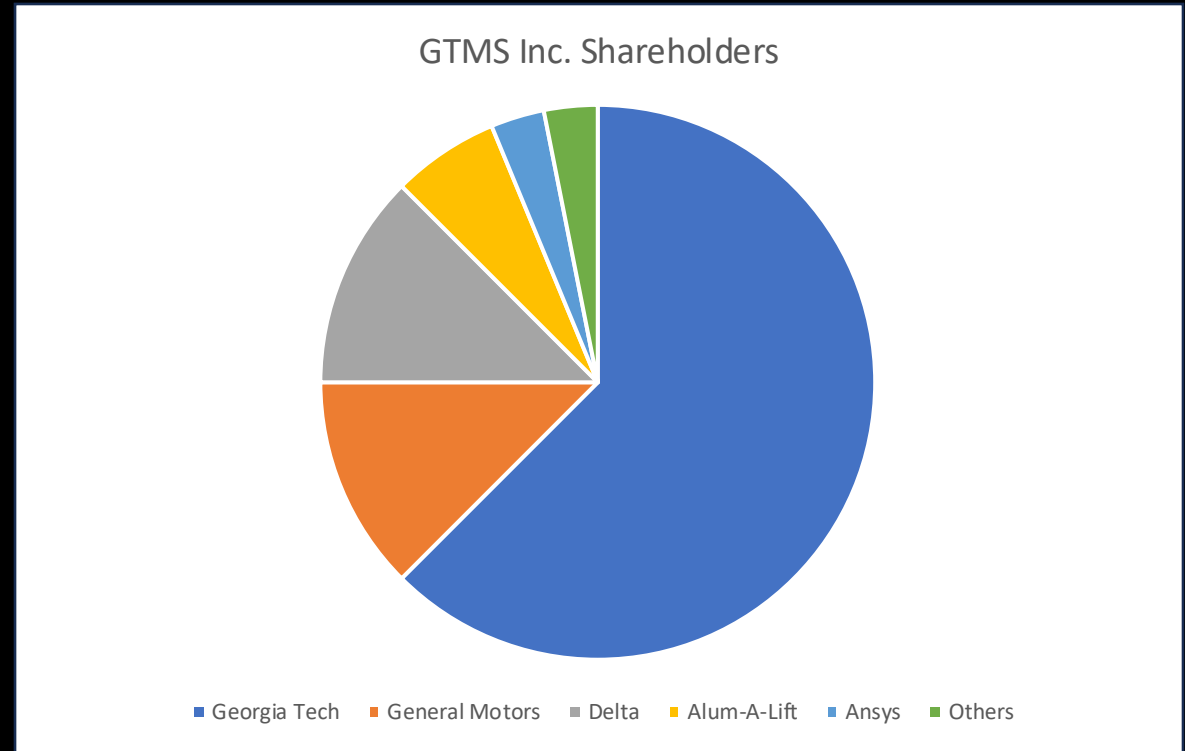
Shareholders

Operations

Conclusions



Shareholders



Introduction

Customer

Shareholders

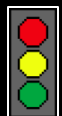
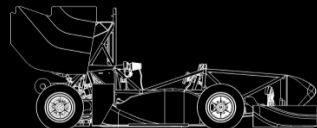
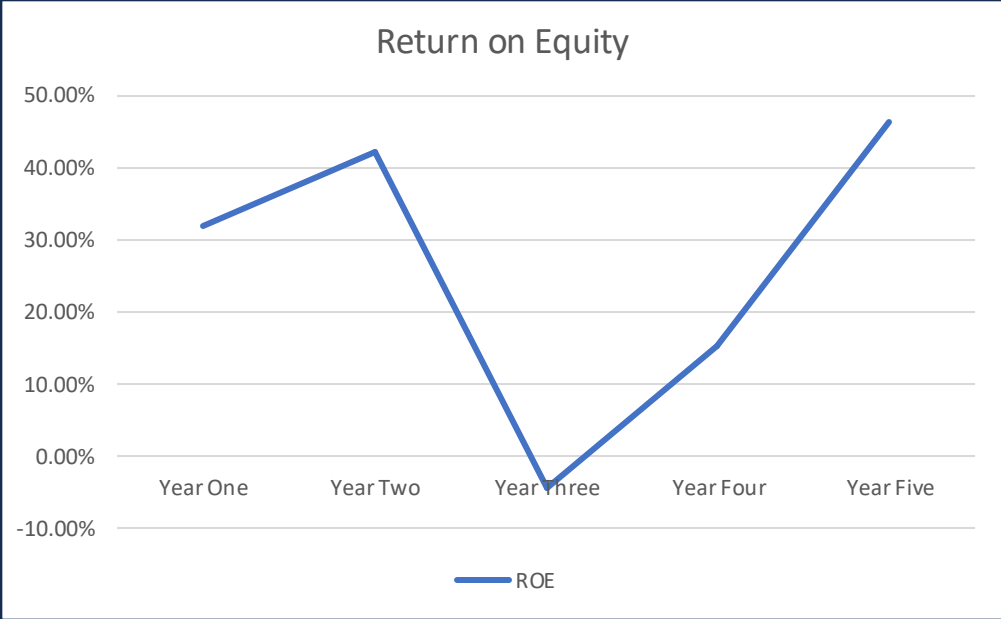
Operations

