

Artificial Intelligence (AI): Growth of AI applications in manufacturing industry

**A strategic roadmap for European locks and
builders' hardware manufacturers**

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AI is Already Here



Voice assistants



Navigation apps



Content recommendations



Smartphone facial recognition

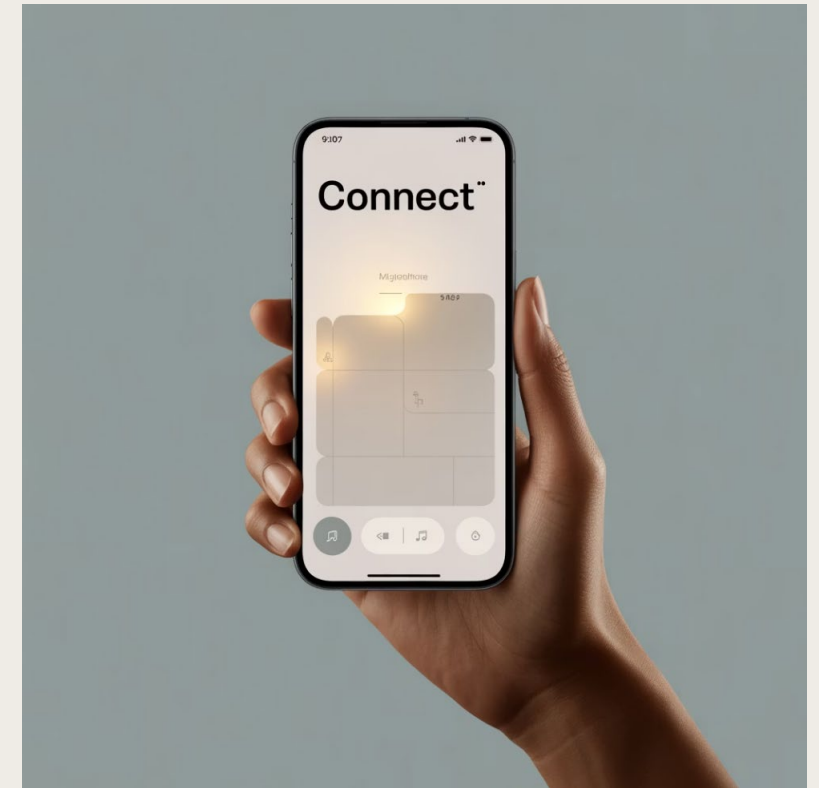


Smart home device responses



Email spam filtering

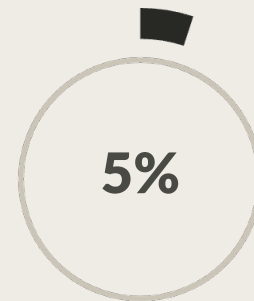
The same principles driving these personal tools are now transforming manufacturing at scale.



