

A shield-shaped logo composed of three concentric, slightly offset outlines, centered behind the main text.

PAUL EICHENBERG

STRATEGIC CONSULTING



Case Studies – 2016 Project Summary

Projects	Project Types			Client Types			
	Strategy	Product Mgt.	M & A	Auto Supplier	Private Equity	Invest. Bank	Hedge Fund
CASE STUDIES							
Gas & Diesel Engine Components							
Borg Warner: Product Portfolio Roadmap							
Gentex: Automotive Mirrors & Cameras							
Automotive Interiors							
Adient: IPO							
Automotive Aluminum Foundries							
Mobileye: ADAS/Autonomous Vehicles							
Powertrain Electrification							
Tesla & Electric Vehicle Market							
ADAS/Autonomous Vehicles							
ADAS Semiconductors Market							
Acoustic & Thermal Management							

Focus is on strategy, product management, and M&A type projects. Our primary clients are automotive suppliers & investment type firms.



Global PE Sponsor – Gas & Diesel Engine Components

🛡️ **Situation:**

- Goal is to add bolt-on acquisitions to an existing global light vehicle engine component manufacturer
- Concerned with shift towards alternative powertrains & electric vehicles
- Client needs due diligence support and market study to quantify market shifts and possible disruptions to growth plans

🛡️ **Approach:**

- Evaluate regulation-driven technology demand and sensitivity to market segment
- Develop component forecast for entire investment cycle and beyond (10+ yrs.)
- Identify risks and synergy opportunities associated with potential acquisition candidate along with long-term competitive positioning

🛡️ **Results:**

- Client implements planned acquisition strategy based on following conclusions:
 - Market forecast for internal combustion engine components will be robust for foreseeable future
 - Proposed acquisition strengthens the organization's competitive position with OEMs globally and in the aftermarket



Hedge Fund – Borg Warner: Product Portfolio Roadmap

🛡️ **Situation:**

- Goal is to take sizeable position in Borg Warner. Has no other automotive holdings in its family of funds
- Client seeks automotive market and technology insights
- Client likes Borg Warner growth history and financial performance, however, needs help understanding business growth drivers, technology, and global competitive positioning

🛡️ **Approach:**

- Provide general overview of market and global CO2 reduction legislation
- Evaluate product portfolio and pipeline for future products as organization shifts towards alternative propulsion systems for hybrid and electric vehicles
- Develop growth forecast for key product segments (turbo, 4WD, hybrid, etc.)
- Identify core competitors and market share estimates for critical product segments

🛡️ **Results:**

- Borg Warner has a robust pipeline of technology and new products to drive toward high single-digit growth over the next several years
- Borg Warner \$15 billion vision is a realistic goal



Hedge Fund – Gentex: Automotive Mirrors & Cameras

🛡️ **Situation:**

- Client is current investor in Gentex evaluating different exit strategies
- Client seeks to better understand market trends impacting the automotive camera and video-based mirror systems segments, Gentex's competitive positioning, and market outlook moving forward
- Goal is to determine if cameras replace mirrors in the near-term

🛡️ **Approach:**

- Provide general overview and market drivers for mirrors, camera and video-based mirror systems
- Develop demand and sensitivity forecast for each key product segment
- Identify key competitors and market share estimates for each critical product segment

🛡️ **Results:**

- Gentex has significant and sustainable competitive position in global automotive mirror market
- Market for mirrors is not growing as fast as new products like cameras
- Cameras will not replace automotive mirrors in the near-term



Global PE Sponsor – Automotive Interiors

🛡️ **Situation:**

- Client looking at consolidation opportunities in the automotive interiors space considering recent exits of JCI and Magna. Client needs:
 - Overview of forward trends in automotive interior space across US & EU
 - Competitive positioning for all major global and regional players
 - Longer-term strategic optionality for initial target
 - Identification of potential consolidators in this market segment

🛡️ **Approach:**

- Identify key trends along with segmentation of market participants across global markets
- Develop three strategic options for target along with list of potential acquisition candidates
- Identify competitors for similar transactions or those who will play the role of consolidator in this market segment

🛡️ **Results:**

- Market conditions are ripe for consolidation in the global interiors market
- Financial buyers and strategic buyers see opportunity in this sector of the automotive market



Hedge Fund – Adient: IPO

🛡️ **Situation:**

- Client evaluating attractiveness of Adient IPO (JCI spin-off). Lacks automotive supplier industry expertise to complete necessary evaluation
- Key questions:
 - Why is the market leader not the benchmark in EBITDA and ROC?
 - Is issue wrong corporate parenting strategy or wrong industry sector?

