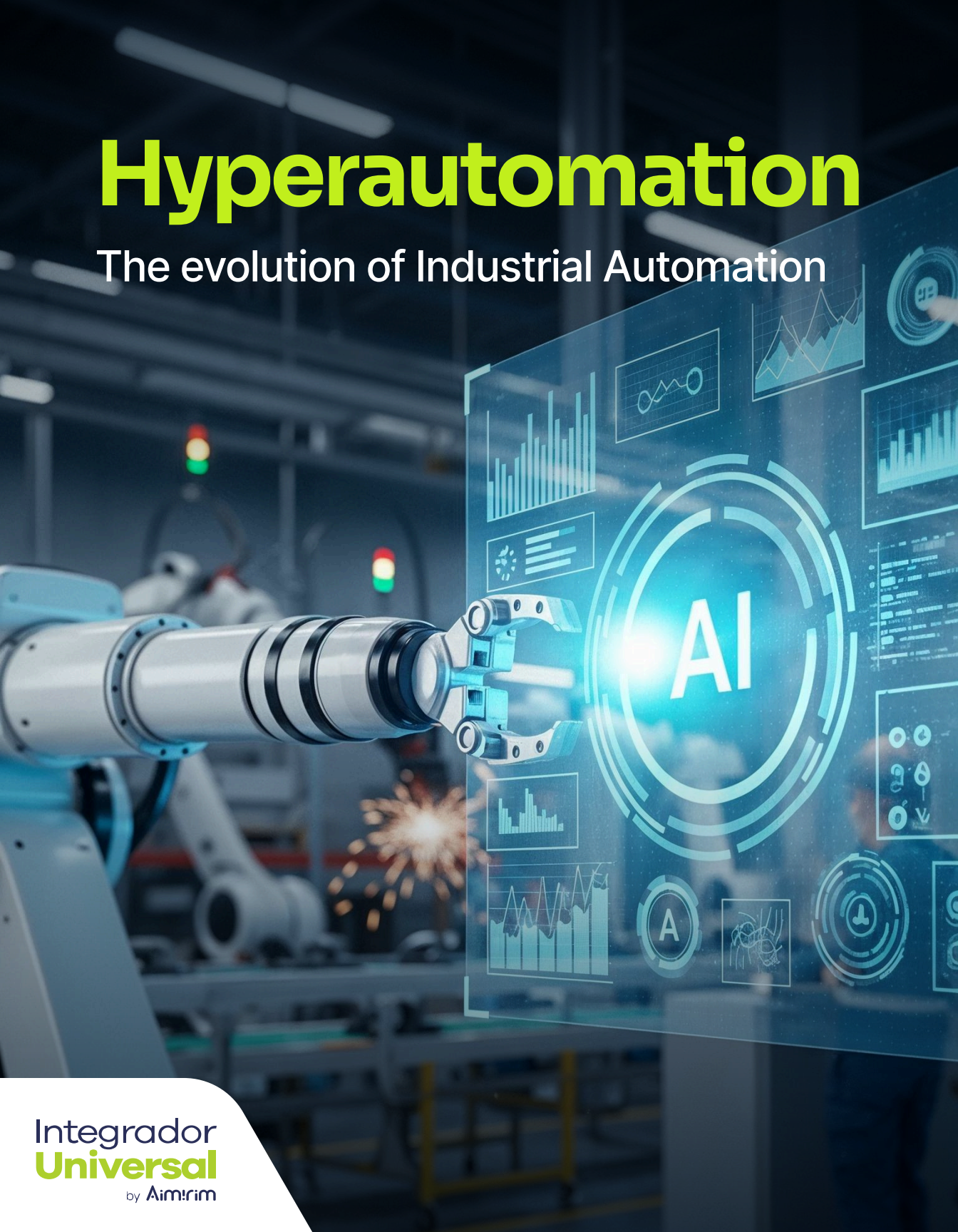
Hyperautomation

The evolution of Industrial Automation



Integrador Universal
by Aimirim

What is Hyperautomation?

Hyperautomation is the evolution of automation. While traditional automation focuses on individual tasks, Hyperautomation seeks to automate and integrate as many processes as possible end-to-end.

It is a strategy that combines cutting-edge technologies that, together, create a more agile, intelligent, and adaptable digital ecosystem. This means moving from a set of individual controls to a model of connected, dynamic, and orchestrated processes.

