

# Aurelian Manufacturing Ecosystem: Implementation Playbook

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**OBJECTIVE:** This playbook provides a comprehensive, actionable 10-year implementation plan for building the Aurelian Manufacturing ecosystem in Norway and Scandinavia. It translates strategic insights into practical, executable guidance for the Aurelian leadership team, investors, and key ecosystem stakeholders.

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## 1. PHASE-BY-PHASE ROADMAP

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This roadmap outlines the 10-year journey to build the Aurelian Manufacturing Ecosystem, broken down into four distinct phases. Each phase includes specific actions, milestones, deliverables, timelines, resource requirements, and dependencies.

### Phase 1: Foundation (Years 0-2)

**Objective:** Establish the core legal, financial, and operational foundation of the ecosystem. Secure foundational partners and launch high-impact pilot projects to demonstrate value and build momentum.

Category	Details
<b>Key Actions</b>	<p>1. <b>Legal &amp; Governance:</b> Legally incorporate the “Aurelian Ecosystem Orchestrator” (AEO) as a neutral, non-profit consortium. Finalize governance charter, board structure, and membership agreements.</p> <p>2. <b>Team Building:</b> Recruit the core AEO leadership team (CEO, CTO, Head of Partnerships).</p> <p>3. <b>Funding:</b> Secure initial seed funding through a Public-Private Partnership (PPP) model, targeting grants from Innovation Norway and relevant EU funds (e.g., Horizon Europe).</p> <p>4. <b>Partnerships:</b> Formalize foundational partnerships via MOUs with the Norwegian government, NTNU, SINTEF, and 3-5 key industrial players, including Aurelian Manufacturing.</p> <p>5. <b>Infrastructure:</b> Establish physical headquarters and launch the beta version of the central digital collaboration platform.</p> <p>6. <b>Pilot Projects:</b> Launch 2-3 high-impact pilot projects. <b>Priority 1: Predictive Maintenance</b> with a select group of 5-10 SMEs to demonstrate clear ROI.</p>
<b>Milestones</b>	<ul style="list-style-type: none"> <li>- AEO legally incorporated (Q1, Year 1).</li> <li>- Core leadership team hired (Q2, Year 1).</li> <li>- €10M in seed funding secured (Q4, Year 1).</li> <li>- 25 founding members (including 15 SMEs) onboarded (Q4, Year 2).</li> <li>- Predictive Maintenance pilot project completed with a documented &gt;15% reduction in unplanned downtime for participants (Q4, Year 2).</li> </ul>
<b>Deliverables</b>	<ul style="list-style-type: none"> <li>- AEO Legal Charter &amp; Bylaws.</li> <li>- Signed PPP Funding Agreement.</li> <li>- Signed MOUs with foundational partners.</li> <li>- Membership Agreement Template.</li> <li>- Functional Beta Digital Platform.</li> <li>- Pilot Project Final Report &amp; Case Study.</li> </ul>
<b>Timeline</b>	Years 0-2
<b>Resource Req.</b>	<ul style="list-style-type: none"> <li>- <b>Funding:</b> €10-15M (from public grants and founding partner contributions).</li> </ul>

Category	Details
	<ul style="list-style-type: none"> <li>- <b>Personnel:</b> 5-8 FTEs (CEO, CTO, Partnerships, Admin).</li> <li>- <b>Infrastructure:</b> Leased office space, initial cloud hosting for digital platform.</li> </ul>
<b>Dependencies</b>	<ul style="list-style-type: none"> <li>- Commitment from Aurelian Manufacturing to act as the lead orchestrator.</li> <li>- Positive engagement from Norwegian government agencies (Innovation Norway).</li> <li>- Availability of qualified leadership talent.</li> </ul>

## Phase 2: Growth (Years 2-5)

**Objective:** Scale membership, expand service offerings, establish specialized technology hubs, and launch the patient capital fund to fuel member growth.