Conclusions



Shareholder Value

VALUATION AT Y1:
\$13,990,768.76



Introduction

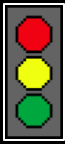
Customer

Shareholders

Operations

Conclusions





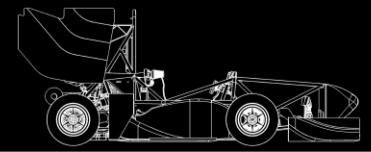
Introduction

Customer

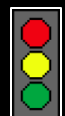
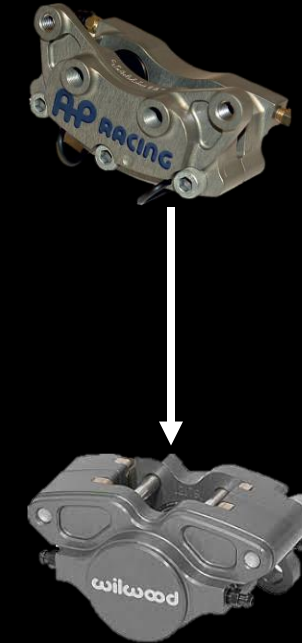
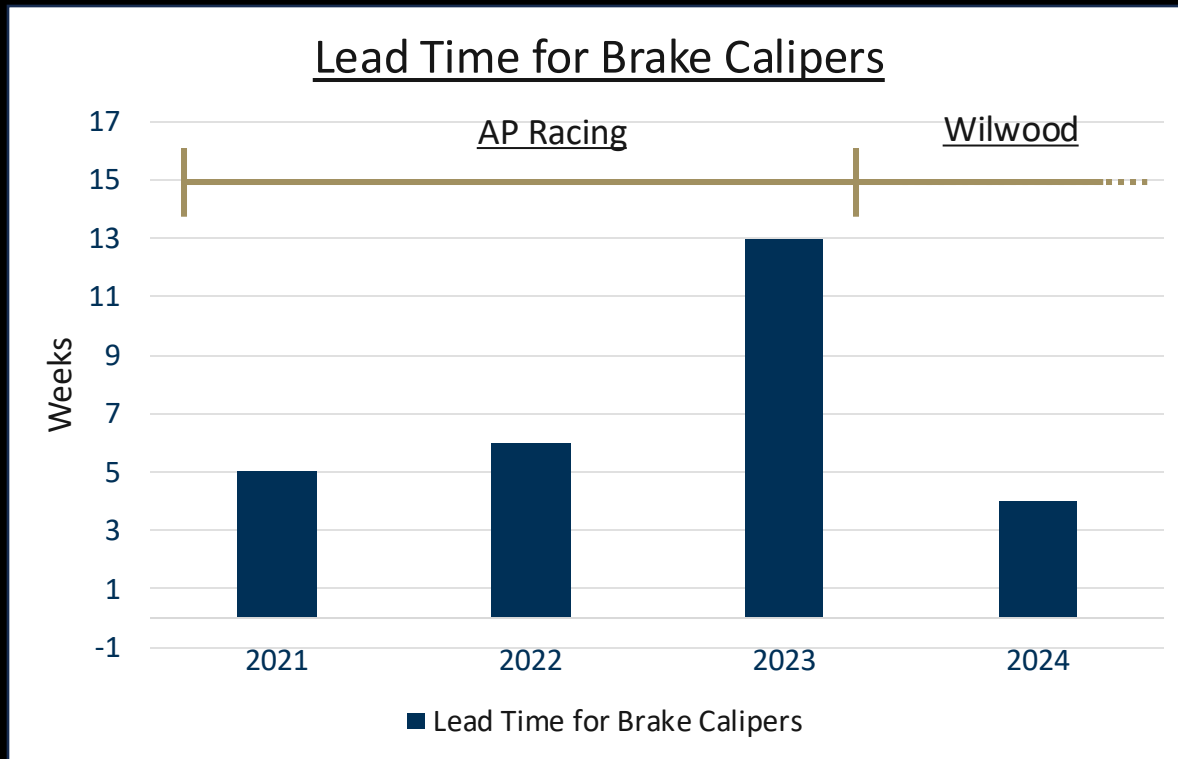
Shareholders

