

# Practitioner Conference

Towards a Knowledge-Driven European Pump Industry

***Europump***

The Voice of the European Pump Industry

# KNOWLEDGE-DRIVEN...

**1996** : The OECD (Organisation for Economic Co-operation and Development) wrote :

"Knowledge has taken on greater importance than natural resources and physical capital."

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At the time, it sounded like a prediction. Today it is a fact.

# KNOWLEDGE-DRIVEN...

*"When knowledge is structured and shared at scale — it reshapes the world."*

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IPCC — 1988 to today

Scientific knowledge → European industrial policy

Green Deal · Taxonomy · Ecodesign Regulation

# KNOWLEDGE-DRIVEN...

**1989** : Russell Ackoff — American systems theorist, professor at Wharton — mapped what would become one of the most cited frameworks in management science.

**Data → Information → Knowledge → Wisdom**

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The machine no longer needs to climb. It leaps — from raw sensor data to actionable knowledge, in milliseconds.

# KNOWLEDGE-DRIVEN...

*"When the machine learns the physics — it outperforms the expert?"*

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GraphCast — Google DeepMind

40 years of data · 10-day forecast · Under 1 minute  
vs. supercomputer · 6 hours · €tens of millions

# KNOWLEDGE-DRIVEN...

WHAT DOES IT REALLY MEAN ?

We all collect data.

**Very few are knowledge-driven.**

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*Data tells you the pump is failing.*

*Prediction tells you it will fail — in the coming weeks.*

**Knowledge tells you why — and how to prevent it.**

Source: IBM IBV 2022 - McKinsey 'Prediction at Scale' 2023 - Gartner Analytics Maturity Model



## ***Raised by code, shaped by industry***

*“From writing code at university, to working on factory floors, to believing that intelligence belongs inside the machine — not beside it.”*



# WHAT WE BUILD. WHO WE SERVE.



Environment



Mining



Chemical



Hydrometallurgy



Sea Water



# *Europump*

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# KEY FIGURES

- Established in **1960**
- The **European Association of Pump Manufacturers**
- Members are **15 National Associations**
- Members represent more than **450 companies**
- Collective production worth more than **€10 billion**
- Employs **100,000 people** in Europe



