Aurelian Manufacturing

Production as a Service —
Autonomous, Data-Driven, and Scalable

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Investment Thesis – Market Outlook

Structural demand drivers span over 30+ years

High demand in Defense, energy, maritime & critical industries

Geopolitics, energy transition, skills shortage

Structural demand for advanced manufacturing is being reinforced by multi-year defence and critical-industry programmes in Europe, alongside higher requirements for supply security, traceability and delivery reliability. At the same time, the energy transition and a persistent skills shortage are increasing complexity and accelerating the shift toward more autonomous, digitally controlled production.

Defence: multi-year ramp-up

- NATO: pathway toward 5% of GDP by 2035 (min. 3.5%coredefence)
- Norway: 2025–2036 plan: NOK 1,624bn total / NOK 600 bn uplift

Hadrian: category signal (US),relevant lessons for Europe

- Founded Nov 2020
- Latest round: ~$1.6B valuation, led by T. Rowe Price; Andreessen Horowitz (a16z) participated

Energy transition &industrialmodernisation

- More complex systems →tightertolerances +documentation
- Shifts value from lowestpriceto reliability and compliance

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Problem we solve

- HMLV **[High Mix – Low Volume]** workshops are not designed for high machine utilization
- Automation without system architecture delivers limited impact
- High dependency on individuals limits scalability
- Brownfield constraints make 60–65% utilization structurally unrealistic

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Market Timing – Why Aurelian – Why Now

- Defense & energy capex accelerating faster than supply
- Structural CNC capacity gap in Europe
- Autonomy + digital maturity now economically viable
- Greenfield advantage before legacy players adapt

We are at a rare inflection point where demand in defense, energy and critical industries is accelerating, while available precision manufacturing capacity is structurally constrained. At the same time, autonomy, digital twins and unmanned CNC operations have reached a level of maturity where high utilization in HMLV is finally bankable.
A majority of current workshops are held back by legacy layouts, culture and systems. Aurelian is built greenfield for this moment

Aurelian Manufacturing – The Solution

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Autonomouse manufacturing

Aurelian is built as a greenfield, autonomous manufacturing platform designed for high-mix, low-volume production. From day one, the factory is optimized for lights-out operation, high utilization and predictable performance.

Digital backbone

A single, standardized digital backbone aligns machines, people and workflows troughout the supplychain, enabling sub-linear scaling, early break-even and modular expansion. This creates a repeatable industrial platform delivering reliable, transparent manufacturing capacity for critical industries.

- Greenfield autonomous HMLV by design
- Digital-first, standardized production platform
- Sub-linear scaling economics
- Aligned ecosystem from machine to customer

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Why Aurelian Wins – Greenfield by design

- Utilization gap, not price, drives value
- Greenfield autonomy vs. legacy constraints
- Sub-linear cost structure
- Replicable industrial blueprint

When we benchmark seven leading Norwegian CNC companies, the pattern is clear: even the best operators top out at around 40–45% utilization, most far lower. That's not a competence issue — it's structural. Legacy layouts, manual dependencies and incremental automation cap performance. Aurelian is designed to bypass those constraints entirely. By building greenfield around autonomous HMLV from day one, we unlock a fundamentally different utilization and cost curve.

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Economic Engine – CNC Machine utilization

TARGET

60–65%

UTILIZATION

Year	CNC	Utilization	Revenue (MNOK)	Cost (MNOK)	EBIT (MNOK)
2028	4	~30–35 %	~33	~35	~-2
2029	8	~40–45 %	~95	~60	~35
2030	14	~45–55 %	~185	~85	~100
2031	20	~60 %	~315	~102,5	~212,5

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Sub-linear Scaling Logic

Year	CNC	Staff	Utilization	Revenue (MNOK)	Total Cost (MNOK)	Profit Before Tax (MNOK)
2028	4	**6**	~30–35%	~33	~35	~-2
2029	8	**10**	~40–45%	~95	~60	~35
2030	14	**13**	~45–55%	~185	~85	~100
2031	20	**16**	~60%	~315	~102.5	~212.5

MAZAK iSMART Factory™ : Automation and IoT

Cost structure – full scale

Cost component	Estimate	Annual cost (MNOK)
Operational payroll	16 employees at 1.1 MNOK	~17.6
Administration	3 senior positions at 1.4 MNOK	~4.2
Machine depreciation	20 × 0.8 MNOK	~16.0
Financial cost (interest)	20 × 8 MNOK × 7.5%	~12.0
Variable costs	13% of revenue	~44.5
Other operating costs	Facilities, IT, insurance, etc.	~8.2
Total cost		**~102.5**

Sub-linear scaling means that each additional CNCmachine adds more capacity than cost. Headcount grows,but materially slower than output.