Category	Details
<b>Key Actions</b>	<p>1. <b>Scale Membership:</b> Launch a targeted campaign to grow membership to over 100 companies, with a focus on SME integration across the Oil &amp; Gas, land-based industry, and defense supply chains.</p> <p>2. <b>Establish Tech Hubs:</b> Launch the first two specialized technology hubs, inspired by the Fraunhofer/Manufacturing USA model. <b>Hub 1: Nordic Center for Sustainable Manufacturing</b> (focus on circular economy, advanced materials). <b>Hub 2: Digital Engineering &amp; Automation Hub</b> (focus on digital twins, AI-powered quality control).</p> <p>3. <b>Launch Patient Capital Fund:</b> Structure and launch the “Scandinavian Patient Capital Fund” with an initial close. Secure commitments from sovereign funds, pension funds, and private LPs.</p> <p>4. <b>Expand AI Services:</b> Scale the predictive maintenance offering. Launch a new ecosystem-wide initiative in <b>AI-Powered Quality Control</b>, providing members with shared tools and training.</p> <p>5. <b>Talent Development:</b> Launch the “Aurelian Ecosystem Apprenticeship Program” in partnership with the Norwegian VET system, placing the first cohort of apprentices.</p>
<b>Milestones</b>	<ul style="list-style-type: none"> <li>- Ecosystem membership exceeds 100 active companies (70% SMEs) (Q4, Year 4).</li> <li>- Two technology hubs are fully operational with dedicated staff and shared facilities (Q2, Year 4).</li> <li>- Scandinavian Patient Capital Fund achieves first close of €50M (Q4, Year 3) and makes its first 3-5 investments (Q4, Year 4).</li> <li>- 50 apprentices placed in member companies (Q4, Year 5).</li> <li>- 30% of members have adopted AEO-supported AI tools.</li> </ul>
<b>Deliverables</b>	<ul style="list-style-type: none"> <li>- Charters for two Technology Hubs.</li> <li>- Patient Capital Fund Prospectus and LP Agreements.</li> <li>- AI Quality Control Toolkit for members.</li> <li>- Formal partnership agreement with VET au-</li> </ul>

Category	Details
	<p>thorities.</p> <ul style="list-style-type: none"> <li>- Annual Ecosystem Impact Report.</li> </ul>
Timeline	Years 2-5
Resource Req.	<ul style="list-style-type: none"> <li>- <b>Funding:</b> €30-40M operational budget (from member fees, public funding, service revenue). €100M target for Patient Capital Fund.</li> <li>- <b>Personnel:</b> 15-20 FTEs (AEO core team + Hub Directors).</li> <li>- <b>Infrastructure:</b> Leased lab/testbed space for technology hubs.</li> </ul>
Dependencies	<ul style="list-style-type: none"> <li>- Successful demonstration of value in Phase 1.</li> <li>- Ability to attract qualified fund managers for the Patient Capital Fund.</li> <li>- Strong industry demand for specialized technology hubs.</li> </ul>

### Phase 3: Maturity (Years 5-8)

**Objective:** Achieve critical mass and establish the ecosystem as a central pillar of Scandinavian industry. Drive deep capability maturation and begin large-scale integration of autonomous systems.