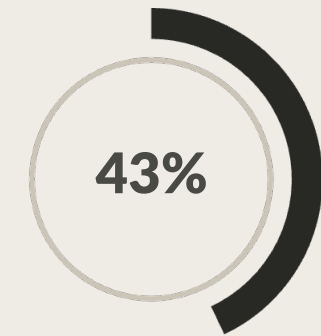


The European Opportunity

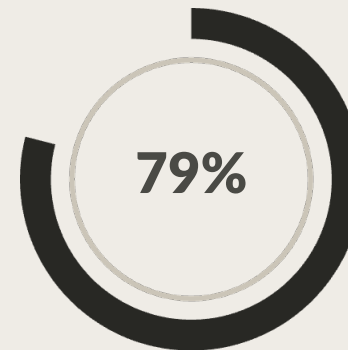
Today



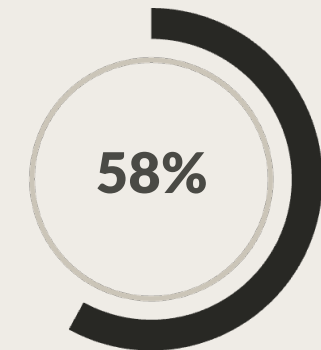
Integrate AI



Do not use at all



Anticipate a great impact in efficiency in the next 5 years



Say is essential

The European Opportunity

Predicted in 2032

€103.3B

Global AI manufacturing
market by 2032

46,5%

CAGR

Compound Annual Growth Rate

European Leadership

75%

Germany

Adoption rate

68%

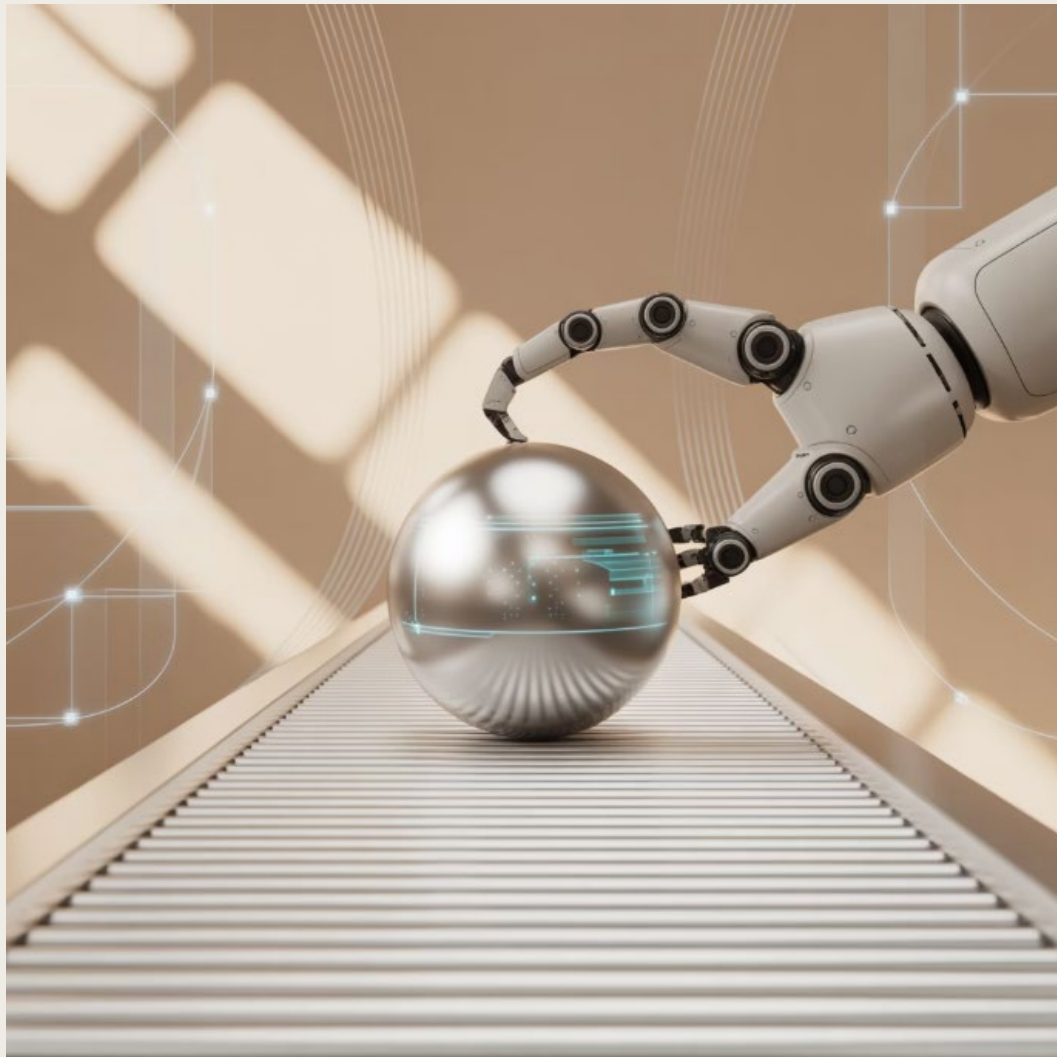
Netherlands

Adoption rate



AI Technologies Transforming Manufacturing

Computer Vision & Quality Control



Automated Defect Detection

AI inspects products at high speed with >99% accuracy

Consistent Quality Assurance

- Identifying minute flaws in components
- Ensuring consistent quality
- Reducing waste and returns