# 2026 SPONSORS

## INNOMOTICS



# EUROPE 2050 (In 2026)



# MISSIONS

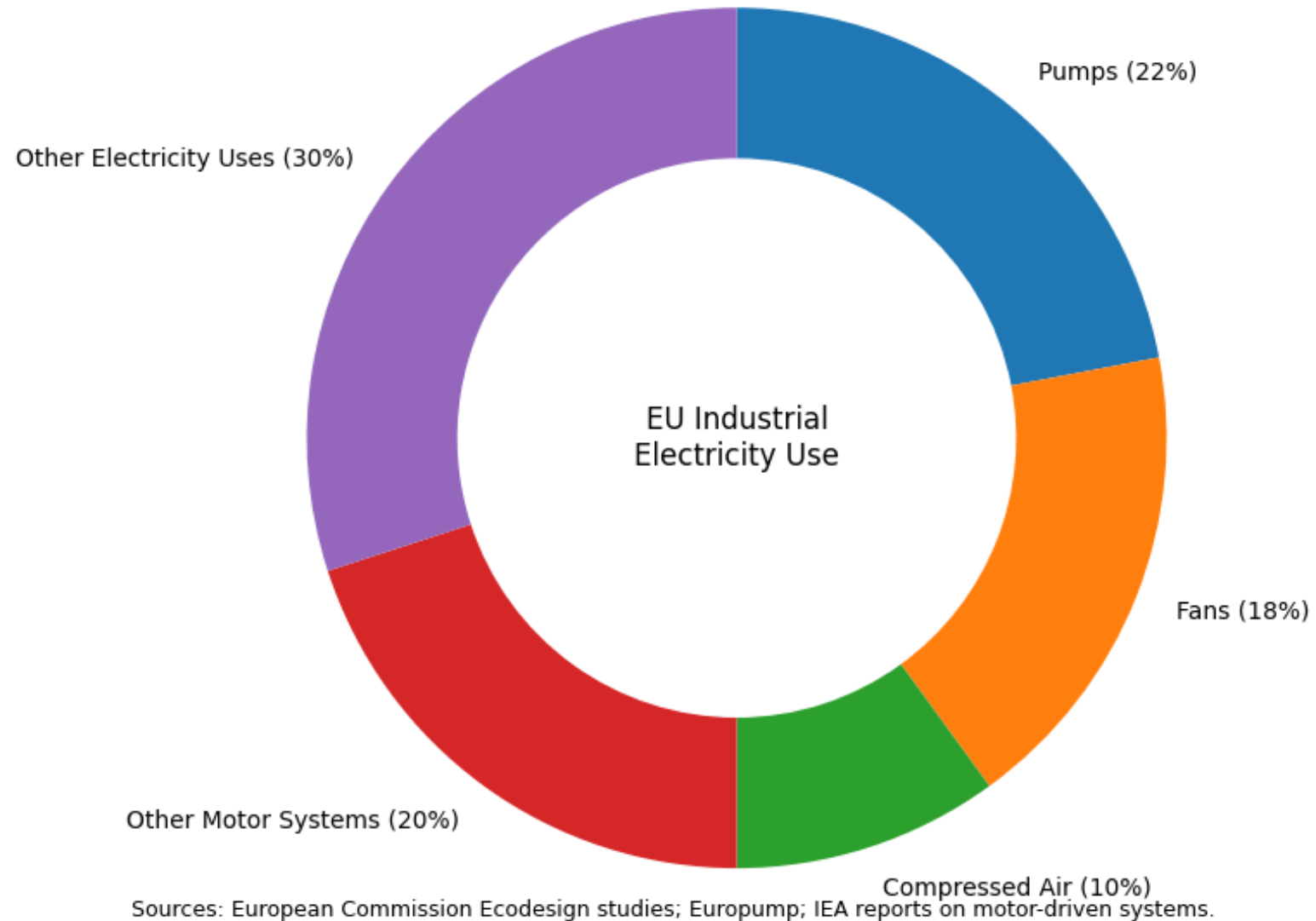
- **Serves and promotes** the European pump industry by maintaining a **strong dialogue** with stakeholders, EU policy-makers and all agencies determining or influencing the progress of our industry.
- We support a **continuous improvement** of liquid pumps to increase the **productivity of end user sectors** and to contribute to **competitiveness** and **growth**.
- Associate member of **Orgalim**, the European technology industries' umbrella association representing the mechanical, electrical, electronic and metalworking industries.
- Close cooperation with the **Hydraulic Institute** (HI) in USA.



# ELECTRICAL ENERGY

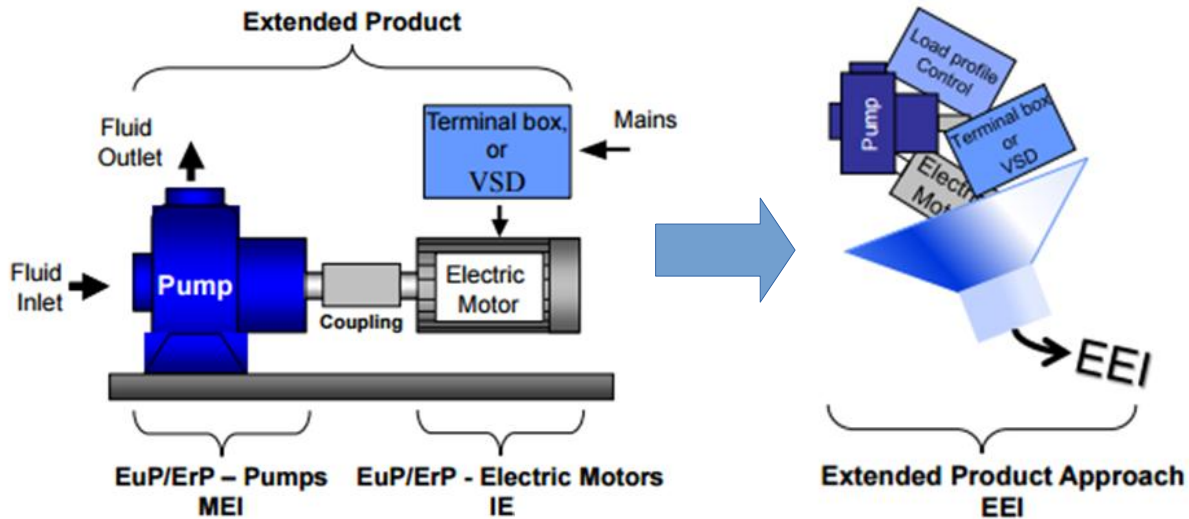
- Pumping consumes around **22% of Europe's industrial electricity.**
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- In many industrial sectors, pumps can represent up to **20% of total electricity consumption.**
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Breakdown of Industrial Electricity Consumption in the EU

