SIG SUSS INVESTMENT GROUP

MicroVision, Inc. (NASDAQ: MVIS)

Sector: Information Technology
Industry: Electronic Equipment and Instruments

Recommendation	Sell

MicroVision: Lacking a Clear Vision

Analysts

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Basic Information

Current Price	$4.89
Target Price	$2.57
+/- Potential	-47.34%
Exchange	NASDAQ
Ticker	MVIS
Market Capitalisation	751.5mn
Shares Outstanding	165.5mn
52-Week Trading	$2.50 - 16.38
Average Volume	3.12mn
Fiscal Year End	31 December 2022
Short Interest	26.22%

1Y Price vs NASDAQ (Rebased)
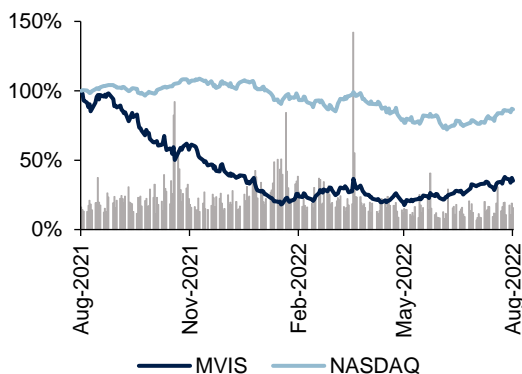
Key Executives

Sumit Sharma	CEO & Director
Anubhav Verma	VP & CFO
Drew Markham	VP & General Counsel

Major Shareholders

BlackRock Inc	6.40%
The Vanguard Group Inc	5.46%
State Street Global Advisors	2.63%

Fig 1: Historical OpEx and Net Losses ($'000)
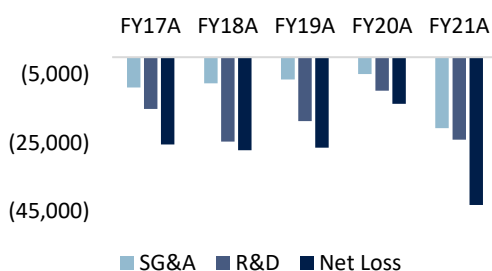
Source: Company Filings

Company Overview

Microvision, Inc was founded in 1993 and is headquartered in Washington, USA. The company develops integrated Laser Beam Scanning (LBS) solutions, combining its proprietary LBS technology with micro-electrical mechanical systems and software, to create new products that serve end markets in automotive LiDAR, augmented reality, and consumer LiDAR. The company engages in the development and manufacturing of its products and engages primarily with original equipment manufacturers (OEMs) for sales.

Automotive LiDAR Pivot

MicroVision has been focusing its entire development efforts on an integrated Advanced Driver-Assisted System (ADAS) since 2020 with a primary focus on R&D and is currently pre-revenue, which is the main cost driver comprising 52% ($24.1mn) of its operating expenses in 2021. The integrated ADAS solution comprises an automotive LiDAR sensor and sensor fusion software which will be targeted for sale to automotive OEMs and Tier-1 automotive suppliers to enable Level-2 and beyond ADAS features.

Industry Outlook

The global ADAS market has skyrocketed in recent years, with the ADAS market forecasted to reach $57.7bn by 2026 at 16.5% CAGR. This growth is led by the emergence of autonomous vehicles (AV), with the widespread adoption of ADAS systems in the automotive sector. With the global AV market projected to expand at a CAGR of 53.6% till 2030, we believe the ADAS market will continue to increase several folds, reinforced by plans from OEMs to push for level 3+ ADAS to tap on the growing AV market.

LiDAR Pales in Comparison to Alternative Technologies

We anticipate the sensor segment of the ADAS market to show significant growth, as automotive giants start to adopt various sensor systems for Level 3+ ADAS. Based on sensor component type, Radar sensors hold the highest market share in the current market and will be the largest ADAS component type by 2030 at $14bn, per McKinsey's 2022 study. LiDAR is also positioned for growth and will be a key element of Level 3+ ADAS, becoming the second largest component type by 2030 at $12bn, a CAGR of 29.5%. However, LiDAR is in its nascent stages and is only in place in a limited number of vehicles, with high costs preventing the technology from reaching the mass market. LiDAR will face stiff competition in its race to become the go-to component type for ADAS.

## Investment Thesis

Overreliance on LiDAR for ADAS

MicroVision's success hinges solely on its ability to commercialize its LiDAR product for the mass ADAS market. Failure of this venture will be costly as MicroVision will face difficulties pivoting its product due to the expensive nature of LiDAR. LiDAR is fundamentally an expensive technology and its current high costs have been acting as an obstacle towards the commercialization of automotive LiDARs. Current ADAS products incorporating LiDAR can incur additional costs upwards of $10,000 on average, with most manufacturers achieving economies of scale only by 2030. While there are non-automotive applications exits for LiDAR, MicroVision will face developmental bottlenecks due to the high cost of the technology. Any attempt to pivot its product will be futile as it will take years of development before it is able to achieve the economies of scale required to have a product ready for mass market.

