SAP® migration meets smoothie

Maximizing supply chain efficiency with blockchain and other technologies

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How can enterprises respond promptly and effectively to supply chain disruptions with the goal of maintaining and effectively managing their production and distribution operations? Local presence isn't necessary.

With the right mix of cloud services, data integration and IoT, plus blockchain technology, the supply chain can be managed online, which is an essential advantage in this day and age. This smart combination creates an effective, end-to-end solution with transparent supply and production chains. It safeguards business continuity and equips the organization to overcome existing and future challenges. Using the example of "Connected Greenhouse" use case demonstrates what is already possible with today's technology.

Unexpected events can hit manufacturing enterprises hard. Supply chain disruptions aren't isolated phenomena.

According to the German Association for Materials Management, Purchasing and Logistics (BME), around 77 % of manufacturers experience at least one disruption per year – and 37 % of BME survey respondents had seen more than five in a 12-month period.
The result: millions in revenue losses.

Global supply chains and expanding global networks, from component and raw materials suppliers to manufacturers and retailers, need effective monitoring and disruption protection – ideally in real time.

Total visibility with cloud2cloud integration

By the time products end up in consumer hands they have been through a multiple-step supply and production process – and that applies whether the manufacturer is an SME or multinational corporation. For example, the supply and production chain for an organic smoothie extends from sowing and harvesting, ware-housing and refrigeration, transportation and processing to distribution and sales.

How can the manufacturer monitor, manage and optimize all that? How can it keep the supply chain intact by ensuring that necessary raw materials are always available to the production facilities in the required quantities? And how can it structure the relevant processes, so that an auditor will certify the product as organic?

The T-Systems "Connected Greenhouse" showcase impressively demonstrates how multiple state-of-the-art technologies can be profitably combined. Cloud2cloud integration of T-Systems' Cloud of Things and SCP (SAP® Cloud Platform) makes it possible to monitor supply and refrigeration chains.
How does it work?
With integrated IoT, blockchain or machine learning. IoT devices collect data on the consignment's location, humidity or temperature and use it to optimize the transportation of products, such as the apples used to make the smoothies. SCP – which is central to the construct – also makes automated supply chain process management at the customer back-end possible in addition to monitoring. For example, if detrimental changes occur to soil quality (e. g. moisture content or pH value) irrigation systems can be automatically activated and fertilizer orders can be automatically initiated. If the system registers a refrigeration chain interruption during transportation, it can automatically send out a new order for the smoothie ingredients. Order-based production is managed and optimized in SAP® ME (Manufacturing Execution).

The additional integration of SAP® Retail allows the use of smart refrigeration units at retail outlets to obtain consumer purchasing data and automatically reorder the products from the manufacturer on a just-in-time basis. T-Systems' DigiFront solution displays all data to the user on an at-a-glance dashboard. Thanks to SAP C/4HANA® integration all enterprise process data can be aggregated intelligently to provide consumers with needs-oriented information about content, ingredient origin and supply routes.

Transparent processes or apples in the blockchain

The supply chain participants collect vast amounts of data during the supply chain processes. This data has to be reliably stored and held available in a transparent and manipulation-proof way. That's where blockchain technology comes into play. All of the data stored in the cloud is written in parallel on a central blockchain (if there's one participant) or decentral blockchain (several participants) based on SCP. In our smoothie use case, IoT, production, delivery and origin data for the apple consignment are contained in one block. The blocks are cryptographically linked or 'chained' and synchronized for all participants (e. g. manufacturer, carrier and retailer) to maximize transparency and manipulation security. This delivers significant advantages to everyone involved because the parallel and automatic backups in the blockchain reliably protect the data over the years. Official audits can also be efficiently managed and maximum transparency vis-à-vis distribution partners is ensured.

Start small – think big

T-Systems' comprehensive end-to-end solution for cohesive business continuity is based on a smart combination of components and connectivity between various apps and systems. But customers don't have to go all out. For example, if all they initially want to do is automate and extend the scope of production monitoring, stand-alone solutions such as SAP® ME are a good choice. These solutions also manage, analyze and store auditable data on the blockchain in a cloud2cloud integration scenario and can be connected to the customer's cloud solution (AWS, Azure, Google). T-Systems provides the infrastructure plus integration in the SAP ecosystem on a one-stop basis: Platform, solutions and services. Customers can "start small" until they find the solution that is the best fit for their business plan and ideally matches requirements. Over time, they can add further modular and scalable elements to the total solution.

Summary

The growing interconnectedness of sectors, economies and entire continents makes seamless supply chain management and fast responses to supply chain disruptions essential. T-Systems offers both, standalone and end-to-end solutions that are currently deployed by customers in the automotive and plant engineering industries. The next generation is already in the pipeline: The Telekom Innovation Platform developed in collaboration with SAP SE will further simplify the integration of existing services in the SAP® ecosystem. Enormous potential can be additionally exploited by making changes to business models that improve the flexibility and speed of responses to unexpected events – for example, by adapting billing processes or switching production over to other product lines.

About Andreas Schmidt

Since 1986 Andreas Schmidt is part of Deutsche Telekom. He worked for different departments within Deutsche Telekom and since 2000 he's been working with SAP® solutions at T-Systems International GmbH. Starting as ABAP developer 20 years ago he soon took over responsibility as development and offshore coordinator for different international projects. As a consultant and project manager for the SAP® Solution Manager he worked several years in Europe and US. 2018 Andreas moved to the Portfolio Management SAP® at T-Systems International GmbH as Offering Manager for the topic Digitalization with SAP® solutions.

About T-Systems

T-Systems is one of the world's leading digital service providers. It is based in Europe and offers integrated solutions for business customers. The company uses a global infrastructure of data centers and networks to operate information and communication technology. As a leading end-to-end service provider for SAP® solutions, it covers the entire value-added chain of the SAP® lifecycle. And it provides everything from a single source: from secure operation of existing systems and classic IT and telecommunications services to transformation to the cloud and SAP S/4HANA®, and from needs-based infrastructure, platforms, and software to new business models and innovation projects in the Internet of Things.

Further information is available at www.t-systems.com

Click here for the video Conntected Greenhouse Showcase

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