

# Autonomous Forge

Optimize manufacturing operations and minimize downtime

 bravent



# Introduction

In today's competitive business environment, collaboration can provide a significant advantage. By combining their capabilities, the partners can offer a unique value proposition that sets them apart from their competitors.

The partnership between Bravent, Microsoft, and Rockwell Automation aims to address several key challenges in the manufacturing industry.

The partnership aims to **enhance the competitiveness and resilience** of the manufacturing industry.

It's all about creating a more flexible and resilient organization for the customer, better equipped to **overcome future obstacles**.



# Priorities for Digitalization in Manufacturing

When asked, decision makers in the industrial sector consider that the **AREAS WORTH FOCUSING ON** to impact a digitization strategy are:



**OPERATIONAL IMPROVEMENT** is the biggest goal for manufacturers!

# Considerations affecting operational efficiency

As we saw, innovation in operations is fundamental to carry out the digitization strategy of manufacturing, but **TO CARRY IT OUT EFFECTIVELY** it is necessary to consider several factors:



Reducing costs without compromising product quality is key to staying competitive



Optimize the use of limited resources, such as energy and labor, to enhance production efficiency and capacity



Implement technologies for automation and data analysis without disrupting current operations



Increasing insight into manufacturing costs, processes and operations to drive better business decisions

# Reactive vs Predictive maintenance with AI

There is another important point to optimize operations:

Maintenance is essential, but there is **NOTHING MORE EFFICIENT THAN PREVENTING** any possible circumstance in advance. For that, the perfect solution is AI:

	REACTIVE MAINTENANCE	PREDICTIVE MAINTENANCE WITH AI
Definition	Maintenance performed after equipment failure	<b>Maintenance scheduled based on data-driven predictions</b>
Approach	Fix issues as they occur	<b>Prevent issues before they occur</b>
Downtime	High, due to unexpected failures	<b>Low, due to planned maintenance</b>
Cost	Often higher due to emergency repairs and downtime	<b>Lower, due to optimized maintenance schedules</b>
Resource Utilization	Inefficient, as resources are used reactively	<b>Efficient, as resources are allocated proactively</b>
Equipment Lifespan	Shorter, due to lack of preventive care	<b>Longer, due to timely maintenance</b>
Data Utilization	Minimal, relies on historical failure data	<b>Extensive, uses real-time data and AI algorithms</b>
Planning	Unplanned, reactive to failures	<b>Planned, based on predictive analytics</b>
Impact on Production	Disruptive, can halt production unexpectedly	<b>Minimal disruption, maintenance is scheduled</b>
Examples of Use	Fixing a machine after it breaks down	<b>Replacing a part before it fails based on AI predictions</b>

# Technologies that are transforming the industry

At Bravent we seek to provide 360° solutions because we are aware of the **COMPLEMENTARY VIRTUES OF DISRUPTIVE TECHNOLOGIES** when they are integrated in the same solution:



Business Intelligence &  
Data Analytics



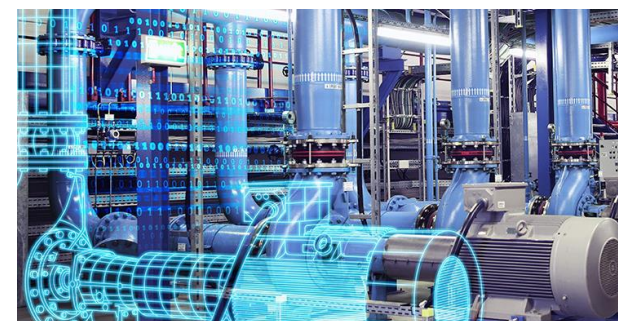
Artificial Intelligence



Extended Realities



IoT



Digital Twins

# Bravent Industrial Smart Operations Suite

We are pleased to announce a strategic collaboration between Microsoft, Rockwell Automation and Bravent that will take digital transformation in manufacturing to new heights.