Category	Details
<b>Key Actions</b>	<p><b>1. Deepen Capabilities:</b> Drive ecosystem-wide capability maturation using the CMM framework. Goal: 60% of member SMEs achieve CMM Level 3 (“Defined”) for digital manufacturing processes.</p> <p><b>2. Integrate Autonomous Systems:</b> Launch a major initiative focused on integrating autonomous systems (e.g., AMRs for logistics, cobots for assembly) through the Digital Engineering Hub.</p> <p><b>3. Expand Hub Network:</b> Launch a third technology hub based on market needs, e.g., <b>“Nordic Center for Green Energy Technologies”</b> (serving offshore wind, hydrogen).</p> <p><b>4. Secure Financial Sustainability:</b> Transition AEO’s operational funding model to be &gt;50% self-sustaining through membership fees, service revenue, and returns from the patient capital fund.</p> <p><b>5. Policy Leadership:</b> Establish the AEO as a key policy advisor to national and Nordic governments on industrial strategy.</p>
<b>Milestones</b>	<ul style="list-style-type: none"> <li>- Ecosystem membership exceeds 250 companies (Q4, Year 8).</li> <li>- Average digital capability of members reaches CMM Level 3 (Q4, Year 8).</li> <li>- Patient Capital Fund fully deployed and raising a second fund (Q2, Year 7).</li> <li>- AEO achieves &gt;50% financial self-sustainability (Q4, Year 8).</li> <li>- At least 10 large-scale collaborative projects (€5M+) successfully completed.</li> </ul>
<b>Deliverables</b>	<ul style="list-style-type: none"> <li>- CMM Assessment &amp; Benchmarking Report for the ecosystem.</li> <li>- Autonomous Systems Integration Playbook for SMEs.</li> <li>- Charter for the third Technology Hub.</li> <li>- AEO Long-Term Financial Sustainability Plan.</li> <li>- Published policy white papers and recommendations.</li> </ul>
<b>Timeline</b>	Years 5-8

Category	Details
<b>Resource Req.</b>	<ul style="list-style-type: none"> <li>- <b>Funding:</b> €20-25M annual operational budget. Patient Capital Fund II raises €200M+.</li> <li>- <b>Personnel:</b> 25-30 FTEs.</li> <li>- <b>Infrastructure:</b> Expansion of shared facilities and digital platform capabilities.</li> </ul>
<b>Dependencies</b>	<ul style="list-style-type: none"> <li>- Continued strong performance and ROI from ecosystem activities.</li> <li>- Favorable macroeconomic conditions for industrial investment.</li> <li>- Maturation of autonomous systems technology to be accessible for SMEs.</li> </ul>

## Phase 4: Leadership (Years 8-10)

**Objective:** Establish the ecosystem as a globally recognized leader in its chosen niches. Achieve technology sovereignty in critical areas and foster a self-optimizing, innovative network.

Category	Details
<b>Key Actions</b>	<p><b>1. Achieve Technology Sovereignty:</b> Focus R&amp;D and investment on achieving regional technology sovereignty in 1-2 critical areas identified in the roadmap (e.g., sustainable composite materials, secure communication components for defense).</p> <p><b>2. Drive Global Standards:</b> Lead international working groups to establish standards in areas of ecosystem strength (e.g., circular manufacturing metrics).</p> <p><b>3. Foster Self-Optimizing System:</b> Evolve the digital platform to use AI for intelligent partner matching, supply chain risk prediction, and dynamic resource allocation across the network.</p> <p><b>4. Global Expansion:</b> Facilitate international partnerships for member companies, connecting the Scandinavian ecosystem with other leading global hubs (e.g., in Germany, US).</p> <p><b>5. Continuous Improvement:</b> Drive a significant portion of members towards CMM Level 4/5 ("Quantitatively Managed" and "Optimizing").</p>
<b>Milestones</b>	<ul style="list-style-type: none"> <li>- Recognized as a top-3 global ecosystem in at least one niche technology area (e.g., sustainable manufacturing) (Q4, Year 10).</li> <li>- Measurable reduction in dependency on non-European sources for a critical technology component (Q4, Year 10).</li> <li>- The ecosystem's digital platform becomes a predictive, self-optimizing tool for members.</li> <li>- 20% of members achieve CMM Level 4.</li> </ul>
<b>Deliverables</b>	<ul style="list-style-type: none"> <li>- Technology Sovereignty White Paper &amp; Roadmap.</li> <li>- Published international standards proposals.</li> <li>- AI-driven "Ecosystem Intelligence" module on the digital platform.</li> <li>- Formal agreements with 2+ international manufacturing ecosystems.</li> </ul>
<b>Timeline</b>	Years 8-10
<b>Resource Req.</b>	<ul style="list-style-type: none"> <li>- <b>Funding:</b> Fully self-sustaining operational budget. Continued growth of Patient Capital</li> </ul>



