The Industrialist

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"Business networks are key to ensuring industry success, especially open data ecosystems"

Georg Kube
Global VP Industrial Manufacturing, SAP

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SAP´s playbook for manufacturing reinvention

Each month, we speak to a different industry leader about their approach to innovation and emerging trends impacting the industrial sector. For this edition, we talked with Georg Kube, Global VP Industrial Manufacturing at SAP about how the company is helping manufacturing companies to achieve their full potential leveraging SAP solutions and technologies, and his predictions of the game changers that lie ahead.

Industry 4.0: how industrial companies can overcome key challenges

Leveraging digital technologies to achieve sustainable change for manufacturing

Industry trends: what to expect at Hannover Messe 2023 and beyond?

In conversation with SAP's Global VP Industrial Manufacturing, Georg Kube

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Global VP
Industrial Manufacturing,
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Industrial companies today are traversing a path of cautious reinvention. With ongoing and evolving disruption in the market – from changing customer preferences and supply chain challenges, to labor shortages and geopolitical tensions – companies are stabilizing operations on the one hand, while seeking business transformations on the other. From new business models to digitally empowered ways of working, the pressure is on to stabilize and reinvent at speed, at the same time, to compete.

"Transformation, resilience and sustainability – that's what we're focusing on," says Georg Kube, Global VP Industrial Manufacturing at SAP. Georg and his team are helping clients realize their own transformation ambitions by putting the pieces in place to enable a more connected, networked industry that can evolve with agility. We spoke to Georg about what it will take to encourage that change across businesses and industries, the five challenges industry needs to overcome to advance, and why digital twin technology, while not new, is just beginning to realize its potential.

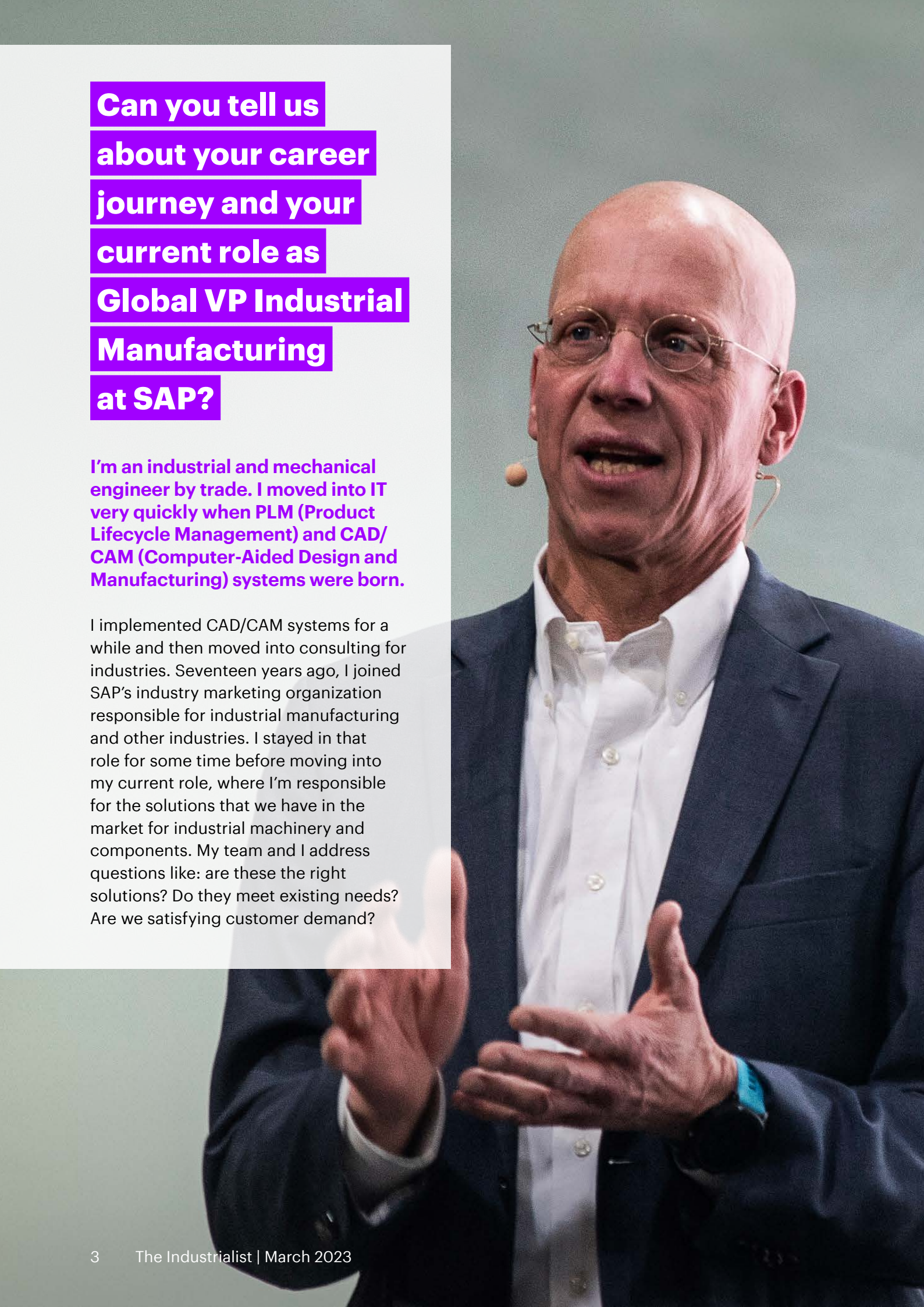
What one word describes you best?