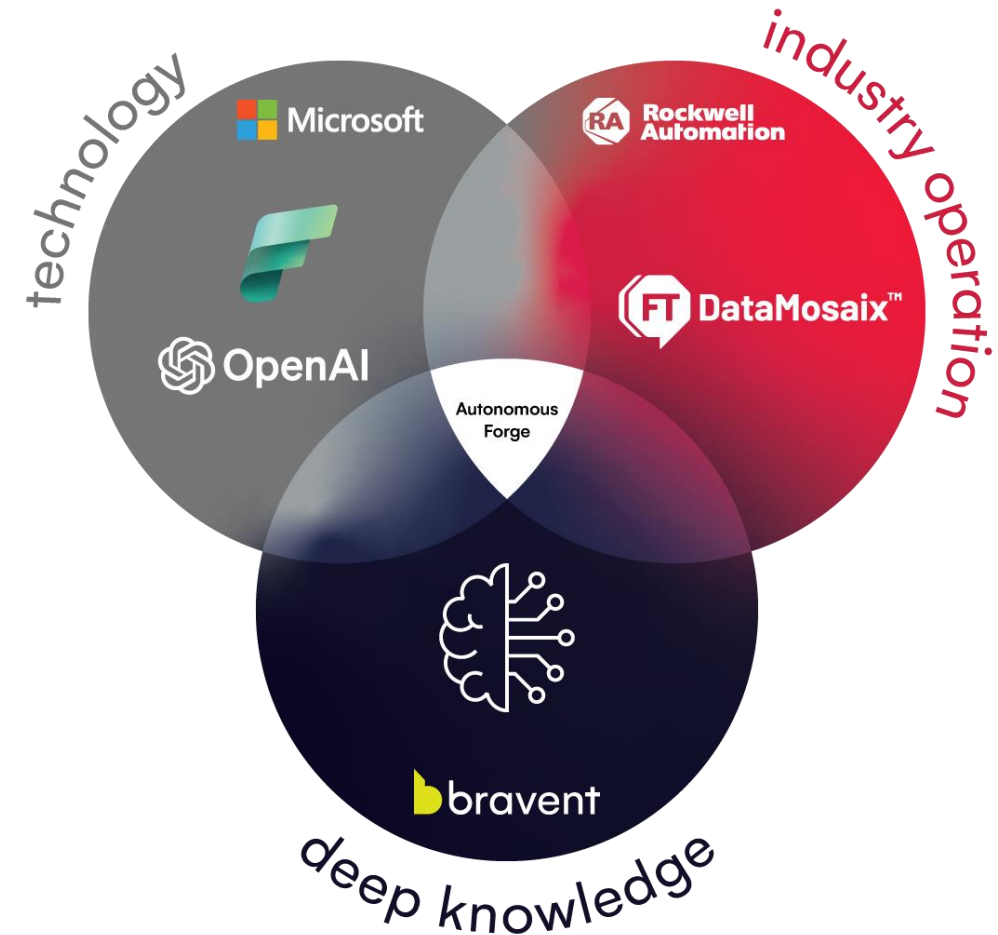


This partnership is focused on addressing the industry's most critical challenges by implementing innovative solutions such as **Predictive Maintenance, Computer Vision, Asset Performance Monitoring**, and other scenarios.

Rockwell Automation leads in industrial automation, Bravent excels in software development, and Microsoft provides powerful AI and data analytics.

This partnership empowers manufacturers with **greater operational visibility and data-driven decision-making**.

By addressing key industry challenges with innovative solutions, we are helping companies become more **resilient, competitive and autonomous**. We are excited to be part of this evolution and contribute to reshaping smart manufacturing into the future.



# Autonomous Forge

is an advanced modular software solution designed to optimize operational efficiency and reduce business costs combining technologies as **OpenAI**, **Microsoft Fabric**, and **Factory Talk DataMosaix**:

## Problem statement



Key factors affecting operational efficiency

Quality vs Cost

Resource Utilization

Technology Innovation

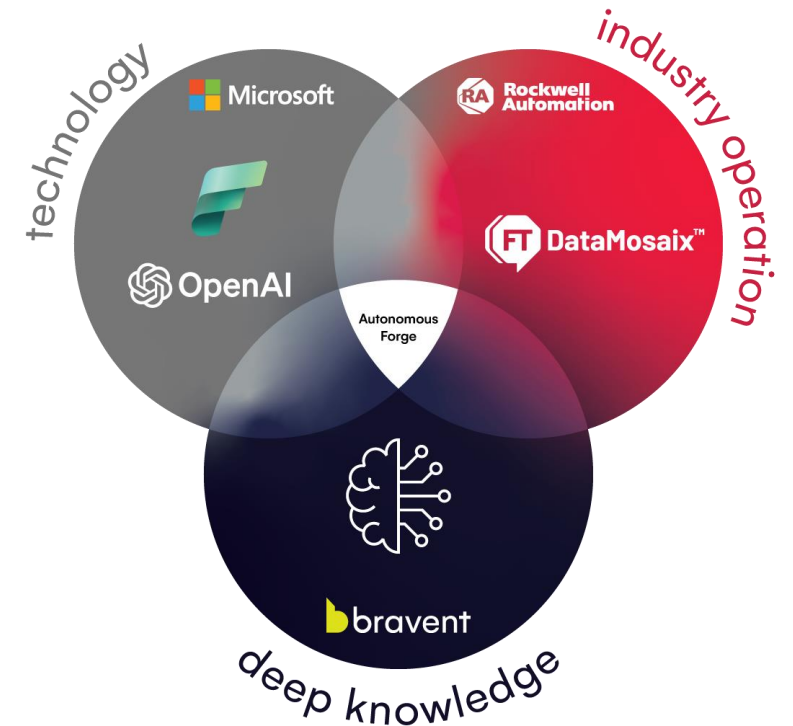
Operational Visibility

## Goal



## Solution

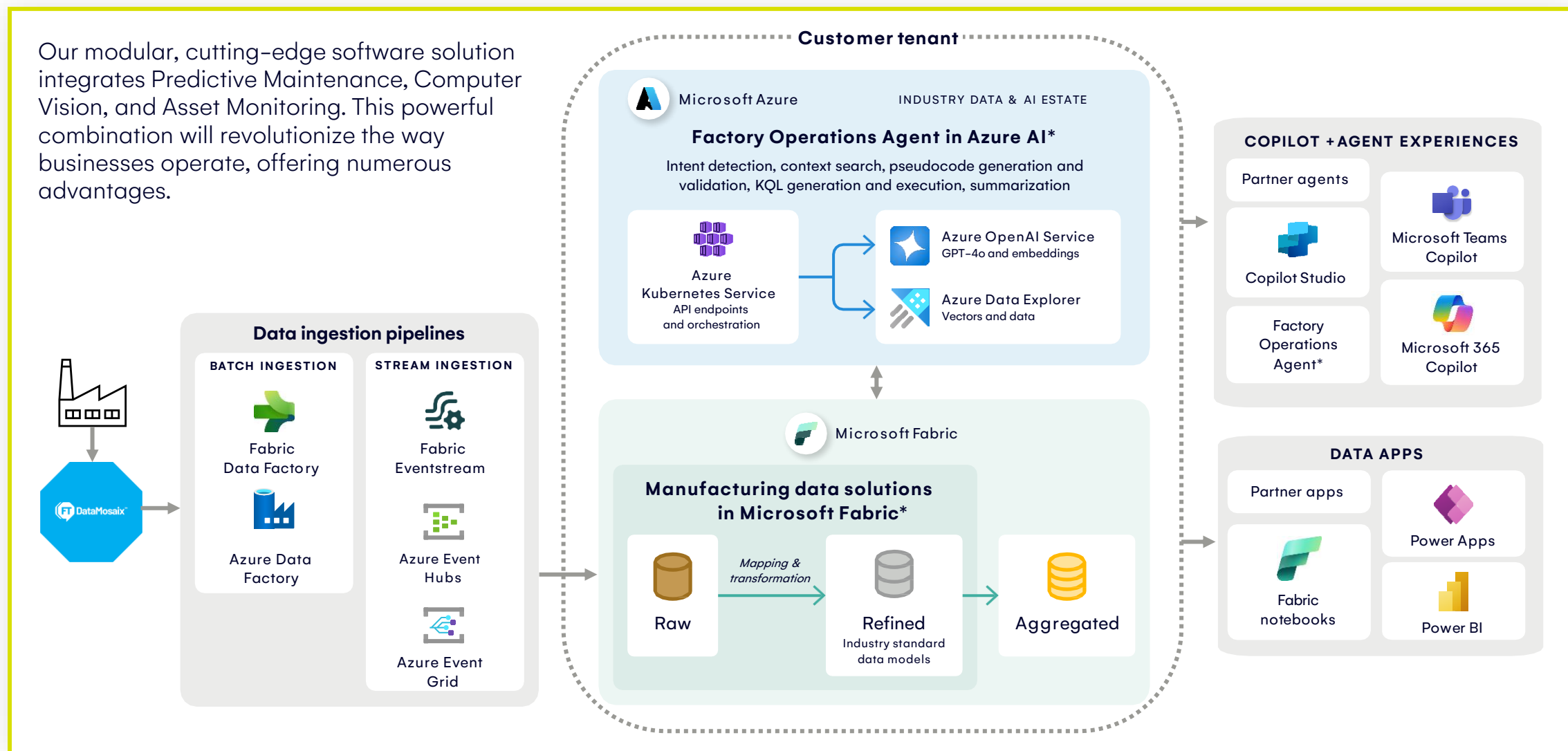
Predictive Maintenance  
+ Computer Vision  
+ Asset Performance Monitoring





# Solution Architecture

Our modular, cutting-edge software solution integrates Predictive Maintenance, Computer Vision, and Asset Monitoring. This powerful combination will revolutionize the way businesses operate, offering numerous advantages.



# Innovative game-changer

Combining technologies as OpenAI, Microsoft Fabric, and Factory Talk DataMosaix, Autonomous Forge is revolutionizing the way businesses operate, **IMPACTING CRITICAL KPIs** through:

01

## Enhanced Efficiency and Cost Savings

Predictive Maintenance improves equipment uptime and lowers maintenance expenses.

Asset Performance Monitoring (APM) decreases downtime and prevents breakdowns.

Computer Vision automates tasks, boosting productivity.