Operations

Conclusion



Supply Chain



Introduction

Customer

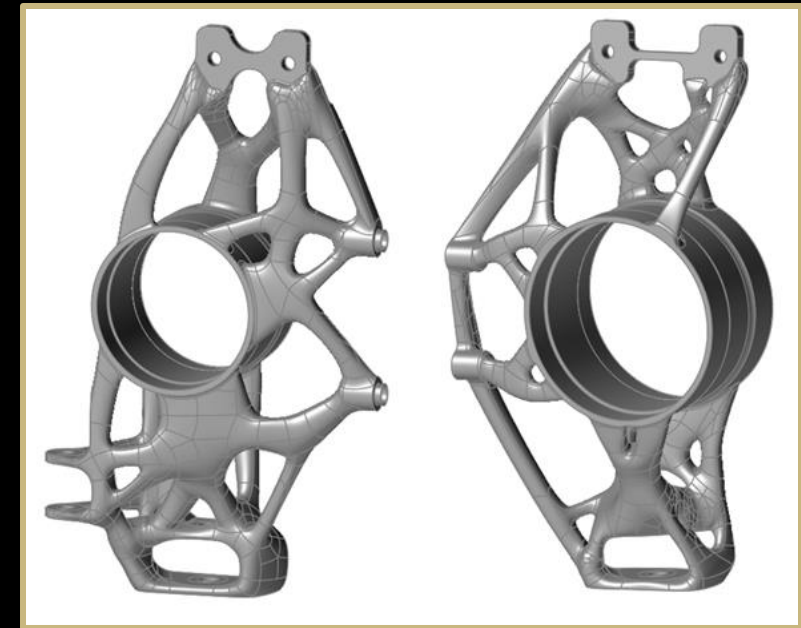
Shareholder

Operations

Conclusion



New Technology



Introduction

Customer

Shareholder

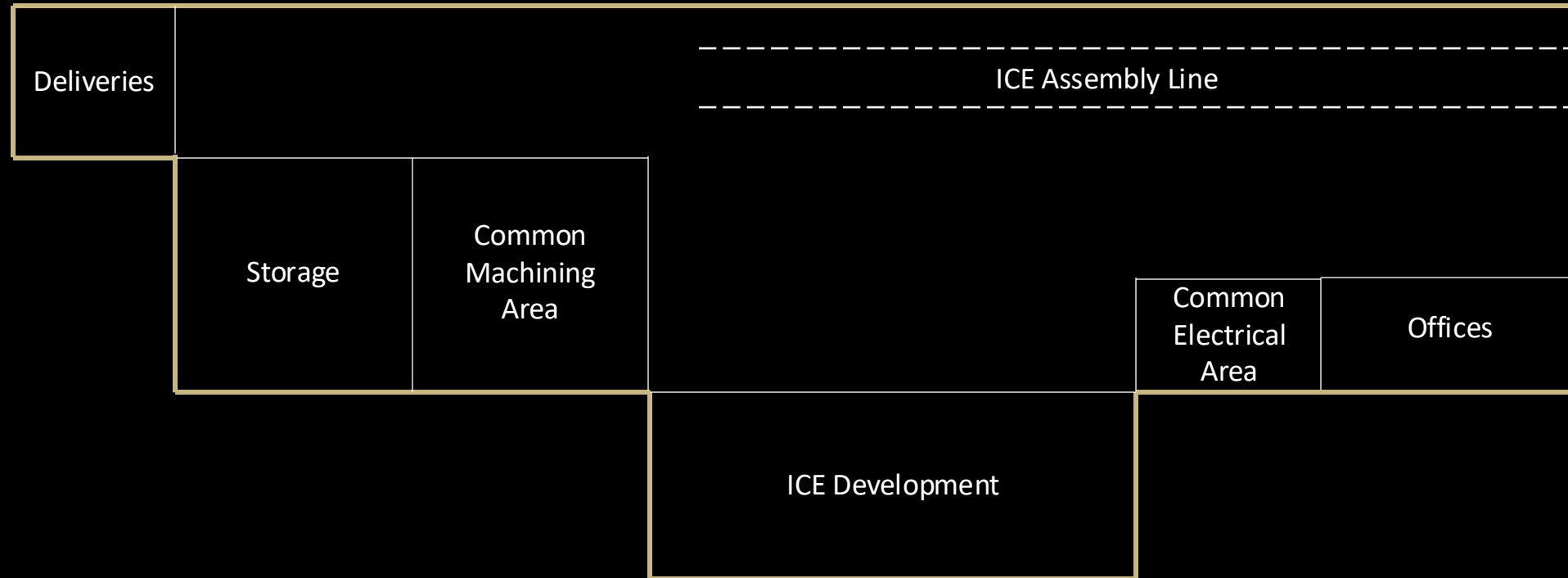
Operations

Conclusion



Factory

2024



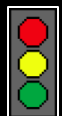
