

Transforming into a Smart Factory

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Alain Jacques

‘Smart Manufacturing is not an end in itself, but a necessity for flexible, efficient and future-oriented production.’

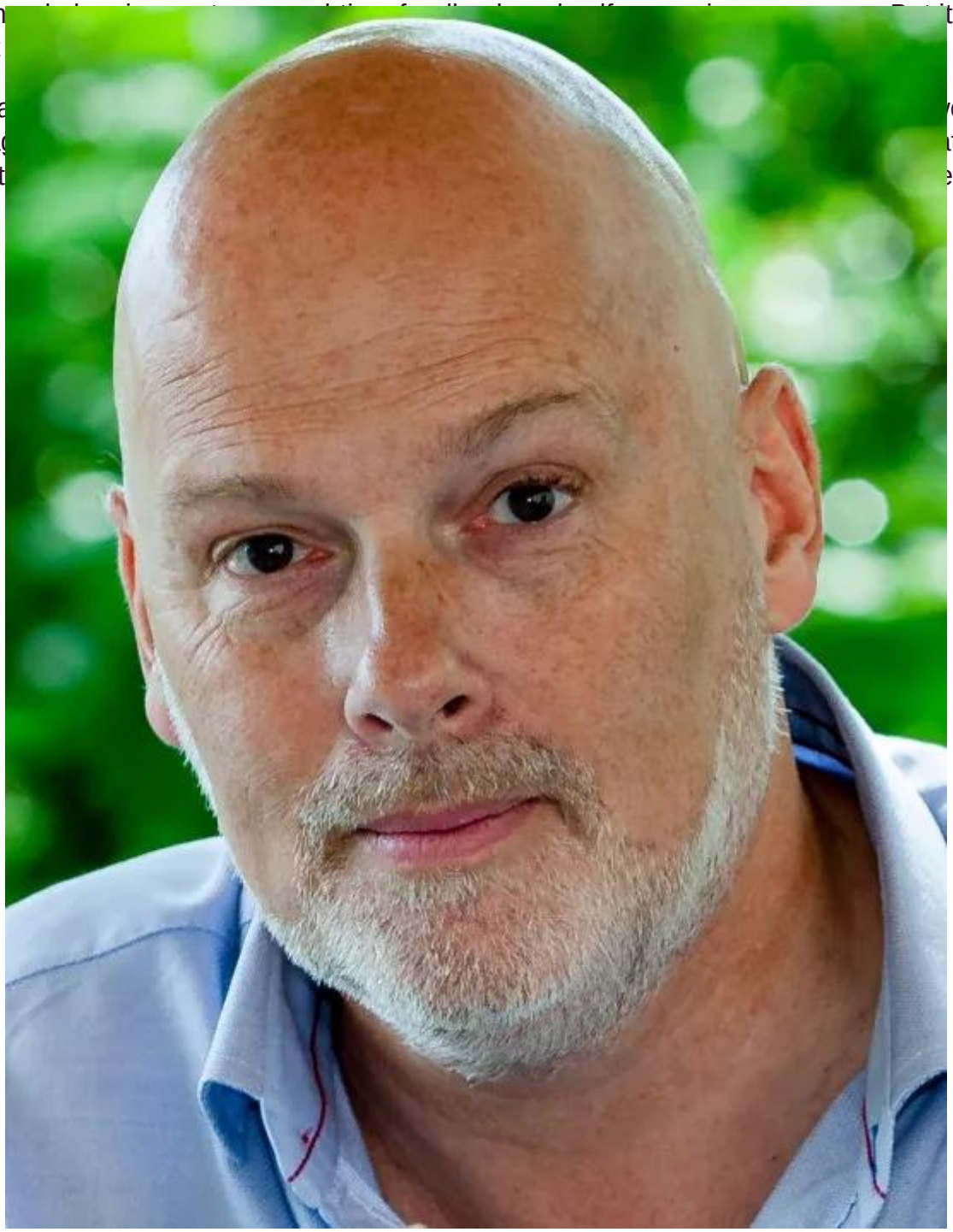
Traditional mass production is gradually giving way to smart, flexible production systems that continuously improve themselves. Smart Manufacturing helps companies work faster, more efficiently and in a more customer-focused way, with minimal waste and maximum quality. We met up with Alain Jacques, Senior Engineer Smart and Digital Factory at Sirris, to talk about the transformation to a Smart Factory.

Hello Alain. What are the key characteristics of Smart Manufacturing?

‘Smart Manufacturing differs fundamentally from the traditional mass production model,’ Alain Jacques begins. ’In the past, an operator would repeat the same task in a rigid, linear system. Today, the reality is much more complex: customers want personalised products, with short delivery times and consistent quality.’

'This complexity requires a completely different approach. ‘Smart Manufacturing is based on strategic collaboration between people and machines, supported by smart technologies. Think of advan t's not just about

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Alain Jacques, Senior Engineer Smart and Digital Factory at Sirris

A concrete example? ‘Whereas an operator used to operate a milling machine manually, this task is now performed by a loading robot. The operator checks the supply of workpieces, intervenes in the event of malfunctions and monitors several machines at the same time. This ensures higher productivity without compromising on quality.’

What systems and infrastructure make this possible?

‘Everything starts with the right technological backbone. Systems such as MES (Manufacturing Execution System), linked to autonomous mobile robots (AMRs) or AGVs (Automated Guided Vehicles), ensure a smooth logistics flow. They transport workpieces, perform quality checks and signal deviations, without human intervention.’

'In addition, real-time visualisations of KPIs and production parameters are crucial. ‘Andon systems and digital dashboards make information visible to everyone. This not only increases transparency, but also engagement and response times when problems arise.’

'A well-coordinated infrastructure also allows strategies such as Quick Response Manufacturing (QRM) to be implemented. ‘Smaller batch sizes, shorter lead times and higher delivery reliability are possible because you can control processes more flexibly.’

What are the concrete benefits of this transformation for companies?

'The benefits are numerous and affect multiple levels of the business:

- **Greater flexibility:** thanks to modular systems and real-time data, companies can respond quickly to changing customer demands and market conditions.
- **Higher quality:** continuous monitoring and automated quality controls reduce the margin of error and ensure that the product is manufactured correctly the first time.
- **Better motivation in the workplace:** operators are given a broader range of tasks and more responsibility, which leads to greater commitment and job satisfaction.
- **Lower costs:** waste is reduced, malfunctions are proactively addressed and resources are used more efficiently.
- **Shorter time-to-market**: faster turnaround times ensure that products reach the market more quickly.
- **Complete transparency**: visual dashboards and real-time feedback ensure that everyone always knows where the process stands.'

But there are also pitfalls, right?

'Most certainly. The biggest mistake is to start with technology without first having a clear strategy. Consider purchasing mobile robots without knowing what batch sizes you need. Or investing in sensors without knowing what you want to measure with them.’

'That's why a structured approach is essential. ‘Start with your production strategy: lean, QRM, push-pull? Only then should you choose your technology. This sequence guarantees coherence and yields better returns in the long term.’

Finally, what advice would you give to companies looking to get started?

‘Know where you stand, decide where you want to go, and work with a partner who will guide you along the way. Sirris and Agoria offer tailor-made guidance, tailored to the maturity and needs of your company. Smart Manufacturing is not a one-off project, it is an evolution. And we are happy to help you on your way.’

Read about the other transformations of the Make The Future programme:

Make the Future: Your Pathway to a Factory of the Future >

Transforming to Digital Factory >

Transformation to Eco Factory >

Transformation to Advanced Manufacturing >

Transformation to a Human-Centred Organisation >

The Integrated Engineering transformation >

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Authors



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