Category	Details
	<p>Funds.</p> <ul style="list-style-type: none"> <li>- <b>Personnel:</b> 30+ FTEs, with a focus on high-level strategic and data science roles.</li> <li>- <b>Infrastructure:</b> World-class, state-of-the-art shared R&amp;D facilities.</li> </ul>
<b>Dependencies</b>	<ul style="list-style-type: none"> <li>- Strong international reputation built in previous phases.</li> <li>- Cutting-edge R&amp;D capabilities within the university and industrial partners.</li> <li>- Geopolitical and trade policies that support international collaboration.</li> </ul>

## 2. GOVERNANCE AND ORGANIZATIONAL STRUCTURES

A robust and transparent governance structure is essential for building trust and ensuring the long-term success of the ecosystem. The proposed model is a hybrid, consortium-based structure designed for neutrality, inclusivity, and strategic alignment.

### Organizational Model: Hub-and-Spoke Consortium

The ecosystem will be structured as a **hub-and-spoke model** with a central orchestrator and specialized technology centers.

- **Aurelian Ecosystem Orchestrator (AEO):** A legally independent, non-profit entity serving as the central hub. Aurelian Manufacturing will act as the founding partner and initial orchestrator, but the AEO will be governed by a multi-stakeholder board.
  - **Responsibilities:** Strategic direction, ecosystem branding and marketing, managing the central digital platform, fundraising for core operations, onboarding new members, and coordinating between hubs.
- **Specialized Technology Hubs:** These are the “spokes” of the ecosystem, acting as centers of excellence. Each hub will be a semi-autonomous unit with its own director, budget, and technical focus, operating under the AEO’s strategic umbrella.
  - **Initial Hubs:**
    1. **Nordic Center for Sustainable Manufacturing:** Focus on circular economy, bio-based materials, and life-cycle assessment.
    2. **Digital Engineering & Automation Hub:** Focus on AI, digital twins, robotics, and assurance.
  - **Responsibilities:** Managing shared testbeds/labs, running technology-specific training programs, facilitating collaborative R&D projects, and providing expert consulting to members.

### Ecosystem Governance Framework

- **Consortium-Based Governance:** The AEO will be owned and directed by its members, preventing the dominance of any single entity and ensuring alignment with the collective interest.

- **Tiered Membership:**

- **Tier 1 (Strategic Partners):** Large enterprises (like Aurelian), government bodies, and universities. They contribute significant financial and in-kind resources and hold seats on the Board of Directors.
- **Tier 2 (Corporate Members):** Established companies that pay an annual fee for full access to all ecosystem resources.
- **Tier 3 (SME & Startup Members):** A subsidized tier to ensure broad participation from smaller companies, providing them access to essential resources at a lower cost.

## Decision-Making Processes

- **Strategic Decisions:** Made by the AEO Board of Directors (e.g., annual budget, launch of new hubs, changes to the strategic roadmap). Decisions require a supermajority vote to ensure consensus.
- **Operational Decisions:** Made by the AEO executive team (e.g., hiring, marketing campaigns) and Hub Directors (e.g., equipment procurement for labs, curriculum for training).
- **Project-Level Decisions:** Made by the participating members within a specific collaborative project, governed by a project charter that outlines roles, contributions, and IP rights.

## Board and Advisory Structures

- **AEO Board of Directors:** A 9-seat board to ensure balanced representation.
  - **Composition:** 2 seats for Aurelian Manufacturing (as founding orchestrator), 2 seats for Government/Public Agencies (e.g., Innovation Norway), 1 seat for Academia (rotating between NTNU, Chalmers, etc.), 3 seats elected by Tier 1 & 2 members, 1 seat for the AEO CEO (non-voting).
- **Technical Advisory Council (TAC):** Composed of leading technical experts from industry and academia.
  - **Role:** Provides non-binding guidance to the Board and Hub Directors on technology trends, R&D priorities, and the technical roadmap.
- **Hub Steering Committees:** Each hub will have a steering committee composed of technical experts from member companies active in that hub's domain. They will guide the hub's project portfolio and technology focus.