Introduction

Customer

Shareholder

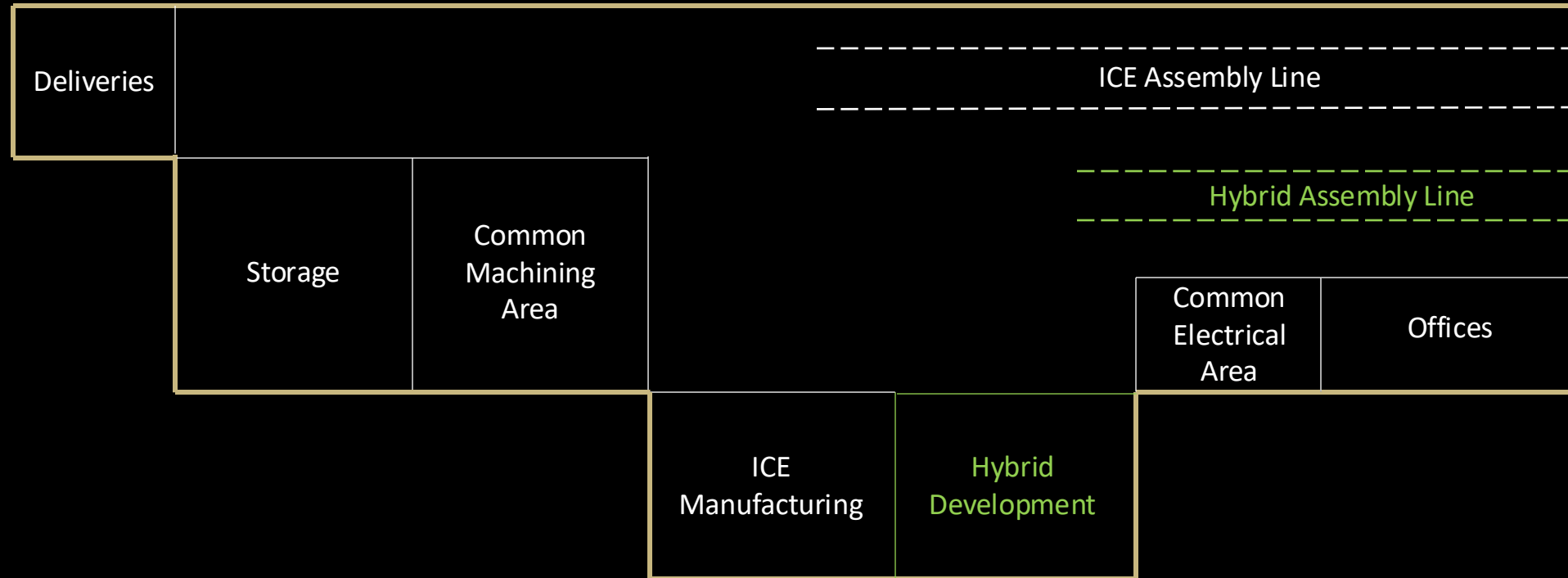
Operations

Conclusion



Factory

2025-2026



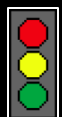
Introduction

Customer

Shareholder

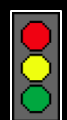
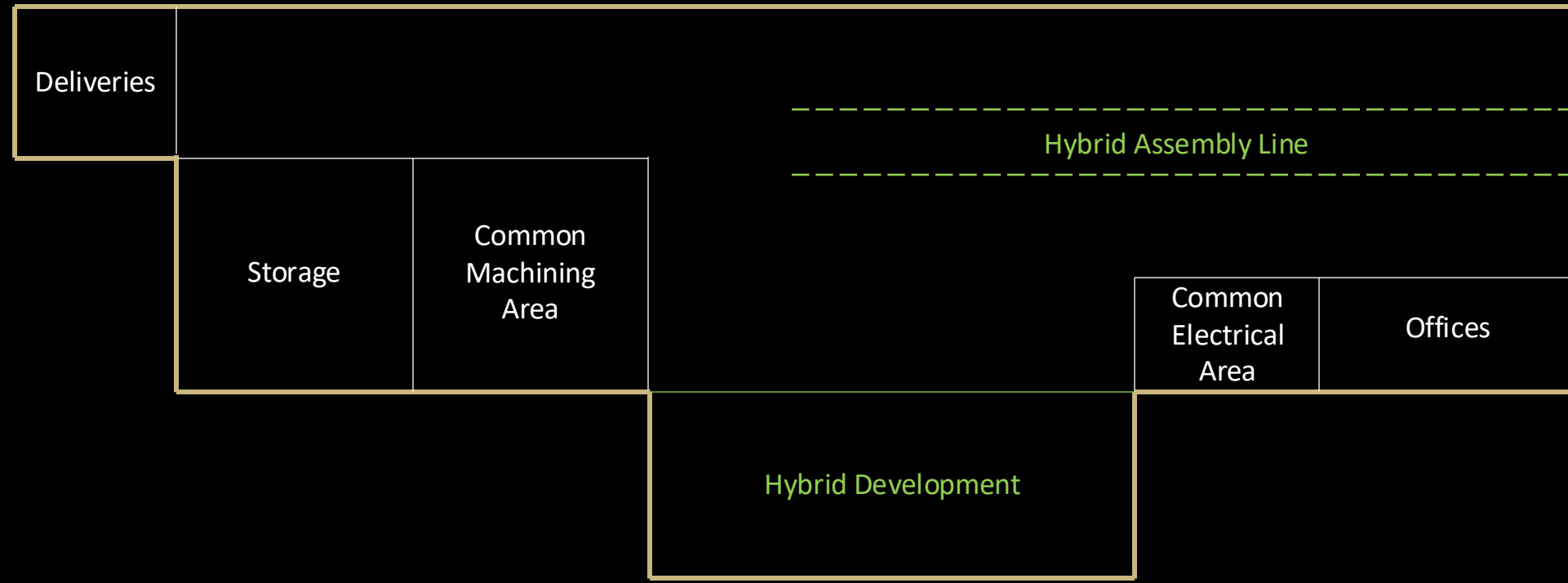
Operations