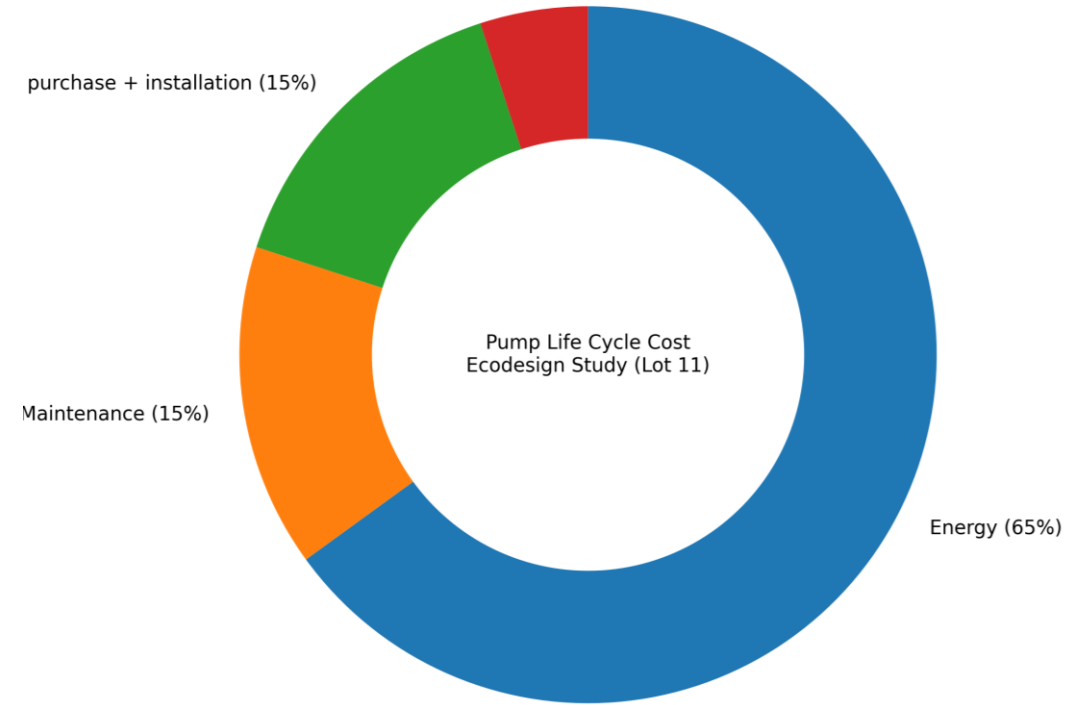


# PUMPS

- By optimizing pumping systems — through proper sizing, variable speed drives, and digital monitoring — energy **savings of up to 30% are often achievable.**



Typical Pump Life Cycle Cost - EU Ecodesign Lot 11  
Other costs (5%)



Source: Europump / European Commission - Ecodesign Preparatory Study for Water Pumps (Lot 11).