## Legal Considerations

- **Legal Entity:** The AEO should be established in Norway as a **Samvirkeforetak (SA)** or a **Stiftelse** (Foundation) to formalize its non-profit, cooperative nature and ensure long-term stability.
  - **Intellectual Property (IP) Policy:** A clear and transparent IP framework is critical for building trust.
    - **Background IP:** Remains the property of the contributing member.
    - **Foreground IP (Pre-Competitive R&D):** Results from jointly funded, pre-competitive projects (e.g., developing a new testing methodology) will be licensed non-exclusively and royalty-free to all ecosystem members.
    - **Foreground IP (Collaborative Projects):** IP generated in specific, narrowly defined projects will be owned by the project participants as defined in the project agreement. The AEO will provide legal templates to facilitate this.
  - **Data Governance:** A robust data sharing policy will be established, ensuring compliance with GDPR and defining clear rules for the use of anonymized, aggregated data on the central platform to generate ecosystem-wide insights.
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### 3. KPIs AND SUCCESS METRICS

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A data-driven approach to measuring success is critical. This framework uses a Balanced Scorecard approach to track performance across four key perspectives, with targets evolving for each phase.

## **Measurement Framework: The Ecosystem Balanced Scorecard**

Perspective	Key Performance Indicators (KPIs)	Phase 1 Target (Yr 2)	Phase 2 Target (Yr 5)	Phase 4 Target (Yr 10)
<b>Economic Impact</b>	1. Total Investment Leveraged (Public & Private)	€15M	€150M (incl. Patient Capital)	€500M+
	2. Revenue Growth of Member SMEs (Avg. YoY)			
	3. Jobs Created/ Upskilled within Ecosystem			
	4. Number of New Products/ Services Launched by Members			
		5%	10%	15%+
		50	500	2,000+
		10	50	200+
<b>Member &amp; Stakeholder Value</b>	1. Number of Active Members (SME %)	25 (60%)	100+ (70%)	300+ (60%)
	2. Member Retention Rate			
	3. Member Satisfaction (Net Promoter Score - NPS)			
	4. Number of Apprentices Placed			
		N/A	85%	90%+
		+20	+40	+50
		0	50	250+
	1. Number of Collaborative R&D Projects Ini-	5	30	100+

Perspective	Key Performance Indicators (KPIs)	Phase 1 Target (Yr 2)	Phase 2 Target (Yr 5)	Phase 4 Target (Yr 10)
<b>Internal Processes &amp; Capability</b>	1. Average Capability Maturity of Members (CMM Level) 2. Cycle Time for Onboarding New Members 3. Digital Platform Engagement (Monthly Active Users)			
		Level 1.5	Level 2.5	Level 3.5
		< 4 weeks	< 2 weeks	< 1 week
		50%	75%	90%
<b>Innovation &amp; Learning</b>	1. Number of Joint Patents Filed 2. Number of University Research Collaborations 3. Number of Workers Trained/Certified 4. Number of International Partnerships	1-2	10+	50+
		3	10	25+
		100	1,000	5,000+
		0	1	5+

## 4. PRACTICAL IMPLEMENTATION GUIDANCE

This section provides operations-ready plans and templates to guide the initial execution and long-term management of the ecosystem.