Conclusion



Factory

2026+



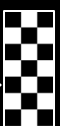
Introduction

Customer

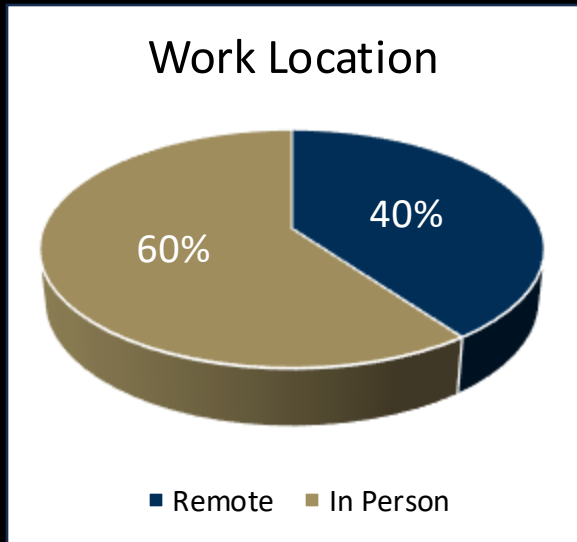
Shareholder

Operations

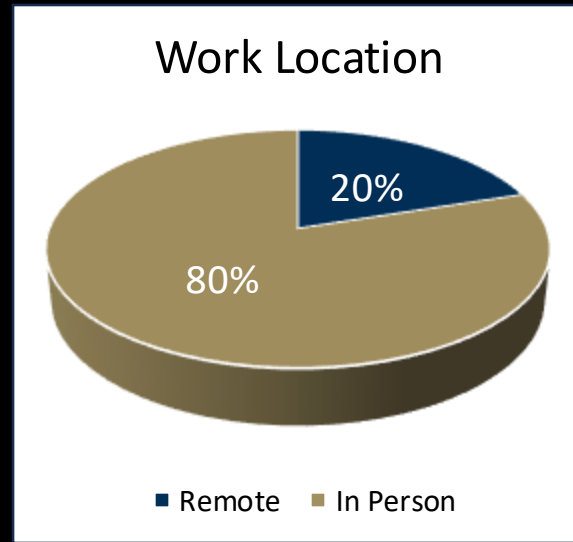
Conclusion



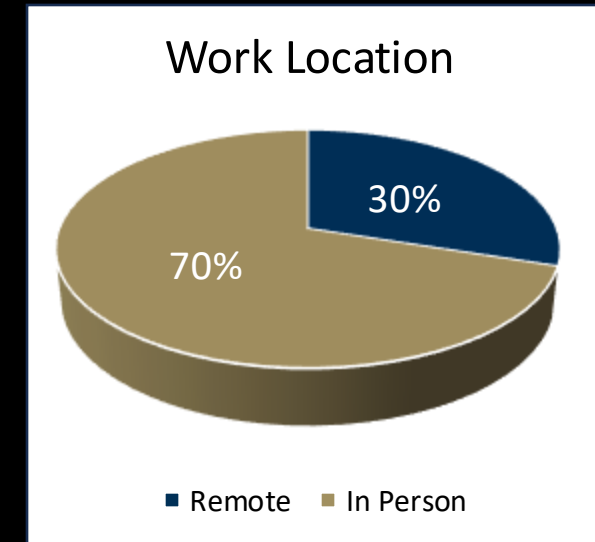
Personnel



2024



2025



2026+



Introduction

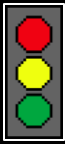
Customer

Shareholder

Operations

Conclusion





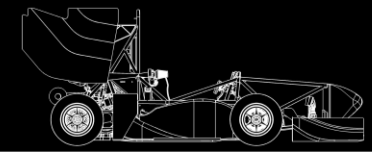
Introduction

Customer

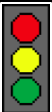
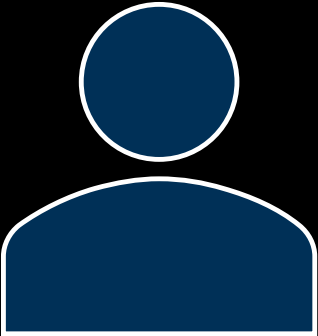
Shareholders