I would use two words: **structured chaos**. I like to live in a world where there is a certain degree of chaos, flexibility and opportunity, where things could happen at any time. But I'm always inclined to give that world structure so I can see the grand scheme.

Can you tell us about your career journey and your current role as Global VP Industrial Manufacturing at SAP?

I'm an industrial and mechanical engineer by trade. I moved into IT very quickly when PLM (Product Lifecycle Management) and CAD/CAM (Computer-Aided Design and Manufacturing) systems were born.

I implemented CAD/CAM systems for a while and then moved into consulting for industries. Seventeen years ago, I joined SAP's industry marketing organization responsible for industrial manufacturing and other industries. I stayed in that role for some time before moving into my current role, where I'm responsible for the solutions that we have in the market for industrial machinery and components. My team and I address questions like: are these the right solutions? Do they meet existing needs? Are we satisfying customer demand?



In the last decade companies have operated under increasing levels of disruption. Where do industry and manufacturing companies stand in terms of leveraging digital technologies to achieve sustainable change? And what challenges do they need to overcome?

Last fall a major German newspaper led with the headline: Industry 4.0 – "Ten Lost Years." The article argued that despite Industry 4.0 and digitization, productivity isn't where it should be. I believe we could be further ahead, but without digitalization and Industry 4.0 – given the ongoing disruption – we would be way behind. However, there are a few things not going well. We're seeing huge implementations and lighthouse projects in large companies, but not across the board. There are five major challenges we need to overcome as an industry when it comes to Industry 4.0:

1 **Prioritizing technology over business scenarios.**
Companies talk about sensors, protocols and connectivity first, but the ***conversation should begin with business scenarios.***

2 **Taking a cost-driven approach.**
Initiatives are centered around making manufacturing more efficient. But the real opportunity is in the top line, not the bottom line. Companies should ***think about how to make more money*** instead of how to make money with less costs.

3 **Thinking in silos.**
Many business initiatives are in manufacturing – the initiatives don't look at engineering, sales, or finance. That's a big problem, as many of these intitiatives have financial ***implications across the entire enterprise***.

4 **Reluctance to share data.**
Digitalization requires data sharing, and if people do not share data, that's a problem.

5 **Limited scalability for small and medium-sized businesses.**
Many implementations work for big companies that have lots of resources. But they don't scale for small and medium-sized businesses (SMBs) in the industry. When it comes to implementation projects, ***digital technology adoption and scalability*** is essential for faster SMB growth.

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What is the wider industry's role in addressing these challenges? What role do business networks play in this context?

We've all heard about Manufacturing-X - an initiative to digitalize supply chains in the industry – as the next big thing in the German and European marketplace.