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Steady State Potential – 20 CnC Machines

CNC Utilization	Revenue (MNOK)	EBIT (MNOK)
~20%	~105	~2.5
~30%	~158	~55.5
~40%	~210	~107.5
~50%	~263	~160.5
~60%	~315	~212.5

Well runned legacy shop

At steady state, the organization is operationally mature, with standardized core processes, well tuned team, stabilized automation and established, long-term customer relationships.

At this stage, the factory operates in the approach toward the validated 60–65% utilization sweet spot for autonomous HMLV production.

Steady state also provides strategic optionality: capacity expansion, replication of the factory model, or further utilization optimization can be pursued without materially changing the overall risk profile.

Validated business model

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Benchmark Companies

Company	CNC-machines	Estimated CNC-utilization
Rogaland Maskinering	7	~10 %
Lilaas	15	~19 %
Tamek	8	~20 %
Aarbakke	55	~38 %
Uvdal Maskinfabrikk	11	~37 %
Årdal Maskinering	18	~47 %
TP-Products (OEM)	14	~40–45 %
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Estimated utilization based on publicly available information and industry benchmarks; Aurelian target reflects autonomous HMLV operations by design.

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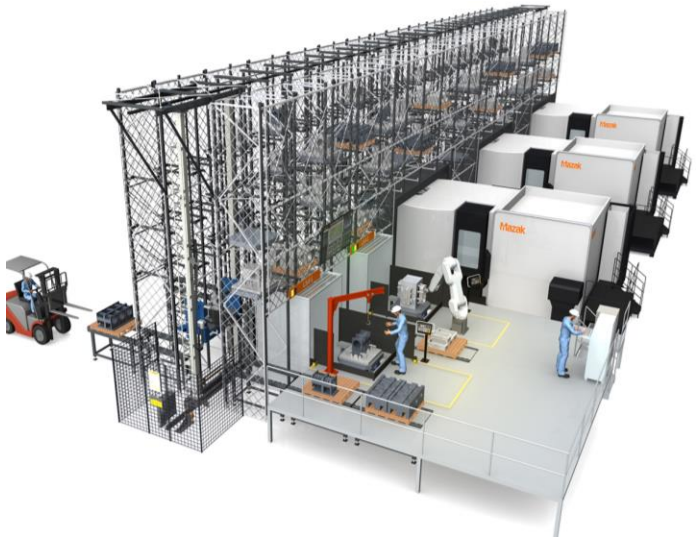
Break Even – Risk Profile

- Early break-even
- Greenfield reduces structural risk
- Customer risk mitigated through phased ramp-up



Break-even at roughly 15–20% utilization, Aurelian reaches cash-flow positive with four to five machines. This creates a very low operational downside compared to traditional workshops, with higher fixed staffing, manual processes and legacy layouts.

Established players carry structural constraints that cap utilization and limit scalability. Aurelian's greenfield setup removes those constraints. Customer ramp-up is absorbed gradually within a low break-even envelope, supported by long-cycle demand from defense, energy and other critical industries where capacity, not price, is the binding constraint.

Capital Structure

Pre-Seed: Structuring & de-risking
The Pre-Seed round is designed to secure the foundation: key commercial, industrial and financing agreements. The capital need is limited and highly targeted.

Seed: Go-decision & industrial commitment
The Seed round represents the go-decision, enabling binding commitments with the real estate developer and CNC machine supplier, and initiating the first phase of the factory build-out.

Series A: Phased capacity build-out
Series A capital is driven by scaling. While the total investment per CNC is well defined, the equity portion will be determined by utilization, cash generation and asset-backed debt capacity at that time.

Disciplined, stepwise capital deployment
The capital strategy is deliberately phased to minimize dilution, align risk with operational maturity, and deploy equity only where it creates structural value.

Utilization: 4 machines out of a potential of 20

Capacity Utilization in High-Mix / Low-Volume (HMLV) Manufacturing

Aurelian aims to become best-in-class at managing the factors that drive transaction costs and changeovers in machining operations, including, for example: frequent setups and tool changes, order-specific programming, variation in materials and tolerances, priority changes and waiting time, quality control, documentation, and value-chain punctuality.

Industry benchmark – actual machine utilization:

≈ **6,000 hours per year per machine**, corresponding to **~68.5% utilization**, is considered **exceptionally high** in a small-batch / HMLV manufacturing environment.

High-Mix / Low-Volume (HMLV) Manufacturing	Typical utilization
Traditional small-batch job shop	**30–40 %**
Well-run HMLV manufacturing	**40–55 %**
Digitized / automated HMLV manufacturing	**55–65 %**
★ **Exceptional / lights-out HMLV manufacturing**	**65–70 %** **Target for Aurelian Manufacturing**
World-class serial production	**80–85 %**

Why HMLV operates at lower utilization than serial production
Frequent setups and tool changes, order-specific programming, variation in materials and tolerances, priority changes and waiting time, and batch-level quality control. **Capacity is primarily lost to transaction costs, not cutting time.**

Margin logic in Norwegian high-precision manufacturing
Oil & Gas | Defence | Critical components High profitability — even at low capacity utilization.