Operations

Conclusion



Conclusion



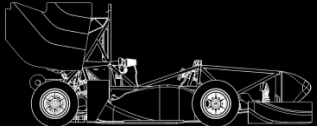
Introduction

Customer

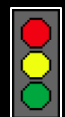
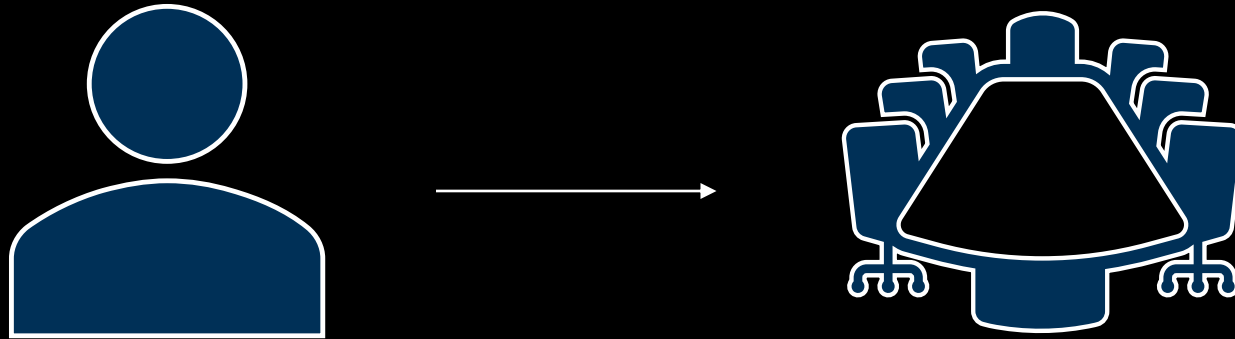
Shareholders

Operations

Conclusion



Conclusion



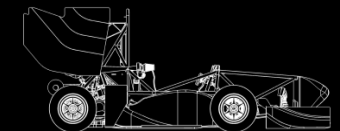
Introduction

Customer

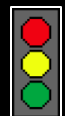
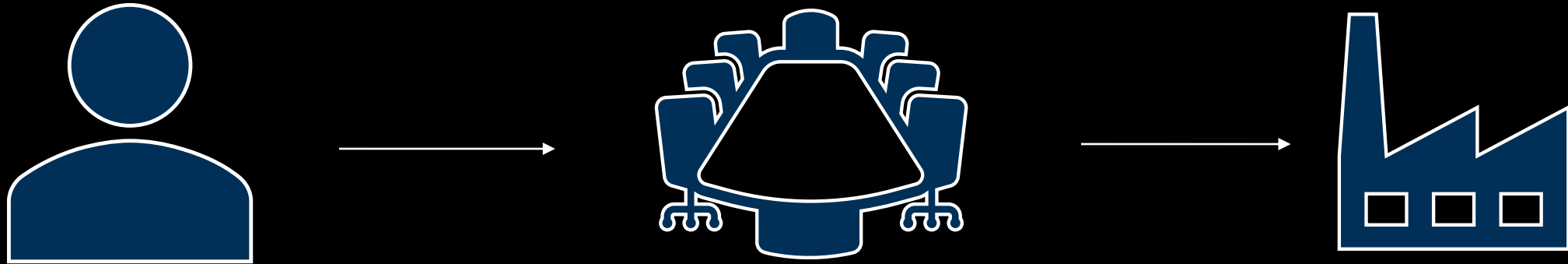
Shareholders

Operations

Conclusion



Conclusion



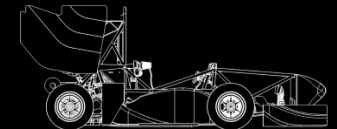
Introduction

Customer

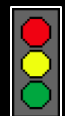
Shareholders

Operations

Conclusion



Thank you!