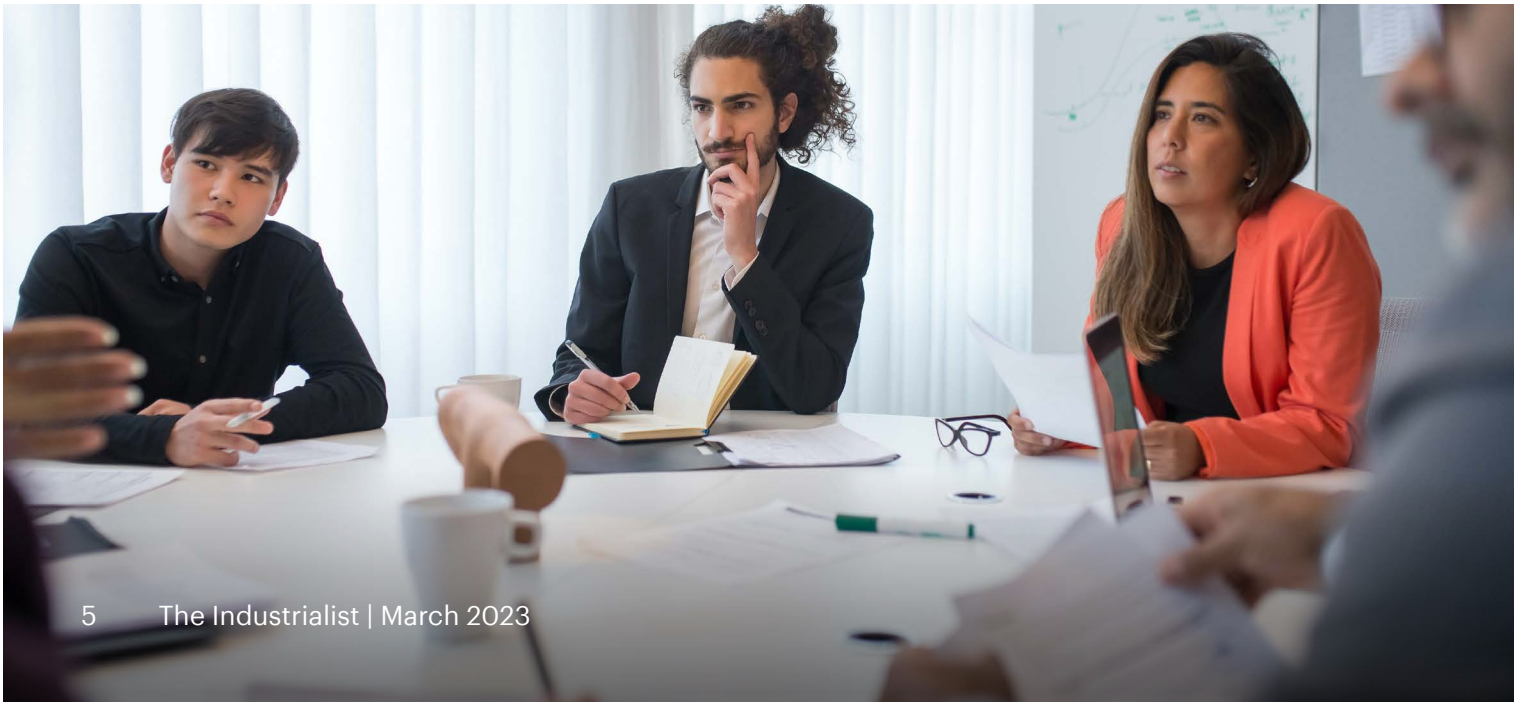
Manufacturing-X is an open data ecosystem, which uses concepts from Catena-X – the collaborative, open data ecosystem for the automotive industry – and applies it to all industries, with a focus on industrial manufacturing. It addresses many of the challenges I have mentioned, especially the data sharing aspect. Because in a business network where data is shared in an open and trusted way and where every participant maintains sovereignty over their own data, suddenly the reluctance to share data reduces. I believe business networks are key to ensuring industry success, especially open data ecosystems like Manufacturing-X and Catena-X.

What is the key to industry adopting a completely networked operating model?

Out-of-the-box thinking, trust and interoperability.

Everybody thinks 'this is what I can do well, because it's what I've always done.' But they need to think outside of the box. For some, that's easier than for others. Some change their business model easily, others don't. The next thing they need is trust.

If businesses don't trust each other, they will not be able to give the data others need in order to have a good networking effect. Lastly, it's about interoperability. Even if I want to work with others and am willing to give them my data, that can be hard if the standards don't fit, and they cannot transmit and access the data easily.



How does SAP help manufacturing clients accelerate their digital transformation to achieve their full potential?

The real potential lies in the business perspective.

We ask what additional business models customers and clients can achieve by using the technologies and solutions that we provide. In my industry, this is mainly centered around additional offerings related to existing physical products in the service space. For example, instead of just selling compressors, you can charge for the compressed air that it produces. You can apply the same concept to printing machines, construction machines etc.

Service-based business models are a key element of what we're helping our customers achieve. We have a Kaeser for compressors, we have Bitzer for compressors as well, but also a Wacker Neuson, which is a company that constructs building equipment that you see on roadsides. They're also moving to a rental subscription/as-a-service model using SAP technologies. We provide the business layer for digitalization while many of our partners provide the connectivity and edge-oriented layer.

How can manufacturers drive real value from circular business models?

A client we work with that produces roller bearings has so much pride in the fact that they recycle and remanufacture their products.