Real-time Feedback

AI Technologies Transforming Manufacturing

Predictive Analytics & Maintenance

30% Cost Reduction

45% Decrease in Downtime

Real-time Machine monitoring

Extended Equipment Lifespan

From reactive to proactive: AI predicts failures before they happen, ensuring production continuity.



AI Technologies Transforming Manufacturing

AI-Driven Optimization

40%

Production efficiency boost



Smart Inventory



Supply Chain

AI analyse entire operation to find efficiency opportunities creating a more responsive and adaptive manufacturing ecosystem.



Proven Results: Success Stories

Stanley Black & Decker

ELU Platform optimises production workflows, reduces waste by 25%, €3.2M annual savings from predictive maintenance

Bosch

Generative AI in production planning cuts design time by 60%, 35% improvement in production line efficiency, created 'digital twin' of facilities for optimisation, 17% reduction in material waste

Clear ROI and practical applications proven in the field



Havelar: AI-Driven Sustainable Construction

Portuguese startup revolutionising construction
with AI design and 3D printing

12x

Faster

Construction speed

50%

Cheaper

Project costs

—

Sustainability

Reduced Carbon Footprint

4 / 90m2

Employment

Address Labour Shortages



**Matosinhos ReCircular project:
electronic waste recycling facility**

A Strategic Implementation Roadmap

Phase 1: Assessment & Pilots

Start small with a specific, manageable project.
Focus on a single process with high impact potential and measurable outcomes.

1

2

Phase 2: Core Integration

Integrate AI into core processes after successful pilot. Begin scaling the solution while building internal capabilities.

3

Phase 3: Scale & Optimize

Expand the AI solution across your organisation. Create a feedback loop for continuous improvement.

4

Phase 4: Partnership & Capability Building

Leverage expert partnerships like ABIMOTA to build internal knowledge and create sustainable AI competencies.

Key Implementation Challenges



Data Quality & Infrastructure

Begin by auditing your data landscape and investing in robust infrastructure.

Workforce Adaptation

Focus on training, clear communication about benefits (not replacement), and involving workers in the process.

Integration with Legacy Systems

Consider middleware solutions and gradual upgrades.

Sustainability Benefits



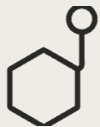
Energy Optimisation

15-30% reduction in energy consumption



Material Efficiency

20% decrease in waste through precision manufacturing



Carbon Reduction

AI-optimised logistics cut transport emissions by 25%





Competitive Advantage

First Mover

Market differentiation and premium positioning

Cost Leadership

Lower production costs through optimisation

Innovation

Rapid prototyping and market responsiveness

Addressing Common Concerns

Cost

Start small with modular solutions that show quick ROI

Technical Expertise

Partner with specialists and build internal capability gradually

Integration

Modern AI systems designed to work with existing infrastructure

Data Privacy

European solutions that comply with GDPR requirements

European Regulatory Landscape



EU AI Act

Upcoming legislation will classify AI systems by risk level.



GDPR Considerations

AI systems collecting data must comply with existing privacy regulations.



Industry Standards

European standards bodies are developing AI-specific guidelines.

The European regulatory framework aims to foster trust and excellence in AI, giving European manufacturers who embrace compliant AI systems a competitive advantage in global markets.



Future Opportunities



Beyond Today

- AI as core pillar of Industry 4.0
- Generative design for hardware innovation
- Full digital twins of production facilities
- Autonomous decision-making systems
- Create adaptive supply chains resilient to disruption

**The window for
competitive advantage is
now**



Thank you for being here

AI is not just another technology - it's the central intelligence that will coordinate and optimize all aspects of your manufacturing operations



Questions & Answers

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