- **EUROPUMP** has addressed energy topic for decades throughout **MEI** (pump), **IE** (motor), **EEI** (Extended product approach).
- Regulation for water pumps and circulators



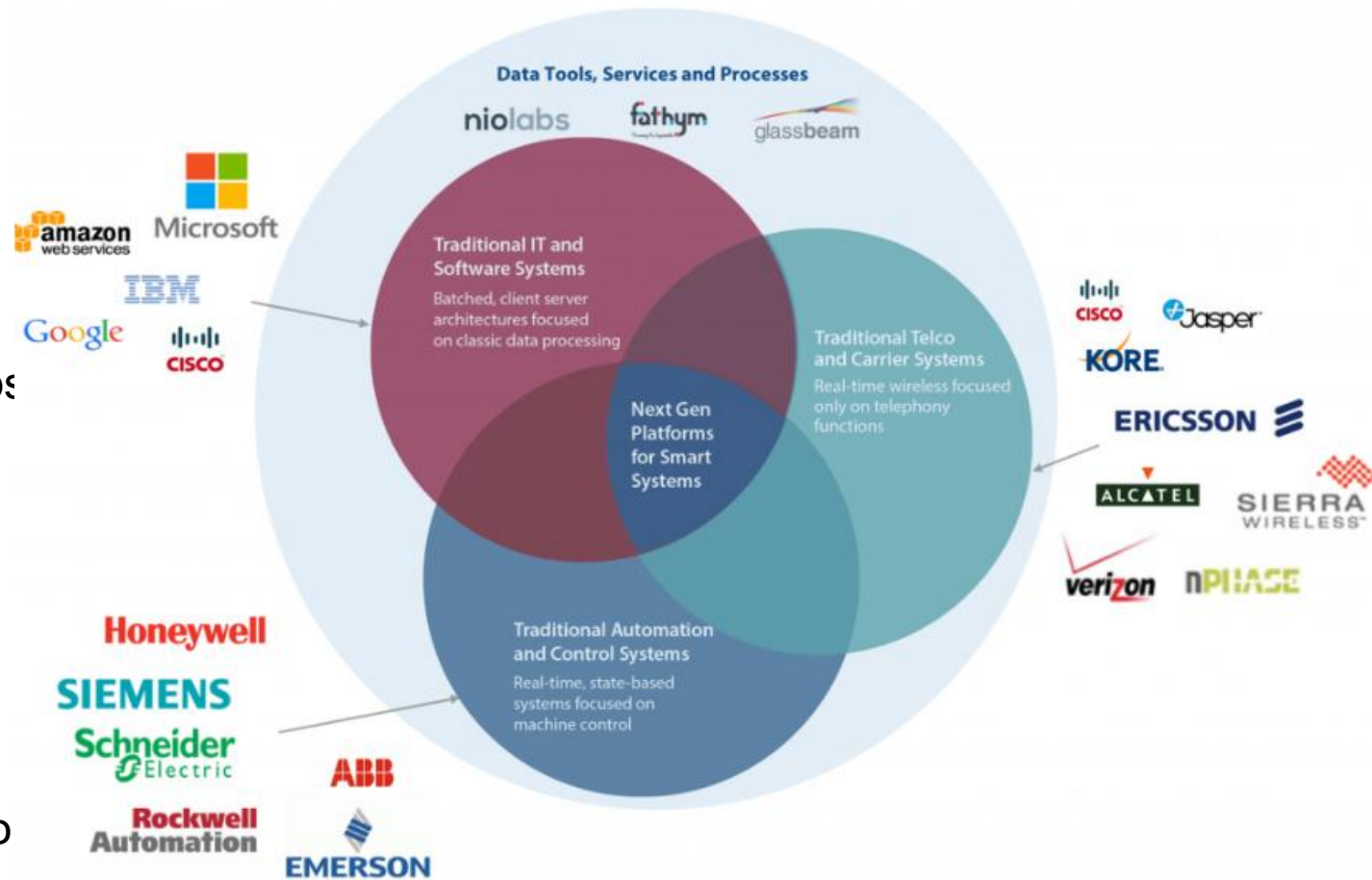
Transforming data into industrial intelligence

# *Europump*

The Voice of the European Pump Industry

# CHALLENGES FOR PUMP INDUSTRY

- For decades, pumps were mainly mechanical machines.
- Over the past twenty years, digital technologies, through **OT (Operational Technology)**, have started transforming pumps into “smart” **pump systems** with VFDs, sensors, and predictive maintenance...
- Pumping systems are becoming part of **intelligent infrastructure** – optimizing energy use, integrating digital data, improving interoperability, and supporting the transition to a climate-neutral industry.