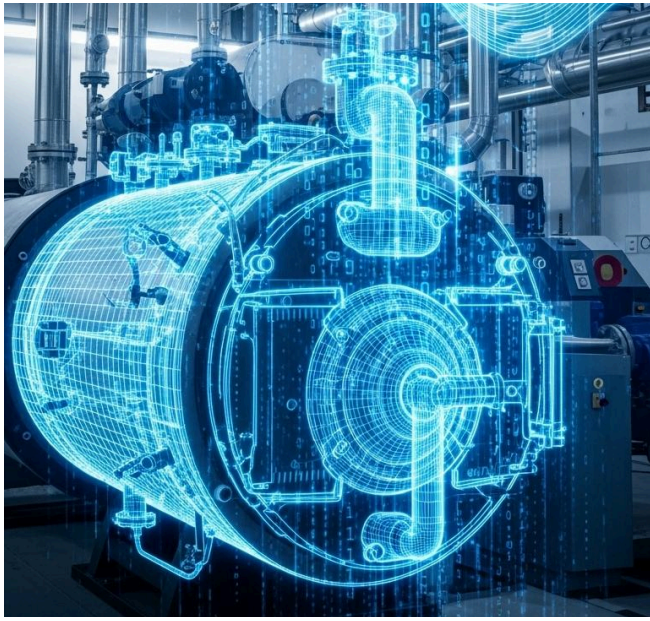
Key Technologies

Artificial Intelligence and Machine Learning

- Capable of learning from historical data, predicting scenarios, identifying anomalies, and even making real-time decisions.
- These technologies make processes smarter and more adaptive, responding quickly to changes in demand or operational conditions.

Digital Twin

- A virtual mirror of the real operation, the Digital Twin allows for simulating, analyzing, and optimizing industrial processes.
- It enables the identification of bottlenecks, testing scenarios, and predicting impacts before any change occurs in the physical environment.



Process Orchestration

- Ensures that all technologies and systems communicate in an integrated manner.
- This orchestration avoids rework, communication failures, and increases overall efficiency, promoting synergy among different processes.

Open Integration (Open Source)

- Open integration eliminates barriers between systems, allowing for interoperability and technological freedom.
- This reduces dependency on vendors and facilitates the continuous evolution of the industrial plant.

Benefits for Industry

Reduction of process variability

- With smarter control, processes become stable and predictable, reducing waste and failures.

Energy and material savings

- Algorithms optimize resource use, adjusting parameters in real-time to consume only what is necessary.

Less raw material waste

- Predictive analysis and advanced control help reduce waste and rework.