They do this for the larger ones that you find in wind turbines, but not the smaller ones found in household machines. Yet it's a relatively simple product and remanufacturing makes total sense because it saves them about 40% on energy and raw materials by re-using what they already have. Another example: Volvo Construction Equipment completely refurbishes big engine blocks from construction machines. This is one of the most effective ways for industrial manufacturers to drive sustainability, because it directly reuses raw materials and reduces their energy consumption and carbon footprint. Savings of around 40 to 60 percent can be made, which is significant.

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What trends do you expect to see at Hannover Messe this year, and what will SAP's focus be?

I'm looking forward to Hannover Messe because I hope it will be back to pre-pandemic visitor numbers and good interactions. With regards to "what to expect there":

Companies are caught in a tension between saving what they have and cautiously creating a resilient business. They are stabilizing their operations in terms of the supply of raw materials, energy etc. But they are also venturing forward, transforming their business and opening up new markets. A big topic SAP sees is **business transformation** – everybody's looking for the next business model. Another is **resilience** – stabilizing the supply chain to be able to fulfill orders. Third is **sustainability**.

There's just no way that a company today can do business without maximizing sustainability by reducing their carbon footprint and reusing materials. Transformation, resilience and sustainability – that's what SAP and our partners are focusing on at Hannover Messe. We – jointly with our ecosystem – will showcase a lot of innovations in these three areas.

I expect there will also be a lot of buzz around Manufacturing-X, the German initiative to create an open data ecosystem for the manufacturing industries – not only industrial manufacturing, but also chemicals, medical, high tech, aerospace etc. All these companies require a better way to interact and share data, and Manufacturing-X is going to do just that. We at SAP are deeply involved and will talk about our strategy in this area.

What digital technologies will be a game changer for the future of manufacturing?

What is dearly needed, and where I see a lot of advancement, is digital twin technology.

We've been talking about digital twin technology for many years. But the tech has always been lacking in two dimensions. First, interoperability. Digital twins didn't talk to one another across, for example, engineering, manufacturing and services. As new standards like the asset administration shell emerge, driven by Manufacturing-X, there is a structural layer emerging that will create the interoperability of digital twins between companies. The second element lacking is around the visualization layer. So far, digital twins have been very rudimentary 3D models. Now, the **industrial metaverse** is developing. Imagine a structurally correct, interoperable digital twin of all types of products, buildings, factories and machinery coming together in a metaverse, where people can immersively engage and collaborate. This is going to be a big, big, big step forward and it´s also supporting the network effect we´ve talked about earlier.

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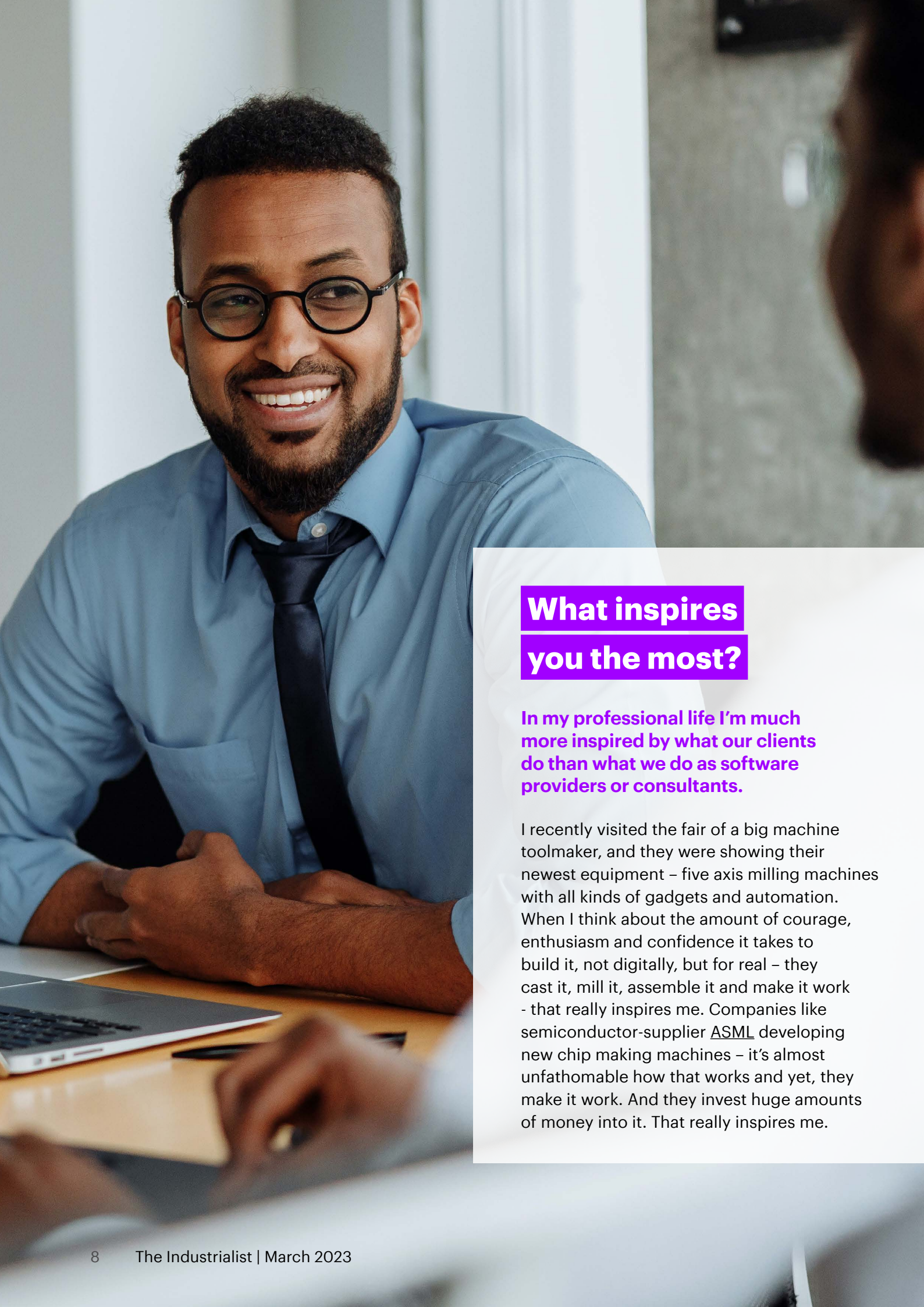