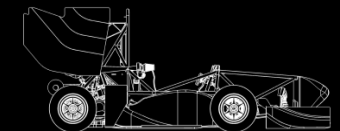
Introduction

Customer

Shareholders

Operations

Conclusion



Appendix One- Five Year Income Statement

	Year One	Year Two	Year Three	Year Four	Year Five
Revenue					
ICE Sales	30000000	33000000	7500000	0	0
Hybrid Sales	0	1000000	12500000	20000000	25000000
Total	30000000	34000000	20000000	20000000	25000000
COGS					
COGS Ice	20000000	22000000	5000000	0	0
COGS Hybrid	0	1000000	12500000	15200000	16200000
Total	20000000	23000000	17500000	15200000	16200000
GROSS PROFIT	10000000	11000000	2500000	4800000	8800000
GPM	33.33%	32.35%	12.50%	24.00%	35.20%
EXPENSES					
Human Capital	520000	595000	595000	665000	515000
R&D	3000000	3000000	1000000	500000	500000
Marketing	1000000	500000	500000	500000	300000
Manu. Overhead	1000000	1000000	1000000	1000000	1000000
Total	5520000	5095000	3095000	2665000	2315000
Net Profit	4480000	5905000	-595000	2135000	6485000
	Year One	Year Two	Year Three	Year Four	Year Five
ROE	32.02%	42.21%	-4.25%	15.26%	46.35%
ROS	14.93%	17.37%	-2.98%	10.68%	25.94%



Appendix Two- Human Capital

Year One				Year Two					
Position	Quant.	Salary	Total Salary	Position	Quant.	Salary	Total Salary		
R&D Engineer	2	75000	150000	R&D Engineer	3	75000	225000		
Manufacturing Engineer	2	70000	140000	Manufacturing Engineer	2	70000	140000		
Admin	2	80000	160000	Admin	2	80000	160000		
Marketing Professional	1	70000	70000	Marketing Professional	1	70000	70000		
Brand Professional	0	70000	0	Brand Professional	0	70000	0		
			Total Salary	520000				Total Salar	595000

Year Three				Year Four				Year Five						
Position	Quant.	Salary	Total Salary	Position	Quant.	Salary	Total Salary	Position	Quant.	Salary	Total Salary			
R&D Engineer	3	75000	225000	R&D Engineer	3	75000	225000	R&D Engineer	1	75000	75000			
Manufacturing Engineer	1	70000	70000	Manufacturing Engineer	2	70000	140000	Manufacturing Engineer	3	70000	210000			
Admin	2	80000	160000	Admin	2	80000	160000	Admin	2	80000	160000			
Marketing Professional	1	70000	70000	Marketing Professional	1	70000	70000	Marketing Professional	1	70000	70000			
Brand Professional	1	70000	70000	Brand Professional	1	70000	70000	Brand Professional	0	70000	0			
			Total Salar	595000				Total Salar	665000				Total Salar	515000