🛡️ **Approach:**

- Market research provides insights to:
 - Automotive seating issues and future market trends
 - Segmentation of the global market
 - Strategic options and challenges for this stand alone entity
 - Possible actions to improve margins

🛡️ **Results:**

- Data shows opportunities to improve margins and performance to achieve levels equal to key market competitors
- Research shows industry sector presents strategic challenges
- Client agreed with conclusions of the final report and recommended action



European PE Sponsor – Automotive Aluminum Foundries

🛡️ **Situation:**

- Client is a large iron casting (non-automotive) business evaluating bolt-on acquisition in automotive aluminum sector
- Client seeks automotive expertise and understanding of aluminum market, growth drivers and challenges
- Concern with shift towards composite materials as “lighter weight alternative”
- Client needs due diligence support and market study to quantify opportunity

🛡️ **Approach:**

- Provide general overview of aluminum market with key trends and challenges
- Segment market participants across global market
- Develop growth forecast for each key product segment
- Identify products with higher probability of conversion from aluminum to composite materials

🛡️ **Result:**

- Client does not move forward with investment due to unfavorable market conditions



Hedge Fund – Mobileye: ADAS/Autonomous Vehicles

🛡️ **Situation:**

- Client wants to take a sizeable position in Mobileye and seeks automotive market and technology insights
- Client likes Mobileye story, however, needs assistance understanding business growth drivers, technology and global competitive positioning
- Client needs to understand if Artificial Intelligence players like Nvidia and Intel could leap-frog Mobileye

🛡️ **Approach:**

- Provide general overview and technology roadmap for autonomous vehicles
- Develop demand and sensitivity forecast for key product segments
- Identify key competitors and market share estimates for each critical product segment
- Identify key technology hurdles to full autonomous vehicles and likely winners

🛡️ **Results:**

- Mobileye has a significant and sustainable competitive position in global automotive vision based on autonomous driving software
- Mobileye technology is used for more than 250 vehicle platforms including early stage programs for semi-autonomous cars with 13 OEMs



Automotive Supplier – Powertrain Electrification

Shield Situation:

- Tier 1 Supplier seeks to understand shift toward electrification and wants to figure out how to participate - key questions include:
 - How will Hybrid/EVs grow around the world?
 - What are the critical technologies around new vehicles architectures?
 - Who are the major Tier 1's best positioned to win?
 - What are the opportunities for Tier 2's or major sub systems?

Shield Approach:

- Develop global vehicle forecast for each hybrid/EV vehicle architecture
- Provide list of key new technologies for each vehicle architecture along with key suppliers for each new product
- Identify key sub-systems to potentially be outsourced to Tier 2 suppliers
- Develop initial list of strategies to be considered to enter the market

Shield Results:

- Increasing regulations will drive growth in hybrid and electric vehicles. However, architecture used is sensitive to market factors and vehicle type, which drives the type of product adopted by consumers
- Client identifies several new market opportunities aligned with core competencies as organization shifts strategy toward future propulsion systems



Hedge Fund – ADAS/Autonomous Vehicles

🛡️ **Situation:**

- Client seeks to develop an investment thesis along with answer the following questions:
 - Forecast when SAE level 4 autonomous vehicles hit the market?
 - What is the full sensor suite that will be necessary to achieve level 4 autonomy?
 - How will content per vehicle change from level 1 to level 4?
 - Who will be the key hardware and software providers?

🛡️ **Approach:**

- Develop a bottoms-up global vehicle forecast for level 1 ADAS through level 4 autonomy based on industry technology roadmaps
- Identified key technologies to be utilized at each stage of market development
- Established a list of strategic suppliers

🛡️ **Results:**

- Overall penetration of ADAS/autonomous vehicle features will dramatically rise over the course of the next decade
- Market is software-driven, a huge opportunity for software-focused suppliers
- As traditional electronics hardware component suppliers expand towards software driven innovation they can expect a significant new competitive threat from the semiconductor market



Hedge Fund – ADAS/Autonomous Semiconductor Market

🛡️ **Situation:**

- Client seeks to develop an investment thesis along with answer the following questions:
 - Role of artificial intelligence in the development of higher level autonomy
 - Identification of key segment players and winning platforms (NVIDA PX2)
 - Develop market forecast next 15 years
 - Highlight possible consolidation scenarios

🛡️ **Approach:**

- Develop a bottoms-up global vehicle forecast for level 1 ADAS through level 4 autonomy based on industry technology roadmaps
- Identified key technologies to be utilized at each stage of market development
- Established a list of strategic suppliers and technology leaders

🛡️ **Results:**

- Overall penetration of ADAS/autonomous vehicle features will dramatically rise over the course of the next decade
- Semiconductor technology will be a significant enabler as market shifts from ADAS to Autonomy
- ADAS/Autonomous market for semiconductors will grow to approximately \$65 billion by 2030.



EU Investment Bank – Acoustic & Thermal Management

🛡️ **Situation:**

- Client required due diligence support. Specific questions to answer:
 - What are the key market drivers?
 - What is a global market size and the forecast for growth in Europe?
 - How is the market segmented?
 - Identify key acquisition targets globally?

🛡️ **Approach:**

- Client is focused on a niche segment of the market, needed to expand the scope of market to clarify the bigger opportunity
- Developed market drivers, global forecast for the broader acoustic & thermal management systems market
- Created a core list of acquisition targets with complete company profiles

🛡️ **Results:**

- Redefinition of the market beyond the niche creates significant opportunity including:
 - Niche was flat growth, new market definition is growing at 5-6%
 - Global market is 10X the size of the niche
 - Creates significant pipeline for bolt-on acquisition



PAUL EICHENBERG

GET IN TOUCH
www.chief-strategist.com

T: (248) 670-9108
E: peichenberg@chief-strategist.com

25463 Pennsylvania Avenue
Novi, MI 48375