Benefits for Industry

More autonomous decisions in real-time

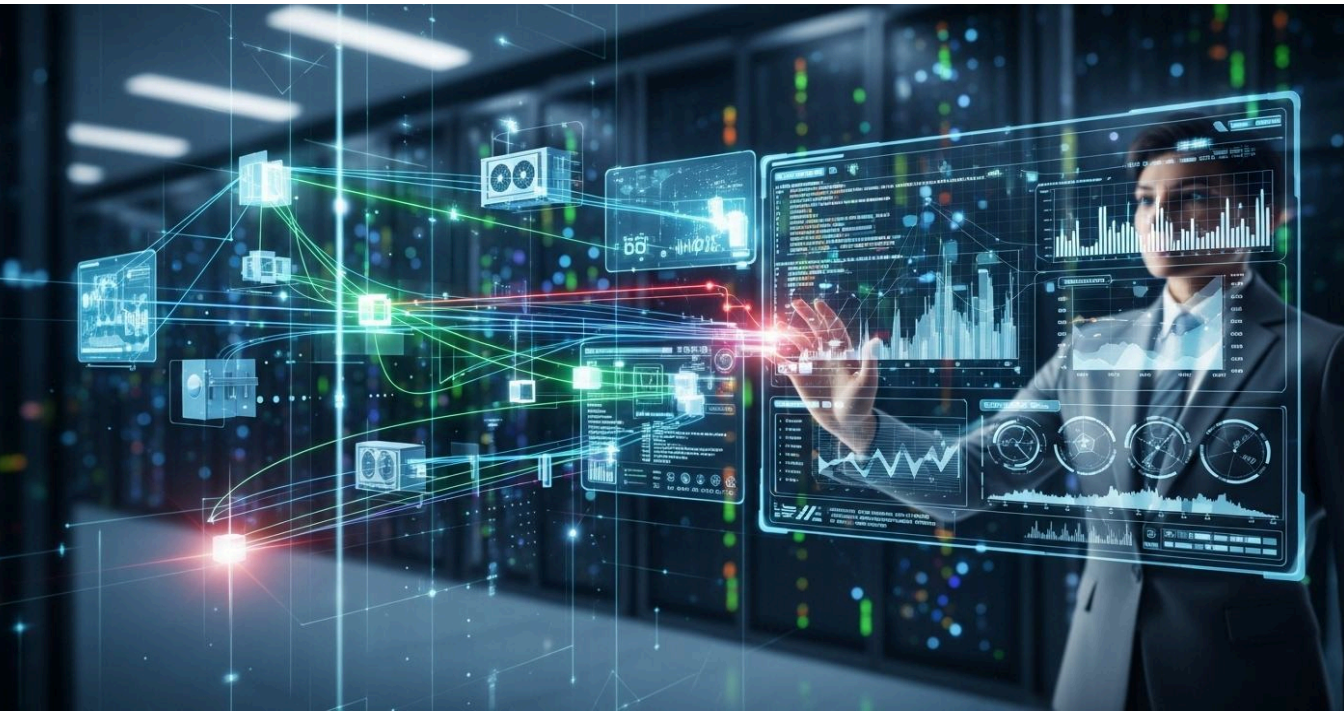
- The combination of AI and automation enables the system to react and adapt without solely relying on human intervention.

Increased operational efficiency

- Faster, integrated operations with fewer bottlenecks mean greater productivity with the same resources.

Scalable and sustainable digital transformation

- Allows for gradual digitization, with visible gains at each stage, without the need for immediate large retrofits.



Hyperautomation and Software Defined

After all this, you must have recalled another concept....

The Software Defined!

Hyperautomation and the Software-Defined concept are fundamentally complementary, where the latter serves as the ideal foundation for the former to thrive.

Essentially, hyperautomation relies on an infrastructure that is as flexible and programmable as the business processes it seeks to automate.

Hyperautomation benefits from Software-Defined architecture in three main ways:

1

Flexibility and Agility of Infrastructure:

For hyperautomation to work end-to-end, it requires both business processes and IT infrastructure to be dynamic. A Software-Defined Infrastructure (SDN, SDS) can be reconfigured instantly via software and APIs. This allows hyperautomation's robots and AI systems (which orchestrate workflows) to also manage and optimize the underlying IT resources.

2

IT Infrastructure Automation:

Hyperautomation has a mindset of "everything that can be automated, should be automated." This mentality applies to both business processes (HR, finance) and IT operations. Since Software-Defined Systems are inherently built to be automated, they provide the programmable surface that hyperautomation needs to apply technologies like RPA and AI in managing networks, storage, and security.

3

Elimination of Technological Silos:

Hyperautomation is about orchestrating multiple technologies (RPA, AI, BPM, Process Mining). The Software-Defined environment reinforces this orchestration, providing a unified language (APIs) for resource management. Thus, it acts as the "brain" orchestrating business processes; the Software-Defined acts as the "nervous system" ensuring that IT resources respond fluidly to these orchestrations.

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In summary, these two enhance each other as the Software-Defined creates the programmable and flexible infrastructure environment that hyperautomation uses to achieve total automation of business processes and IT operations.

Hyperautomation in practice with Aimirim

At Aimirim, we believe that technology should solve real industry problems. That's why our AI and automation solutions were born directly from customer demands.

Practical examples of what we have already implemented:

Advanced control with neurofuzzy, ensuring stability even in highly variable processes.

Machine Learning for analytics and predictive maintenance, identifying failures before they become serious problems.

Open source integrations that allow greater freedom for the client, without ties to specific vendors.

The result: sustainable, scalable, and field-proven solutions that are already accelerating the digital journey of various industries in Brazil and abroad.

How to get started?

It is possible to start implementing Hyperautomation concepts through a planned and intelligent evolution.