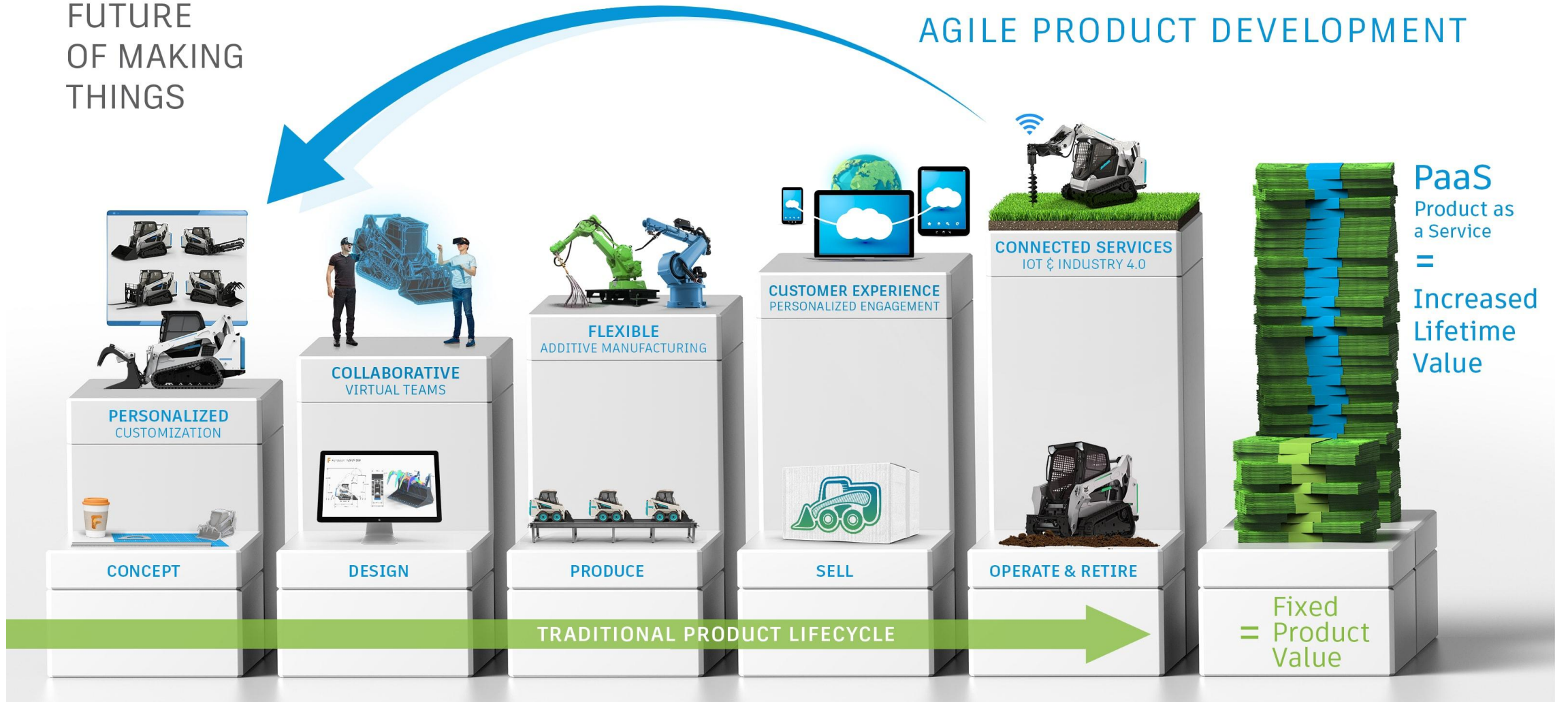


Source : Harbor Research

# DESIGN, BUILD AND OPERATE

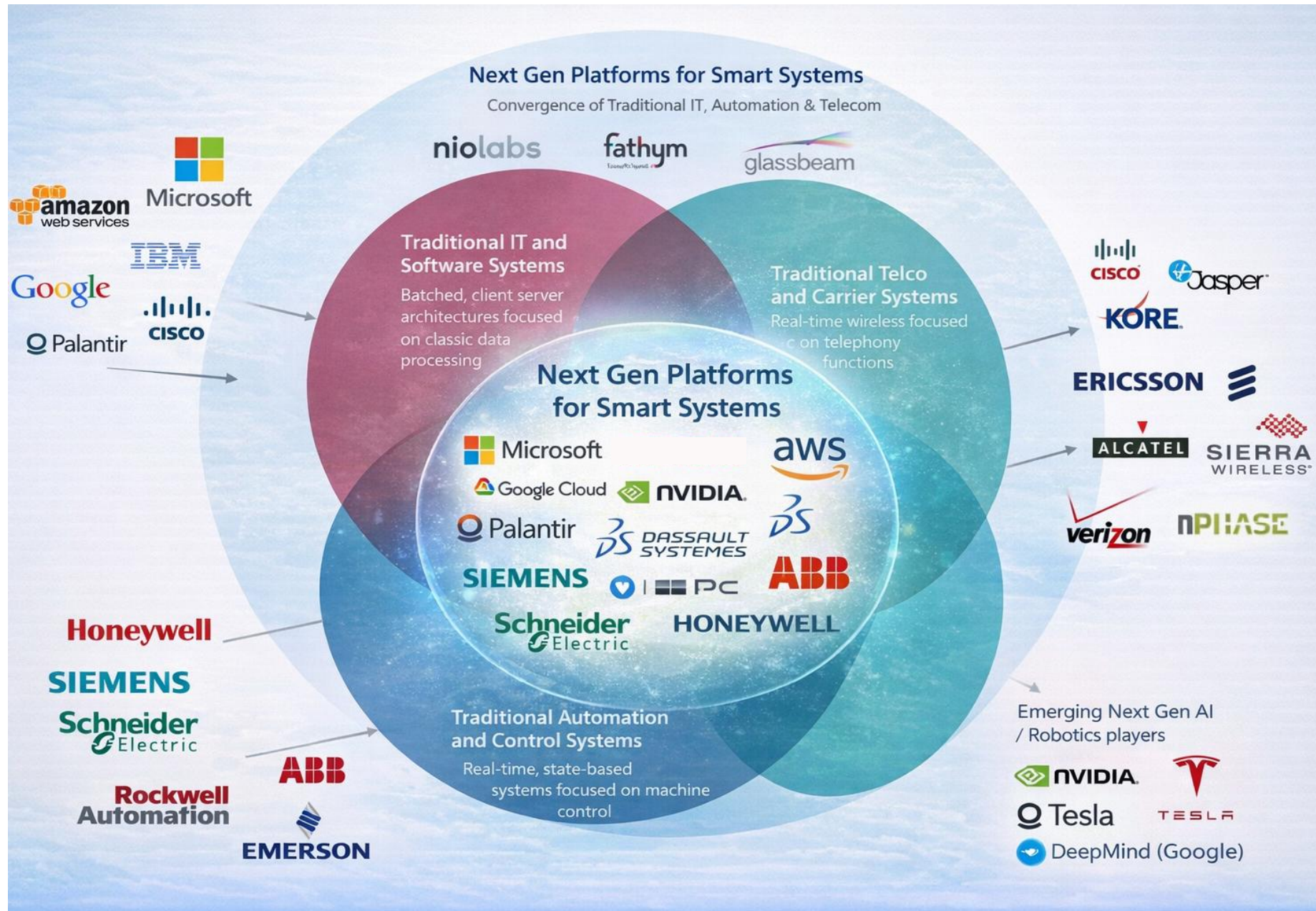
THE  
FUTURE  
OF MAKING  
THINGS

AGILE PRODUCT DEVELOPMENT



Source : Autodesk