Norwegian machining companies supplying **Oil & Gas, defence, and other regulated high-precision segments** operate structurally with:high hourly rates, stringent quality requirements, low price elasticity, strong willingness to pay for reliability, documentation, and precision.

In these markets, it is **common and economically sustainable to achieve very strong margins already at 30–40% capacity utilization**.

Traditional HMLV job shop (30%)

Category	Utilized Hours	Budget (NOK)
Turning	2,628	7,884,000
Milling	5,256	15,768,000
Combo	2,628	7,884,000
Total	**10,512**	**31,536,000**

Well-run HMLV shop (45%)

Category	Utilized Hours	Budget (NOK)
Turning	3,942	11,826,000
Milling	7,884	23,652,000
Combo	3,942	11,826,000
Total	**15,768**	**47,304,000**

★ Exceptional / lights-out HMLV (70%)

Category	Utilized Hours	Budget (NOK)
Turning	6,132	18,396,000
Milling	12,264	36,792,000
Combo	6,132	18,396,000
Total	**24,528**	**73,584,000**

Sources: JIPM / Nakajima – *Introduction to TPM* → 85% OEE defined as world-class, primarily for repetitive production. McKinsey & Company – *Overall Equipment Effectiveness: What Good Looks Like* → HMLV environments have structurally lower utilization due to variability. Fraunhofer IPT / IWU – Studies on *Job Shops & Variant Production* → 35–50% typical, 55–60% best-in-class HMLV. Siemens Digital Industries – *Digitalization in Job Shop Manufacturing* → 55–65% achievable with high digital maturity.

Team & Governance

André Tandberg

Co-Founder and CEO

André Tandberg is combining operational leadership with early-stage industrial funding experience.

André is Managing Director of Østfold Follo Nyskapingsfond, a regional pre-seed fund that was fully invested in 2022, and serves on the board of listed bank SpareBank 1 Østfold Akershus. He has previously been project manager and board member in the industrial cluster Necia Tech Cluster, working closely with manufacturing companies, investors and public stakeholders.

At Aurelian, André drives overall strategy, capital allocation and key relationships with customers, suppliers and owners, ensuring that the lights-out machining platform is built as a controlled and investable industrial asset.

Tore Ausland

VP Business Development & Co-Founder

Tore Ausland brings 30+ years of operational and commercial experience from the oil and gas industry, including supplier development and delivery assurance for GE, FMC and Aker, serving major operators like Statoil (Equinor), Hydro, Shell and BP.

With leadership roles across industrial technology companies and coordination of a 5 MEUR European scale-up project, he combines technical depth with business execution.

At Aurelian , Tore drives enterprise partnerships, anchor customers and market strategy—translating industry requirements into scalable, autonomous and data-driven machining capacity.