## First 100 Days Action Plan

Timeline	Key Actions
<b>Days 1-15</b>	<ul style="list-style-type: none"> <li>- Finalize and file legal incorporation documents for the AEO.</li> <li>- Secure temporary office space.</li> <li>- Appoint interim Board of Directors.</li> <li>- Finalize job descriptions for CEO and CTO.</li> </ul>
<b>Days 16-45</b>	<ul style="list-style-type: none"> <li>- Launch executive search for CEO and CTO.</li> <li>- Secure initial tranche of PPP funding.</li> <li>- Develop detailed budget for Year 1.</li> <li>- Begin outreach to foundational partners (NTNU, SINTEF, key industry players) to draft MOUs.</li> </ul>
<b>Days 46-75</b>	<ul style="list-style-type: none"> <li>- Hire CEO and CTO.</li> <li>- CEO and Board finalize the 100-day plan and Year 1 strategic objectives.</li> <li>- Sign MOUs with at least 3 foundational partners.</li> <li>- Develop the ecosystem brand identity and launch a basic website.</li> </ul>
<b>Days 76-100</b>	<ul style="list-style-type: none"> <li>- Hire Head of Partnerships.</li> <li>- Finalize Membership Agreement templates and fee structure.</li> <li>- Announce the official launch of the Aurelian Manufacturing Ecosystem via a press release and stakeholder event.</li> <li>- Begin recruitment of the first 10 founding members.</li> <li>- Scope and define the first pilot project (Predictive Maintenance).</li> </ul>

## **Stakeholder Engagement Playbook**



Stakeholder Group	Key Interests	Engagement Strategy
<b>Government Agencies</b> (Innovation Norway)	Economic growth, job creation, technology sovereignty, green transition.	<ul style="list-style-type: none"> <li>- Position the AEO as a key partner for implementing national industrial strategy.</li> <li>- Provide regular, data-driven reports on KPIs (jobs, investment).</li> <li>- Co-author grant applications for EU funding.</li> <li>- Invite officials to sit on the Board.</li> </ul>
<b>Universities &amp; Research Orgs</b> (NTNU, Chalmers, SINTEF)	Research funding, access to real-world data/problems, talent placement for students.	<ul style="list-style-type: none"> <li>- Establish formal partnership agreements for joint R&amp;D.</li> <li>- Co-fund PhD and Post-Doc positions.</li> <li>- Create a streamlined process for student internships and apprenticeships with member companies.</li> <li>- Involve leading professors in the Technical Advisory Council.</li> </ul>
<b>Large Industrial Partners</b>	Access to innovation, de-risked R&D, talent pipeline, resilient supply chain.	<ul style="list-style-type: none"> <li>- Offer Board seats and leadership roles in Hub Steering Committees.</li> <li>- Facilitate pre-competitive, cost-sharing R&amp;D projects.</li> <li>- Showcase their technology and leadership within the ecosystem.</li> </ul>
<b>SMEs &amp; Startups</b>	Access to technology, funding, new customers, expertise, and talent.	<ul style="list-style-type: none"> <li>- Offer subsidized membership and access to expensive equipment/software.</li> <li>- Create a clear value proposition: the AEO helps them compete and grow.</li> <li>- Use the digital platform to connect them with large partners and new markets.</li> <li>- Prioritize them for pilot projects and Patient Capital Fund investments.</li> </ul>

Stakeholder Group	Key Interests	Engagement Strategy
<b>Investors</b> (VCs, Patient Capital Funds)	Deal flow, de-risked investment opportunities, industry insights.	<ul style="list-style-type: none"> <li>- Position the ecosystem as a curated source of high-potential manufacturing startups.</li> <li>- Co-host pitch events and investor days.</li> <li>- Share anonymized trend data and insights from the ecosystem.</li> </ul>

## Technology Roadmap

The technology strategy is centered on the **AI-First** principle and the central digital platform.

### • Central Digital Platform:

- **Phase 1:** Launch with core features: Member Directory, Communication Forums, Project Management Tools, Knowledge Base.
- **Phase 2:** Add Partner Discovery modules, a Marketplace for member services, and integration with Hub testbed scheduling.
- **Phase 4:** Introduce AI-driven “Ecosystem Intelligence” for predictive supply chain risk analysis and intelligent partner matching.

### • Hub Technology Rollout:

- **Years 1-3 (Foundation):** Focus on foundational, high-ROI AI. Provide members with toolkits and training for **Predictive Maintenance** using sensor data and machine learning.
- **Years 4-6 (Scale):** Expand into process optimization. Introduce **AI-Powered Quality Control** (computer vision) and initial **Digital Twin** simulations for critical assets.
- **Years 7-10 (Autonomy):** Focus on system-level intelligence. Support large-scale integration of **Autonomous Mobile Robots (AMRs)** and factory-wide digital twin optimization.