# BUILDING KNOWLEDGE PLATFORM



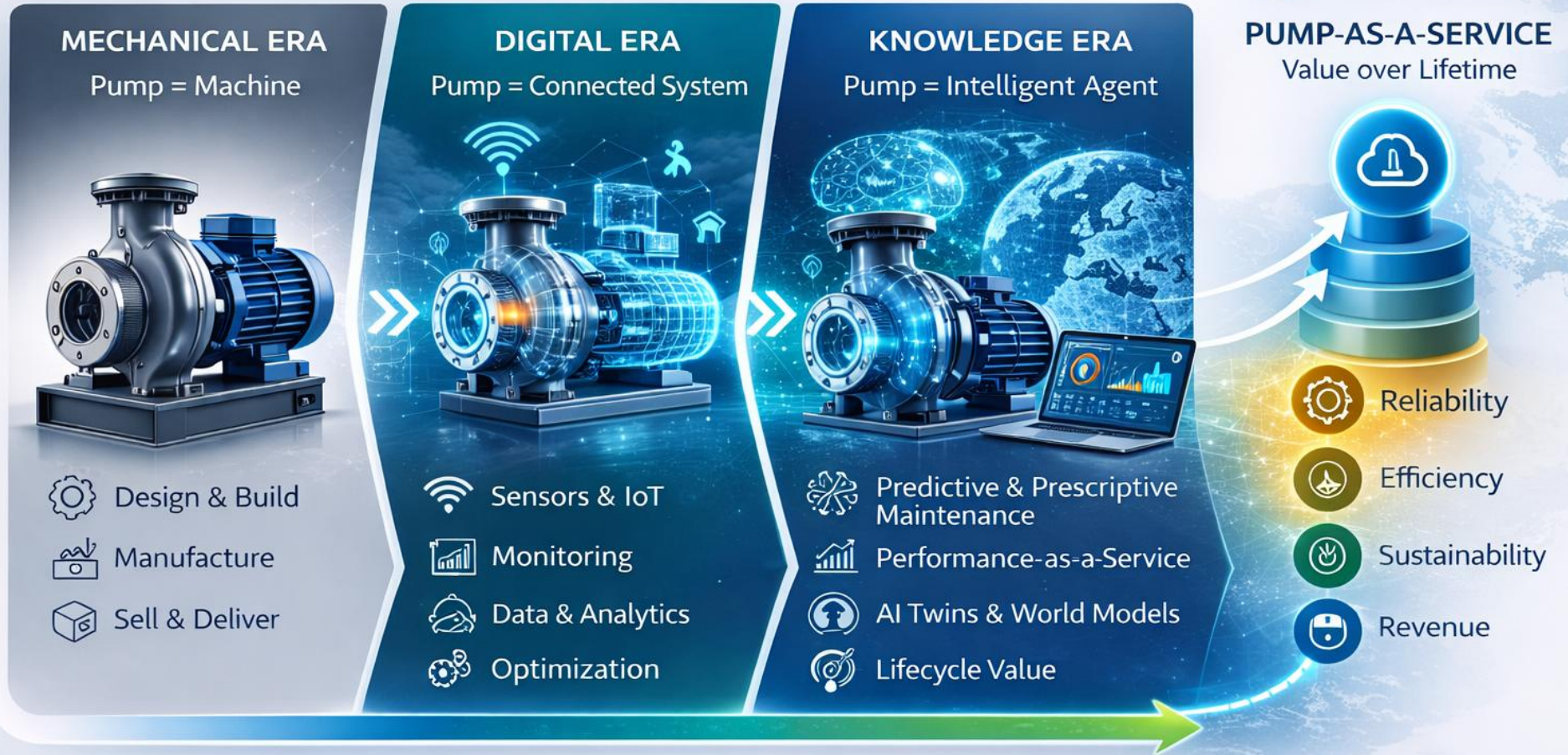
# DIGITAL @DESIGN AND @OPERATIONS



FROM  
PHYSICAL TO  
DIGITAL...

# THE EVOLUTION OF PUMP MANUFACTURERS

From Mechanical Equipment to Knowledge-Driven Systems



# A PARADIGM SHIFT IS HAPPENING. NOW.

3 February 2026

NVIDIA & Dassault Systèmes announce the largest collaboration in their 25-year history:

## INDUSTRY WORLD MODELS

Science-validated AI systems grounded in physics — embedding 40 years of industrial knowledge.