Henrik Strøm

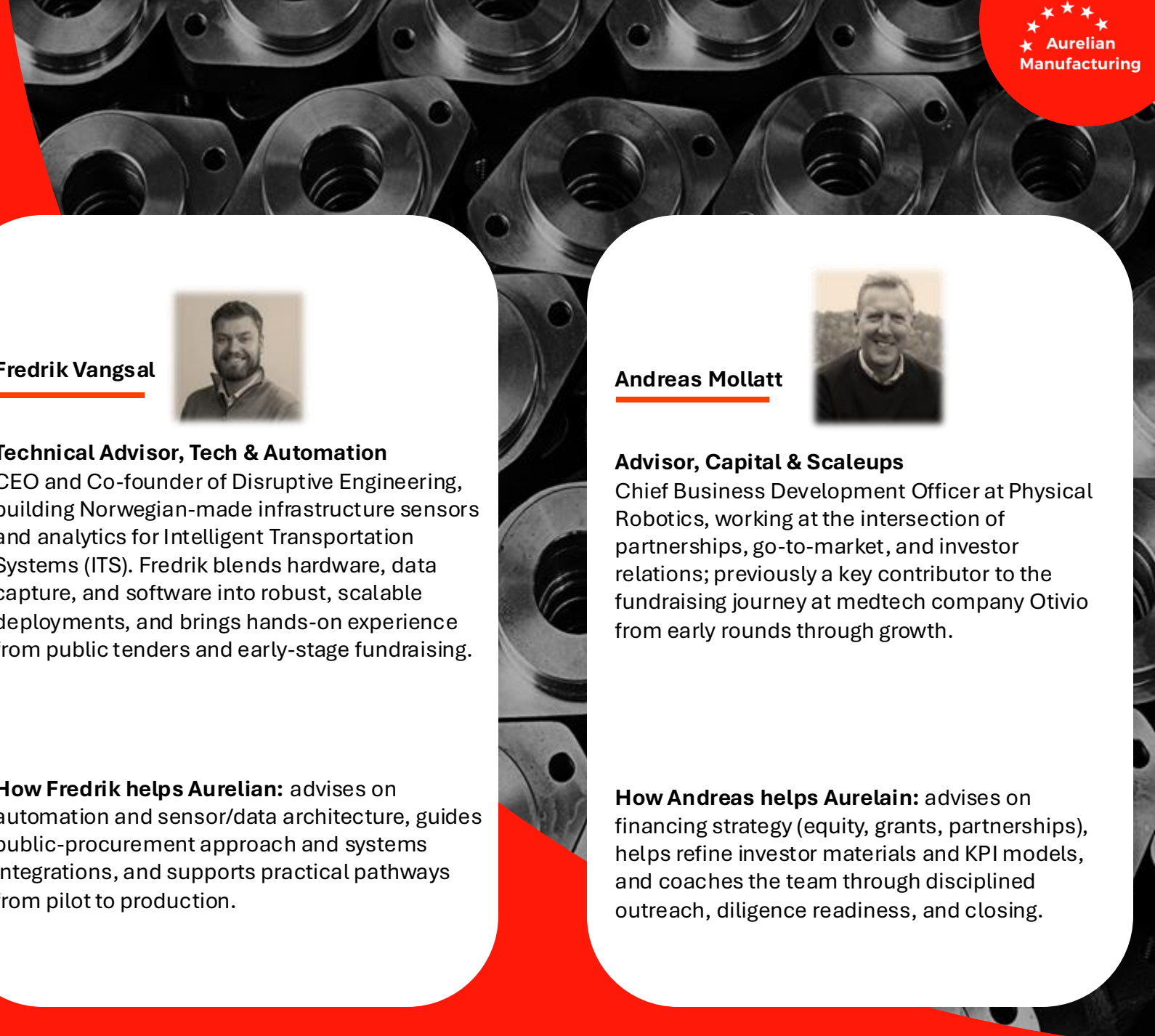
Board member

Henrik Syverstad Strøm is a financial advisor with ~10 years of experience in banking and finance, specializing in cash management, corporate advisory, and financial governance. He has worked closely with companies on liquidity management, financial structuring, and bank interaction.

He is currently affiliated with Trøgstad Sparebank and Eika Økonomi Øst AS, supporting corporate clients with robust and forward-looking financial solutions. Henrik holds a Bachelor's degree in Business Administration and Business Law from BI Norwegian Business School.

At Aurelian Henrik serves as Board member and assisting in establishing financial structure, reporting, bank dialogue, and a bankable financial model in the early phase.

Adivisors



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Bjørnar Torsnes

Advisor, Industry & Scaling
Founder and Chairman of CodeIT Group, a Nordic industrial software company delivering traceability, coding/marking and systems integration to demanding production environments. Under Bjørnar's leadership, CodeIT has served marquee manufacturers—Volkswagen, TINE, Mowi (Marine Harvest), Boliden, Elkem, Orkla, Lantmännen, Cermaq, among others—while evolving into a platform-driven provider for multi-site scale.

How Bjørnar helps Aurelian: advises on enterprise sales and partnership strategy, introduces relevant industrial contacts, and offers guidance on architecture/product choices that support reliable operations at scale.

Fredrik Vangsal

Technical Advisor, Tech & Automation
CEO and Co-founder of Disruptive Engineering, building Norwegian-made infrastructure sensors and analytics for Intelligent Transportation Systems (ITS). Fredrik blends hardware, data capture, and software into robust, scalable deployments, and brings hands-on experience from public tenders and early-stage fundraising.

How Fredrik helps Aurelian: advises on automation and sensor/data architecture, guides public-procurement approach and systems integrations, and supports practical pathways from pilot to production.

Andreas Mollatt

Advisor, Capital & Scaleups
Chief Business Development Officer at Physical Robotics, working at the intersection of partnerships, go-to-market, and investor relations; previously a key contributor to the fundraising journey at medtech company Otivio from early rounds through growth.

How Andreas helps Aurelain: advises on financing strategy (equity, grants, partnerships), helps refine investor materials and KPI models, and coaches the team through disciplined outreach, diligence readiness, and closing.

Facility

Requirements

Location: TBD, but Østfold will be selected for its strategic position close to one of Norway's key logistics hubs with excellent access to road, railway, and marine transport, as well as proximity to international European markets.

Size: 2600 m2 with shop floor and mezzanine lagre enough to scale to more than 20 + CNC machine operations.

Infrastructure: Strategic developer Norbygg.

Layout: Shop layout defined