## Funding Strategy

A three-layered approach to ensure access to the right capital at the right time.

### 1. Layer 1: Public De-Risking (Years 0-5):

- **Action:** Secure initial and ongoing grants from public sources.
- **Targets:** Innovation Norway (€5-10M seed), EU Horizon Europe (for collaborative R&D projects), SkatteFUNN (R&D tax credits for member projects).
- **Purpose:** Fund AEO core operations, shared infrastructure, and pre-competitive research.

### 2. Layer 2: Patient Capital (Years 3-10+):

- **Action:** Establish and manage the **Scandinavian Patient Capital Fund**.
- **Targets:** €100M for Fund I. LPs to include Norwegian sovereign wealth funds (e.g., Folketrygd-fondet), pension funds (e.g., KLP), and family offices.
- **Purpose:** Make long-term equity investments (€2-10M) in member companies to bridge the “scale-up” manufacturing gap.

### 3. Layer 3: Commercial Lending (Years 4-10+):

- **Action:** Develop a **Government-Backed Loan Guarantee Program**.
- **Targets:** Partner with major Norwegian banks (e.g., DNB, Nordea) to provide guarantees on 50-70% of loans for capital equipment and facility expansion.

- **Purpose:** Unlock non-dilutive growth capital for mature SMEs ready to scale production.

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## 5. RISK MITIGATION AND CONTINGENCY PLANS

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A proactive approach to risk management is essential for navigating the complexities of building an ecosystem.

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy	Contingency Plan
<b>Financial</b>	<b>Funding Shortfall:</b> Failure to secure sufficient public or private funding to sustain operations.	Medium	High	<ul style="list-style-type: none"> <li>- Diversify funding sources (public, private, member fees).</li> <li>- Phase investments based on achieving milestones.</li> <li>- Maintain a lean operational structure.</li> </ul>	<ul style="list-style-type: none"> <li>- Scale back operations to core services.</li> <li>- Seek bridge funding from foundational partners.</li> <li>- Delay launch of new, non-essential hubs.</li> </ul>
<b>Strategic</b>	<b>Low Member Adoption:</b> SMEs and large companies do not see sufficient value to join or remain active.	Medium	High	<ul style="list-style-type: none"> <li>- Develop a clear, compelling value proposition for each member tier.</li> <li>- Heavily subsidize SME membership in the initial phase.</li> <li>- Showcase success stories and ROI from pilot projects.</li> </ul>	<ul style="list-style-type: none"> <li>- Conduct a full review of the value proposition and pricing.</li> <li>- Launch a “quick win” grant program for SMEs to fund small-scale digitalization projects.</li> </ul>
<b>Operational</b>	<b>Failure of Pilot Projects:</b> Initial projects fail to deliver expected ROI, damaging credibility.	Low	Medium	<ul style="list-style-type: none"> <li>- Select well-defined problems with high probability of success (e.g., predictive maintenance).</li> <li>- Partner with experienced technical ex-</li> </ul>	<ul style="list-style-type: none"> <li>- Conduct a thorough post-mortem to identify lessons learned.</li> <li>- Pivot to a different, lower-risk pilot project.</li> <li>- Communicate transpar-</li> </ul>

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy	Contingency Plan
				perts from universities. - Set clear, measurable success criteria from the start.	ently with stakeholders about the challenges and learnings.
<b>External</b>	<b>Geopolitical Disruption:</b> Major supply chain disruptions or economic downturns impact member viability.	High	Medium	- Promote supply chain resilience (nearshoring, stockpiling) as a core ecosystem service. - Use the digital platform to help members identify alternative suppliers within the ecosystem. - Lobby for supportive government policies during crises.	- Activate crisis management communication plan. - Provide financial counseling and support to struggling members through partnerships.
<b>Governance</b>	<b>Perceived Lack of Neutrality:</b> The AEO is seen as favoring Aurelian or other large partners over SMEs.	Medium	High	- Enforce the consortium-based governance structure with an independent board. - Ensure transparent decision-making processes. - Create an SME advisory	- Appoint an independent ombudsman to handle disputes. - Commission an external governance audit.

