Connecting the Physical and Virtual Worlds

André Käber is CEO of the global SAP logistics partner Leogistics.

Many companies are still using SAP releases that are incompatible with new trends in technology. In this exclusive interview with E-3 Magazine, André Käber (CEO of the SAP logistics partner Leogistics) talks about the impact the Internet of Things, blockchain, and artificial intelligence are having on the industry.

What challenges do you think will be presented by the further digitalization of supply chains?

André Käber: When it comes to the digitalization of the logistics chain, there's no universal solution. Every industry and sector has its own specific requirements. This is why the first step is to understand these needs and assess them in terms of their digitalization potential. Here, companies and their logistics networks need to figure out how to combine their existing IT and logistics systems with new, disruptive technologies and methods in ways that make sense. Then they can move on to verification and testing. The process of adopting a new and different mindset isn't easy, but it's the only way to make a successful transition to new business models. In our experience, implementing and testing digital innovations works best with proofs-of-concept that are lean, agile, and limited to a clear functional scope. To understand what this means, it often helps to see it with your own eyes.

What consequences can companies in the supply industry expect to face if they don't digitalize their processes?

Mr. Käber: They'll run the risk of growing increasingly detached from their customers' logistics chains. We can assume that customers will pass the costs of manual processes (which indicates a lack of digitalization) on to their suppliers going forward. This could even lead to suppliers being excluded from supply networks entirely.

Many of logistics service providers have a difficult time dealing with topics related to digitalization. Generally speaking, what gives these companies the biggest headaches?

Mr. Käber: In our field – supply chain execution – lots of customers are working on digitalizing their transport and yard logistics. We're seeing a number of factors that influence these efforts. Chief among them is the aim to achieve seamless integration in future systems, especially as current SAP landscapes evolve toward S/4HANA. Coming from the monolithic world of ERP, companies are now having to upgrade their systems just to make them compatible with the IoT. This is what many of them are struggling with; in our industry, going 15 years without updating to a new SAP release is nothing out of the ordinary. Customers also feel like they've already invested a great deal in their IT. However, you have to make these modernizations before you can incorporate sensor technology and wireless systems – and especially the large quantities of data generated these days, including the geodata required in intelligent truck routing. Customers often expect to follow a road map that works in every situation, but unfortunately, there's no such thing. Ultimately, you have to go about digitalization on a case-by-case basis. Our approach involves viewing the supply chain from a holistic perspective and working with companies on developing a transformation road map – from SAP LE TRA to S/4HANA, for example. Due to paradigms like Industry 4.0 and the Internet of Things, more and more aspects of production and supply chains are being integrated and made trackable in real time. This is another thing that's posing major challenges to logistics providers.

What problems do companies need to solve in this regard, and how important are open platforms?

Mr. Käber: Integrating hardware in plant logistics and decoupling manual process steps takes a tremendous amount of effort. Companies are concerned with how they can automate their locations, which involves check-in terminals at access points, scales, OCR systems, scanners, and of course, sensors. Meanwhile, the customers of logistics providers are looking to control their supply chains in increasingly proactive ways. They also want constant access to information on whether a delivery is on schedule and the exact time at which it will arrive. The ability to scan barcodes and sensory information thus forms the foundation of your ability to meet this customer need with real-time information both within and outside of factories. As soon as your core systems are brought up to a new, IoT-compatible standard, it's a good idea to take further steps to determine which of your business processes can be digitalized and which technologies or platforms might be suitable for this purpose. The key here is to choose an open standard that will enable you to switch platforms without significant effort rather than con-

centrating on one platform in particular. In the future, 5G networks (that's the next generation of cellular communication technology) will open the door to interesting possibilities in automating processes and enriching them with even more data.

Are large and midsize companies dealing with different subjects in this area?

Mr. Käber: Midsize businesses aren't any less complex than big corporations. Quite the opposite, in fact: Many of the process steps that the major players have outsourced are still handled internally at smaller companies. That said, budgets are where you really see the differences. Since they often don't set aside separate funds for digitalization purposes, the decision-makers at midsize companies typically expect related issues to be covered by their existing solutions or plug-and-play products available on the market. Unfortunately, things are a bit different in reality.

So where do the difficulties lie?

Mr. Käber: In most cases, there's a layer missing that would connect a company's traditional ERP landscape to the physical world – through sensors, collaboration processes, and the localization of goods, for example. At the moment, it's still common to have a large number of manual intermediate steps. Even though there are data standards for transporting containers, for instance, each company uses them differently. This is part of the reason why you only start to see benefits when the data is combined with information from the sender on a tracking platform. In every new instance, this requires development and integration effort and another discussion of where it makes the most sense to incorporate an interface into the process.

What role does Leogistics' own Digital Supply Chain solution play in this context?

Mr. Käber: We've incorporated our solutions for tracking and tracing, transport planning, collaboration, transport execution, and plant-internal logistics processes (which complement the standard SAP SCM portfolio) into a single platform. Digital Supply Chain thus forms the connective layer I mentioned between the physical and virtual worlds. It also facilitates comprehensive and seamless operative control of both internal and external transport processes across all carrier modes – by road, sea, and air. With Digital Supply Chain, other process participants can be efficiently integrated into not only process landscapes, but IT and system environments, as well. Finally, the platform is also compatible with IoT approaches and other IoT platforms in the cloud.

In what areas of logistics management could blockchain technology make processes significantly shorter in the future?

Mr. Käber: Blockchain technology will continue to gain importance and establish itself in every area where the same unalterable information needs to be provided to a wide range of participants in a given process. Think of freight and customs documents, for example. At the same time, blockchain will have a far-reaching impact aon freight platform providers, as well: The chance to process inquiries and contracts in a legally compliant manner through end-to-end communications could cut out expensive intermediaries. Today, it costs up to 12 Euro just to commission a shipment, which can really add up at larger volumes. In freight contracts in particular, blockchain technology could usher in a shift from B2B to end-to-end relationships. Every company would prefer to deal with its customers directly, after all.

What ramifications will AI algorithms have in logistics? What will they mean for logistics providers and supply chain management in general?

Mr. Käber: AI is becoming a bigger and bigger topic in logistics, where algorithms based on image recognition can speed up things like inventory processes. In a related proof-of-concept, for example, we've implemented automated counting of bundled steel pipes by teaching a system to recognize the pipes' structure. This saves a great deal of time in stock-taking. At BMW's plant in Spartanburg, South Carolina, we also analyzed logistical data on vehicle movements on the premises. Based on machine learning, we were then able to automatically calculate how long it would theoretically take for a truck to transport any type of load between any two locations at the plant. As a result, the system in use can now automatically specify when a trailer needs to get moving. It's safe to assume that evolutionary algorithms will change traditional just-in-time and just-in-sequence logistics by making it possible to optimize schedules from second to second with the help of artificial intelligence.

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