*"Artificial intelligence will be infrastructure — like water, electricity, and the internet."*

— Jensen Huang, CEO NVIDIA

Physics-based

AI-powered

Industry-validated

Sources: NVIDIA Newsroom & Dassault Systèmes Press Release, 3 Feb 2026 | Jensen Huang, 3DEXperience World Keynote Jan 2026

# THE COMPLETE AI: BRAIN + BODY

Just as humans need both a brain AND a body to act in the world —

**Industrial AI needs both a LANGUAGE MODEL and a WORLD MODEL.**

## LLM — THE BRAIN

- Understands language & intent
- Interacts with operators naturally
- Reasons, explains, documents
- Generates reports & recommendations
- Alerts in plain language: "Bearing wear detected"

→ **The pump TALKS to you.**



## WORLD MODEL — THE BODY

- Understands physics & causality
- Simulates fluid dynamics, wear, heat
- Predicts failures before they happen
- Optimises performance in real-time
- Grounds every recommendation in physics

→ **The pump UNDERSTANDS itself.**

**Together: a pump that understands physics AND speaks to its operator. This is the Knowledge Era.**

Sources: Rev Lebedev (VP Omniverse, NVIDIA), NextPlatform Feb 2026 | Florence Hu-Aubigny (EVP R&D, Dassault Systèmes), NextPlatform Feb 2026

# FROM SaaS TO AGENT-IN-THE-MACHINE

"Every single SaaS company will become an AaaS company." — Jensen Huang, GTC 2026

## ERA 1

### SaaS

Software sold as a subscription.

You use the tool.

Value :  
feature access.

## ERA 2

### AaaS

Agents sold as outcomes.

The AI uses tools for you.

Value :  
results delivered.

## ERA 3

### Agent-in-the-Machine

The agent IS embedded in the physical product.

The pump IS the software.

Value :  
continuous intelligence.

**This is exactly the Product-as-a-Service (PaaS) model for pumps:**

The embedded agent monitors, optimises, predicts — the manufacturer sells uptime & performance, not just hardware.

Sources: Jensen Huang, GTC 2026 — NVIDIA | Satya Nadella, BG2 Podcast 2025 — Microsoft | IDC 2025 | Databricks CEO, TechCrunch Feb 2026

# EUROPUMP'S ROLE IN THIS TRANSFORMATION

## 1 STANDARDIZE TO LIBERATE

Interoperability standards for pump data (DPP, IoT).  
One digital language for all European pumps.

## 2 SUPPORT MANUFACTURERS

Practical guides, training, collaborative platform —  
same transformation tools for all, regardless of size.

## 3 SHAPE REGULATION

Ecodesign, Extended Product Approach, DPP...  
Better to co-build these rules than to suffer them.

## 4 BUILD TOMORROW'S COMMUNITY

AI/digital working groups, mentoring, onboarding.  
The engineers of 2035 are 25 years old today.

# THREE THINGS YOU CAN DO STARTING TOMORROW

01

## COLLECT & STRUCTURE YOUR DATA

Every pump you deliver is a source of knowledge. Identify what data you capture today — and what you should. You cannot build intelligence without a data foundation.

02

## LAUNCH A PILOT — EVEN A SMALL ONE

One sensor on a critical pump. One monitoring dashboard. Predictive maintenance on 10 machines. Transformation starts with experimentation, not perfection.

03

## JOIN EUROPUMP WORKING GROUPS

Digital, energy, regulation — the rules of our industry are decided in these groups. Your field experience has immense value in these debates.

# THE AGENTIC PUMP — Intelligence Embedded in the Machine

CONNECTED PUMP · Real-time data streams



EMBEDDED AI AGENT · Physics + Language + Reasoning

AI BRAIN

WORLD MODEL · Physics-based AI



SENSOR DATA



AGENT ACTIONS

**SELF-DIAGNOSES**

Detects anomalies before failure

**NATURAL LANGUAGE**

Answers operator questions

**AUTO-OPTIMISES**

Adapts to load in real time

**ORDERS PARTS**

Triggers supply chain autonomously

*The pump is no longer just a machine. It is an agent — sensing, reasoning, acting, and learning.*

**Europump**

*"True success will mean that companies of all sizes recognize that Europump has helped them become more competitive, more sustainable, and more confident on their transformation roadmap."*

Alexandre Lacour — President, Europump | Graz, 2026