Fig 2: Comparison of ADAS features

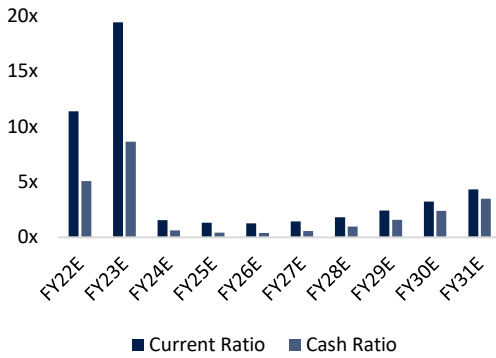|	LiDAR	Radar	Vision
Range	350m	300m	250m
Lane Tracking	✗	✗	✓
Object Recognition	✗	✗	✓
Rain, Snow, Fog	✗	✓	✗

Source: Tesla, Blickfeld, Aeva

Fig 3: ADAS Sensor Segment Market Size $bn
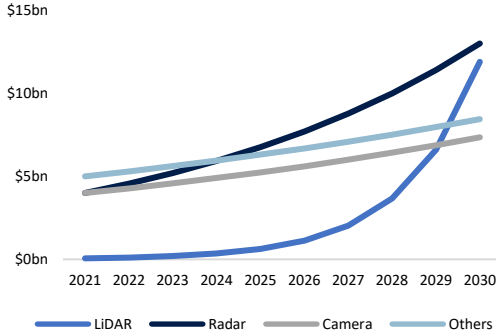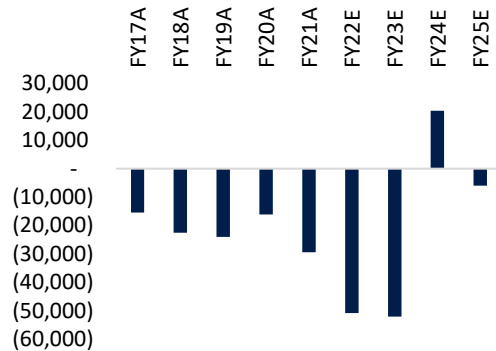

Source: McKinsey

Fig 4: Declining Current and Cash Ratios

Source: Team Analysis

Fig 5: MVIS Operating Cash Flows

Source: Team Analysis

Fig 6: Share Price Sensitivity Analysis

		EBITDA Exit Multiple				
		10.0 x	12.8 x	**15.6 x**	17.8 x	20.0 x
WACC	19.55%	$1.55	$1.96	$2.37	$2.69	$3.01
	20.55%	$1.43	$1.81	$2.18	$2.48	$2.77
	21.55%	$1.32	$1.67	**$2.01**	$2.29	$2.56
	22.55%	$1.21	$1.54	$1.86	$2.11	$2.37
	23.55%	$1.12	$1.42	$1.72	$1.95	$2.19

Source: Team Analysis

LiDAR Likely to be Irrelevant due to Alternative Technologies

MicroVision is operating in a highly saturated environment with more than 100 players in the automotive LiDAR market. With many new entrants looking to develop LiDAR and ADAS systems, MicroVision will be competing in a rapidly evolving market against various OEMs and Tier 1 suppliers, most of which are better positioned than MicroVision. Furthermore, due to the immature state of LiDAR and ADAS, alternative technologies are likely to emerge which will adversely affect the business prospects of MicroVision. The current state of LiDAR is insufficient to achieve L3 and beyond autonomy due to its limited features. New technologies such as computer vision have superior capabilities, enabling ADAS systems to interpret and understand the environment through artificial intelligence (Fig 2). Furthermore, LiDAR is not a necessity in ADAS systems, with cheaper technologies such as Radar having similar capabilities such as environment and range detection. With an inability to achieve L3 and beyond autonomy at its current state, LiDAR will likely become obsolete due to developments in alternative technologies.

Historical Inability to Commercialize their Products

MicroVision has a historical track record of not being able to successfully develop and commercialise any of its product lines. Throughout the company's history, they have combined their patented LBS technology along with development expertise to create innovative solutions that addresses various distinct markets such as AR headset components, high-resolution miniature displays, as well as consumer LiDAR products for use with smart home systems. However, the company has not been able to solidify a successful commercial product and has pivoted its product line-up 6 times in the past 30 years. The company has not been able to consistently grow revenues and has been making a net loss since 2012, with an accumulated deficit of $650mn as of Q2 2022. With current CEO Sumit Sharma being a key executive at MicroVision since 2015, the company's strategy is unlikely to change.

Financial Takeaways

Profitability Margins: Over the past 5 years, MVIS's EBITDA margin has been declining due to unstable revenue sources and high operating expense costs. In FY21, operating expense costs amounted to 1796% of the revenue. The margin is expected to decrease before improving in FY24 as it grows at a CAGR of 7.86% through FY31 with the release of the LiDAR product. We foresee MVIS to only turn net income positive in FY2024.

Poor Liquidity: MVIS' liquidity ratios (current, quick, and cash ratios) are poised to decline, due in part to their cash burn. MVIS only forecasted to register positive operating cash flows from FY2026 onwards. Although MVIS has a positive operating cash flow in FY2024, it is due to the launch of the LiDAR product.

Further Shareholder Dilution: MVIS leverage ratio has remained consistently low over the past 5 years and we expect it to remain at a low level through FY31. With MVIS' historical practice of not issuing debt, they will be forced into a secondary right offering valued at c. $57mn, which is highly dilutive to existing shareholders.

Valuation

DCF Valuation: We attained a target price of $2.57 (-47.34%) with a 10-year DCF model, with a 15.6x EBITDA Exit Multiple from peers and WACC of 21.55%. Relative valuation was not considered as MVIS is pre-revenue.

Scenario Analysis: Our bull case forecasts MVIS achieving a positive net income in FY24 as the company introduces the sale of its ADAS solution in the market, yielding a target price of $5.37 (+9.89%). Our bear case forecasts MVIS achieving a positive net income in FY27, with a target price of $1.24 (-74.65%).

While development efforts are primarily focused on its ADAS solution, we do not believe MVIS can achieve a positive net income before FY27 due to high operating costs and the company's historical inability to commercial its products and secure customers. Incurring losses since inception, we reiterate our **SELL** recommendation for MVIS with a target price of **$2.57 (-47.34%)**.

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