What inspires you the most?

In my professional life I'm much more inspired by what our clients do than what we do as software providers or consultants.

I recently visited the fair of a big machine toolmaker, and they were showing their newest equipment – five axis milling machines with all kinds of gadgets and automation. When I think about the amount of courage, enthusiasm and confidence it takes to build it, not digitally, but for real – they cast it, mill it, assemble it and make it work - that really inspires me. Companies like semiconductor-supplier ASML developing new chip making machines – it's almost unfathomable how that works and yet, they make it work. And they invest huge amounts of money into it. That really inspires me.

In closing

While leading manufacturing companies are now realizing significant value from disruptive technologies, a majority recognized that implications on processes, organization and strategy have been underestimated. Thus, they're struggling to capture the full potential of their digital transformation efforts. In other words: The connected product enforces internal change.

How can manufacturers reinvent and capture the full potential of digital transformation?

The term Industry 4.0 originated in 2011 as part of a project in the German government's high-tech strategy and was publicly introduced that same year at Hannover Messe. Typically, it refers to digital technologies—such as the internet of things (IoT), AI, and big data analytics—applied in factories and plants to make those businesses more efficient and effective. In this context, the connected product is triggering different requirements and constant change on manufacturing processes, business models, collaboration and the internal organization. While industrial companies across the globe are already acting upon the need to transform to remain relevant, we see only a small group – we call them the Reinventors – adopt the strategy we coined as "Total Enterprise Reinvention".

So, what does it mean to continuously reinvent the industrial enterprise? Enterprise Reinvention is an enabler and a strategy aiming to push a company's performance continuously to a higher level, allowing for new business models to thrive while unlocking growth and future success. And it's centered around a strong digital core that connects the entire enterprise to its engineered connected products and services.

The digital core combines the cloud infrastructure and services, AI capabilities, and the data governance model spanning over the data generated by products and services in operation, the systems of records, and all platforms. That means it is a company's technology-based enterprise architecture; the digital core is no longer just important – it´s a prerequisite.

Establishing a digital culture is equally important. Businesses will quickly fall behind if digital skills and data literacy aren't made core competencies throughout the entire organization. Successful Reinventors will therefore look to instill digital acumen not only across the C-suite but also, most importantly, consistently throughout the entire workforce.

Industrial companies that continue to embrace rapidly advancing digital technologies and drive reinvention will be better positioned to thrive and create long-term value for their stakeholders. The results from our report significantly show this, and the insights provided by SAP´s Georg Kube in this edition of The Industrialist emphasizes this, too. A focus on business transformation as well as resilience and sustainability – all centered around digital technologies and networks – will help manufacturers be successful in the rapidly evolving industry.

Best regards,

Thomas Rinn
Senior Managing Director,
Global Industrial Lead, Accenture

About The Industrialist

The Industrialist is our monthly digital magazine that puts game-changing perspectives in the spotlight. It combines thought-provoking content and insights, to keep you on top of what's new in the industrial industry.

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