02

## Improved Quality Control and Safety

Computer Vision detects minute defects that human supervision may miss, ensuring higher quality control.

It also enhances worker safety by monitoring high-risk areas and identifying unsafe behaviors.

APM contributes to safer operations by predicting potential issues before they escalate.

03

## Optimized Asset Utilization

Predictive Maintenance and APM enable real-time maintenance, extending asset lifespan.

These solutions lead to better planning decisions and overall business growth.

# Autonomous Forge Benefits

The application of the aforementioned **Computer Vision**, **Predictive Maintenance** and **Asset Monitoring** technologies will define improvements in those key KPIs and bring multiple benefits:

## Reduce downtime

Predictive maintenance enables companies to prevent failures before they occur, reducing downtime and improving operational efficiency.

## Improve operational efficiency

Computer vision provides monitoring of manufacturing processes, identifying areas for improvement and optimizing the use of resources.

## Increase process visibility

Asset performance monitoring provides real-time data on equipment health and performance, enabling more informed and timely decision making.

## Optimize quality control

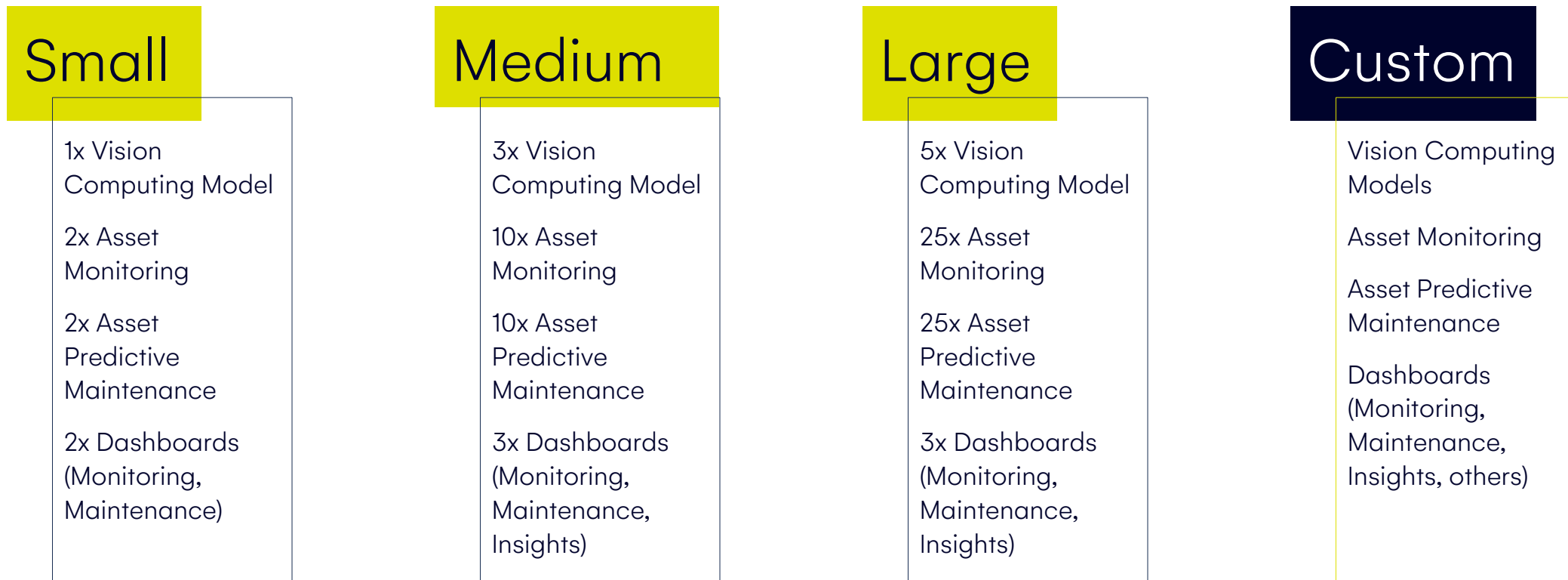
With advanced analysis and monitoring tools, companies can ensure the highest quality standards, reducing defects and improving customer satisfaction.

## Boosting Operational Autonomy

This synergy will not only bring resilience and competitiveness but will also mark a step towards operational autonomy. We are excited to contribute to the creation of smart manufacturing for the future.

# Solution Sizing — A modular approach

In order to **ADAPT TO THE SPECIFIC NEEDS** of any customer, Bravent offers by default three sizes of the same solution as well as a customized approach:



Add-Ons: Energy Monitoring, Sustainability Dashboard, CoPilot assistant, Metaverse, Mixed Reality



Everything you need  
for your  
Digital Transformation

[info@bravent.net](mailto:info@bravent.net)

[www.bravent.net](http://www.bravent.net)

Find us on 