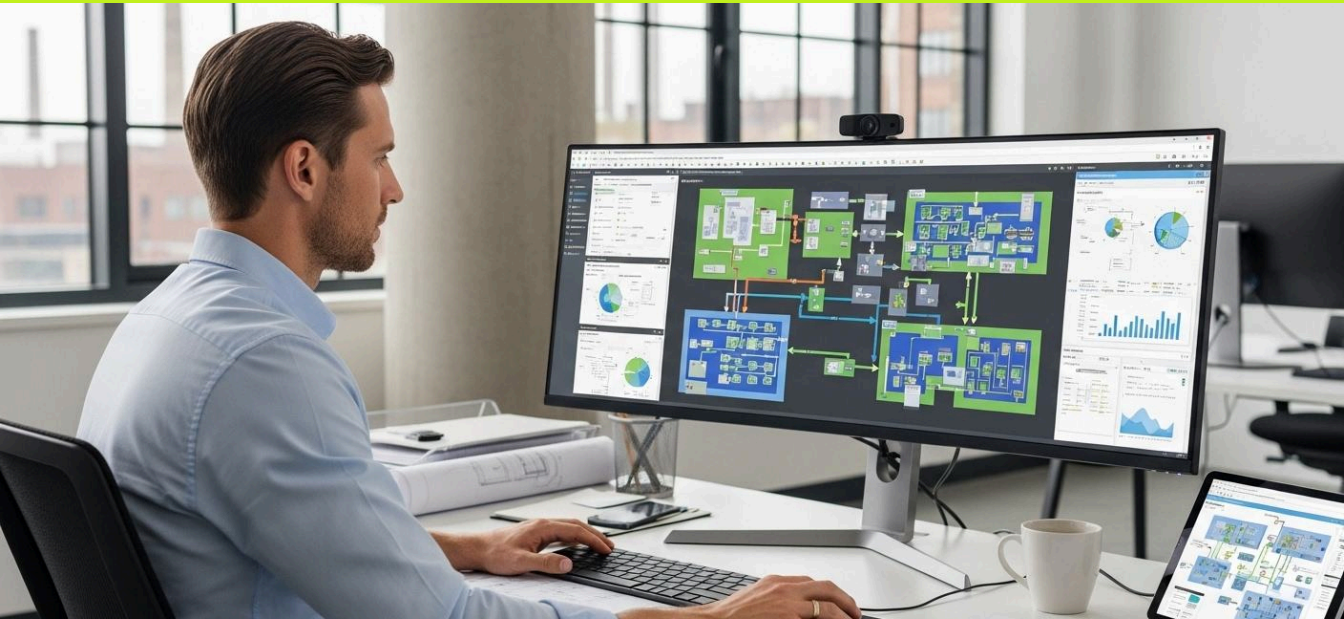
The journey can begin with small high-impact initiatives that demonstrate quick results and build trust in the technology.

Collect and qualify data:

- The foundation of Hyperautomation is information.
- Ensure that your process, maintenance, and operational data are being collected, stored, and processed reliably, enabling you to identify improvement points and proceed to the next steps.

Map your processes:

- With data in hand, it is possible to understand where the opportunities lie. Identify bottlenecks, high-cost processes, repetitive manual steps, and critical decision points.
- These areas are ideal candidates for automation or optimization with AI.



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Start small, think big:

- Begin with a high-value pilot project, such as controlling a critical process.
- Measurable results serve as a foundation to expand the model to other processes.

2

Invest in open technologies:

- Open source and interoperable platforms allow for evolution without relying on specific vendors.
- This ensures flexibility to integrate new solutions as the business grows.

3

Work with specialized partners:

- Technical expertise is a strategic differentiator.
- Companies like Aimirim help design customized solutions that combine automation, AI, and data analysis, always focusing on real and sustainable results.

Ready to take the next step towards Industry 4.0?

The era of Hyperautomation has already begun, and those who adapt first will lead.
Come meet us and see how Aimirim can transform your industry with real, scalable, and intelligent solutions.

Saripe®

Allows for the collection and storage of unlimited data for highly scalable observability in the industrial environment.

Kuab®

Transforms collected data into relevant information using data analytics to generate valuable insights that improve decision-making in the industry.

Opper Arandu®

Advanced Control that uses Machine Learning and Artificial Intelligence techniques to control processes in real-time, adapting to different operational scenarios.

Ceuci® Atiaia®

Smart sensors that generate real-time information to enhance process control and meet operational requirements.

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