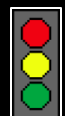
Appendix Three – BoM: \$50,000

KTM 250 SX	\$4,000	1k Twill 2x2	1185	Fittings	48	U Bracket	11.93	Rail Mounting Bolts	12.91	Dash Tabs/ Weldnuts (4)	9.46
Parker GVM F142	\$5,000	Carbon		Fittings	60	Slider Bracket	19.29	Rail Mounting Nuts	5.57	Screen Bolts	9.6
Strong-Hold Hook Velcro	2.432667	Port	27	solenoid	98.29	Potentiometer Mounting Rod	6.44	Flat-Heat Quick Release Pins	9.15	Screen Bolts	6
1/4 in 6061 Aluminum	47.89137	6mm Hose	59.8	Alternative Spring Choice	7.51	Release Handle	49.99	Upper Sleeve	30.42	Screen Bolts	10
1/16 in 4130 Steel Sheet	17.48496	Spiral	105	Alternative Spring Choice	7.77	Release handle pin covers	8.04	Block Bolts	10.16	Dash Bolts	8.67
1/4 7075 Aluminum	109.5249	Peel Ply	195	Alternative Spring Choice	7.51	Flanged Bearings Oil- Embedded	2.86	Thrust Bearing	10.64	Dash washers	3.9
1/2 7075 Aluminum	35.40103	Flow/Peel	217	Alternative Spring Choice	7.77	Retaining Rings	11.8	1" Pinion Gear	190.62	Pivot Plate (have!)	-
1/16 in Aluminum sheet	7.4118	Composites Molds	14850	Alternative Spring Choice	7.51	Sleeve Bearings Oil-Embedded	1.7	Shaft	16.72	Pivot Bolt (non-shoulder)	15.76
CONFOR CF45 Medium (Blue	82.65	Carbon	6046	Original Return Spring (F2-	7.08	Carriage Side Bolts	7.17	Inner Inserts (2)	63.79	Washer	13.66
PLA Plus Filament 1.75 mm	47.97	Button Cap	-	Overtravel Switch	14.19	Brake Pedal Pivot Washer	7.79	Outer Inserts (2)	15.17	Shifter arm	34.56
Baseplate	59.98	Cam locks (2) deep ones	17.9	Pneumatic Connectors	15.24	Brake Pedal Pivot	44.15	Lower Rack Mount	61.7	Tank Mount	38.03
Sq Weld Nuts	66.25	Cam lock washers	1.9	Pneumatic Connectors	7.41	Brake Pedal Pivot Nut	5.56	Upper Rack Mount	60.35	Tube	9.2
10-32 Bolts	20.18	Clutch Cable	29.98	Linear Potentiometer	399.98	Flanged Bearings Oil- Embedded	5.24	Clevis Bolts (with safety wire holes)	10.16	Spline	9.34
10-32 Bolts	11.61	Balance Bar Cable and Dial	187	Clevis (2)	49.99	Pot Mount Washers	2.4	Gear Case Bolts	11.13	Washers	12.08
10-32 Bolts	13.04	Master Cylinder	380	U-Joint	159.99	Flanged Bearings Oil- Embedded	4.3	Gear Case Nuts	6.9	Bolts for tabs	10.54
10-32 Bolts	13.34	Master Cylinder	380	Retaining Ring	9.02	Retaining Ring	4.99	Sleeve Bearings	120.2	Bolt for Shift arm	12.44
Adhesive-Mount Nut	15.1	Rear Caliper	593.42	Column Adapter	0	Nut (O Bracket Top)	4.8	Needle Roller Bearing	24.76	Nuts for Shift Arm	3.92
0.125" Alloy Steel Sheet (12")	63.5	Front Caliper	1038.46	Shims	13.26	Bolt (O Bracket Top)	6.34	Needle Roller Thrust Bearing	17.94	Nuts for tabs	9.91
0.125" Alloy Steel Sheet (24")	209.5	Pad (front & rear) - APH420		Rack	47.2	Throttle Pedal Pivot Washer	5.5	Rack Bolts Mounting	10.82	Pneumatic Connectors	30.72
0.063" Alloy Steel Sheet (24")	80.29	Pad (front & rear) - RX		Lower Column (carbon fib	98.96	Throttle Pedal Pivot	35.55	Paddle Housing Bolts	10.98	Pneumatic Connectors	22.03
0.063" Alloy Steel Sheet (12")	47.34	Pad (front & rear) - RQ3		Brake Pedal	95.67	Throttle Pedal Pivot Nut	4.8	Shift Paddle Bolts	13.44	Pneumatic Connectors	8.64
0.25" Carbon Steel Plate (24")	92.86	Seat	4251	Brake pedal carriage	90.67	Sleeve Bearing Carriage	147.92	Shift Paddle Nuts	5.26	Shoulder Bolts (4 for chassis)	30.48
0.032" Aluminum Sheet (24")	101.64	BRMS Soft Lines (in ft)	18.48	Master Cylinder Rod	1.99	Carriage Bolts	14.34	Quick Release- Nuts	8.83	Pivot Tube (Pivot)	15.04
0.032" Aluminum Sheet (24")	97.46	BRMS Soft Lines (in ft)	49.79	overtravel tab	13.44	Rails	90	Electronics Cover Bolts	9.22	Chassis Tab (Pivot Tibe)	28.68
Impact Attenuator	160	Fittings	40	Reservoir mount	35.36	Toe Plate Mounting Bolts	16.03	Washers	7.53	Pin	2.69
Chassis	10320	Fittings	240					Dash Tabs/ Weldnuts (4)	9.46	Carbon Tubes	83.99
Anti-Intrusion Plate	30.99	Fittings	68					Screen Bolts	9.6	Digital Brake Bias Adjuster Dia	279

Appendix Four – Powertrain Options

Type	CAGR	Market Size (2024)	Market Size (2032)
Internal Combustion	2.6%	\$1850.23B	\$1950.74B
Hybrid	28.80%	\$658.95B	\$5006.35B
Electric	23.42%	\$317.26B	\$2108.80B
Hydrogen	52.9%	\$2.32B	\$69.61B

<https://www.precedenceresearch.com/hybrid-vehicle-market>



Introduction

Customer

Shareholders

Operations

Conclusion



Appendix Five – Market Research Findings

Customer Studies

- 82% would purchase hybrid
- Not as likely to go to Hydrogen/EV

Competitor's Financial

- EV sales slowing
- Flexible architecture over full commitment to EV

<https://www.investors.com/news/hybrid-cars-ev-electric-vehicles-ford-gm-tesla-toyota-honda/>

Internal Review

- Merging of two generations
- Many aspects of production will stay similar

Market Trends

- 65% increase in hybrid sales
- I.C.E. vehicle sales decreasing since 2017

<https://news.bloomberglaw.com/environment-and-energy/global-gas-powered-vehicle-sales-have-fallen-23-since-2017-peak>



Appendix Six – Darwin One Advertisement