Risk Category	Risk Description	Likelihood	Impact	Mitigation Strategy	Contingency Plan
				council to provide direct feedback to the board.	

## 6. TOOLS AND TEMPLATES

This section provides a set of practical tools to be developed and used by the AEO team.

### Phase 1 Foundation Checklist

- ☐ AEO legally incorporated as a non-profit consortium.
- ☐ Bank accounts established.
- ☐ Interim Board of Directors appointed.
- ☐ CEO and CTO hired.
- ☐ Year 1 budget approved by the Board.
- ☐ €10M in seed funding secured.
- ☐ MOU signed with Innovation Norway.
- ☐ MOU signed with NTNU.
- ☐ Membership Agreement and Fee Structure finalized.
- ☐ First 10 founding members signed.
- ☐ Predictive Maintenance pilot project charter approved.
- ☐ Ecosystem website and brand identity launched.

### Decision Framework: Initiative Prioritization (RICE)

Use this framework to score and rank potential new projects or services.

Initiative Name	Reach (# Members)	Impact (1-5 Scale)	Confidence (%)	Effort (Person-Months)	RICE Score (RIC/E)
Example: AI Quality Control Toolkit	100	4	80%	12	<b>26.7</b>
Example: New Training Course	50	3	90%	4	<b>33.8</b>

### Member Assessment Tool: CMM Digital Maturity Self-Assessment

A simplified questionnaire for new members to benchmark their capabilities.

#### Section 1: Process & Strategy

1. Is your digital manufacturing strategy documented and communicated? (Y/N)

2. Are your core production processes standardized and documented? (Y/N)

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## Section 2: Technology & Data

1. Do you collect real-time data from your key production equipment? (Y/N)

2. Are your IT (business) and OT (production) systems integrated? (Y/N)

...

**(Scoring will place the member into a CMM Level 1-5 category and generate a recommended action plan.)**

## Communication Templates

### Template 1: Invitation to Potential Foundational Partner

**Subject:** Invitation to Shape the Future of Scandinavian Manufacturing with the Aurelian Ecosystem

Dear [Partner Name],

I am writing to you on behalf of Aurelian Manufacturing to introduce a transformative initiative for the Norwegian and Scandinavian industrial landscape. We are launching the **Aurelian Manufacturing Ecosystem**, a non-profit, public-private consortium dedicated to accelerating innovation, resilience, and competitiveness across our region's most critical sectors.

Drawing on best practices from global models like Germany's Industry 4.0 and the U.S. Manufacturing USA network, our mission is to build a collaborative commons that empowers all participants, from startups to established leaders. We are focusing on developing sovereign capabilities in areas like sustainable manufacturing, digital engineering, and autonomous systems.

Given [Your Organization's] leadership in [Their Area of Expertise], we believe you would be an invaluable foundational partner in this endeavor. We would like to formally invite you to a private briefing to discuss a strategic partnership and a potential role on our Board of Directors.

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### Template 2: Press Release for Ecosystem Launch

#### FOR IMMEDIATE RELEASE

#### **Aurelian Manufacturing Launches Ambitious 10-Year Ecosystem Initiative to Transform Scandinavian Industry**

**OSLO, NORWAY - [Date]** – Aurelian Manufacturing, in partnership with Innovation Norway and the Norwegian University of Science and Technology (NTNU), today announced the launch of the Aurelian Manufacturing Ecosystem, a major 10-year initiative to build a world-class, intelligent, and resilient industrial hub in Scandinavia.

The ecosystem, structured as a neutral, non-profit consortium, will bring together industry leaders, SMEs, startups, and research institutions to accelerate the adoption of advanced technologies like artificial intelligence, robotics, and the circular economy.

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