

The Factory of the Future Model: Belgium's Strategic Blueprint for Industrial Efficiency and Defence Competitiveness

By AOS Defence & Security Management Insights

The insights shared at the AGORIA study day (24 Sep 26) reinforce that industrial modernization and lean efficiency are not exclusive to large defence prime contractors. Small and medium-sized enterprises can achieve scale and productivity gains through structured transformation methodologies, workforce upskilling, and active participation in defence ecosystems. For European defence readiness, building resilient, highly productive manufacturing capabilities at the SME level remains a core requirement for strategic autonomy.

Beyond Theory: The Challenge of Real-World Production



In today's geopolitical and macroeconomic landscape, characterized by heightened volatility and supply chain vulnerabilities, transforming innovative concepts into scalable, combat-ready industrial output is a critical imperative for European defence sovereignty. All too often, groundbreaking technological concepts remain trapped in the "valley of death", confined to slides and early-stage demonstrations without reaching operational deployment. To bridge this gap, Belgium has developed a collaborative framework that links the Ministry of Defence, industrial associations, research centres, and SMEs.

As highlighted during the study day organized by **AGORIA** (Belgium's technology industry association), bridging this gap requires moving beyond static research toward agile, scalable manufacturing ecosystems capable of responding to changing defence priorities.

The "Factories of the Future": A Pragmatic Approach to Productivity

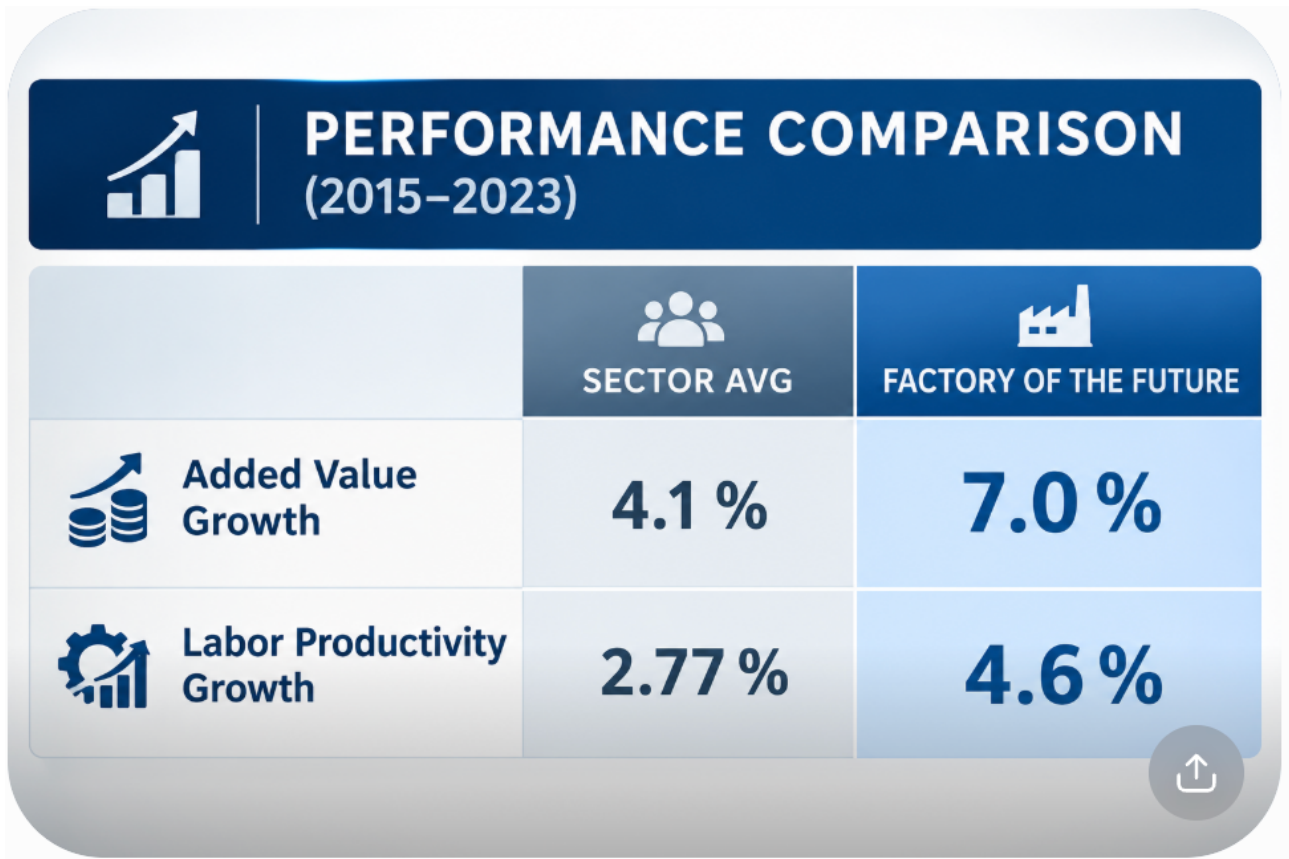
Spearheaded by AGORIA alongside the Sirris collective research centre, the **Factories of the Future** methodology has supported the Belgian manufacturing landscape for over fifteen years. Unlike initiatives that focus solely on adopting the latest tech trends, the core strength of this methodology lies in its focus on **measurable operational performance**.

An economic impact analysis covering data from 2015 to 2023 demonstrates significant performance advantages for participating companies:

- **Added Value Growth:** Companies completing the transformation process achieved an average annual added value growth of **7.0%**, compared to the technology sector average of **4.1%**.

- **Labor Productivity Growth:** Labor productivity growth for awarded "Factories of the Future" reached **4.6%** annually a **70% increase** over the sector average of **2.77%**.

This structural optimization translates into halved lead times, optimized resource utilization, and enhanced operational resilience during supply chain disruptions.



Key Pillars of Industrial Transformation

Presentations from defence suppliers at the AGORIA event highlighted four essential operational pillars for industrial efficiency:

1. **Lean Processes & Standardization:** Optimization of core production flows, floor layouts, and logistics must precede any automation or digital integration.
2. **Digitalization & Artificial Intelligence:** Leveraging production data enables full traceability of components and provides AI support for planning, cost estimation, and waste reduction.
3. **Smart & Flexible Automation:** Robotic cells and flexible manufacturing systems allow facilities to handle low-volume, high-mix defence production runs with high precision and repeatability.
4. **Human-Centric Engineering:** Automation elevates human operators by removing repetitive administrative overhead, enabling personnel to focus on higher-value tasks, quality control, and continuous process improvement.

Case Studies: From Low-Volume Batches to Industrial Ramp-Up

The practical impact of the Belgian model is illustrated by success stories in high-precision defence and aerospace manufacturing:

- **Mockel (Precision Mechanics for Defence & Aerospace):** Facing sudden demand spikes to scale production lot sizes, Mockel leveraged the "Made Different" transformation framework. By doubling its 5-axis machining centres, automating production flows, and integrating AI into scheduling, the company expanded its workforce from 35 to 48 employees and grew revenue from €6 million to €9 million over 18 months, maintaining high environmental standards through retrofitted machinery.
- **Delta TCI / B2Si (Space & Defence Electronics):** A four-time winner of the *Factory of the Future* award, the company uses Automated Optical Inspection (AOI) and comprehensive data-logging to ensure component traceability back to original suppliers. This focus on quality and continuous learning builds long-term customer trust and strengthens talent retention in a competitive labour market.

Ecosystem Synergy: The STRIDE Initiative and Pre-Seed Funding

To support these industrial transitions at a national scale, Belgian Defence, in coordination with the Federal Public Service for Economy and regional authorities, introduced the **STRIDE** (*Strategic Industrial Development and Enablement*) framework.

Supported by initiatives such as the **ODIN** fund (developed alongside Belgium's sovereign wealth fund, SFPI-FPIM), these instruments help de-risk private capital investments in defence startups and scale-ups. By linking SMEs directly with major Original Equipment Manufacturers (OEMs) and research institutions, the ecosystem accelerates the transition of dual-use technologies into military procurement channels.