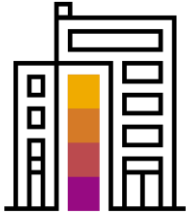




SAP® Innovation Awards 2020 Entry Pitch Deck

Enabling the Digital Factory with a Future-Proof and Global Manufacturing Platform
thyssenkrupp Presta AG



Company Information

Headquarters	Eschen, Liechtenstein
Industry	Automotive
Web site	www.thyssenkrupp-presta.com

Operating across 17 plants and development facilities in 11 countries, thyssenkrupp Presta AG is one of the world's leading manufacturers of steering systems. Providing components for more than 20 million vehicles each year, the company partners with leading global car manufacturers to develop innovations that are shaping the future of the automotive industry.

With the reliability of its steering systems integral to vehicle safety, maintaining the highest quality standards is essential for thyssenkrupp Presta. Key to helping safeguard these high standards is full traceability of materials right across supply chain and manufacturing processes.

To achieve this, the company established a digital manufacturing platform based on SAP® Manufacturing Suite, SAP Leonardo® IoT, the SAP ERP application, and the SAP Analytics Cloud solution. This enabled thyssenkrupp Presta to combine production data with machine data to track every stage of the production process while harnessing sophisticated, cloud-based analytics to provide live shop-floor reporting.

Using SAP solutions, the company can meet and exceed stringent client traceability requirements. It can also pinpoint and address any production issues quickly to help ensure optimal product quality.

Maintaining High Quality Standards with Digitalized Processes

thyssenkrupp Presta AG



With SAP solutions, we can fulfill customer traceability requirements faster and more efficiently while gaining production insights that help us improve quality.

Roland Kerbleder, Operations Excellence Manager, thyssenkrupp Presta AG

Challenge

thyssenkrupp Presta needed to meet customers' traceability requirements and wanted to enable live reporting and insight on issues that could lead to product defects.

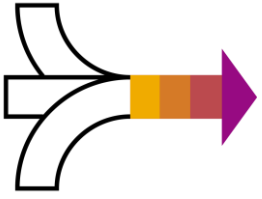
Solution

The company implemented a digital manufacturing platform based on SAP Manufacturing Suite and integrated it with SAP ERP, SAP Leonardo IoT, and SAP Analytics Cloud.

Outcome

thyssenkrupp Presta can quickly and efficiently trace components across the entire production process while gaining the transparency required to identify and rectify any quality issues fast.





Business Challenges and Objectives

To fulfill the robust quality control demands of its customers, thyssenkrupp Presta needed to provide full traceability across every stage of the manufacturing process for its products. With as many as 300 components used in each steering system and assembly taking place across up to five plant locations for a single product, gathering this information was a challenge.

Furthermore, data was stored across disparate legacy systems. This meant providing the necessary level of detail was complex and time-consuming.

thyssenkrupp Presta wanted to create an integrated platform for both machine data and production data. This would enable the company to digitalize every part of the order-to-execution process – from communicating order information and executing tasks using machines to managing employee activities that do not involve the equipment. The manufacturer also wanted to provide staff at every level with fast and easy access to detailed live reports on which to base decisions while enabling the identification and mitigation of quality issues at an early stage. In addition, the company wanted to use data collected during manufacturing execution for data analytics, enabling future process and product improvements.



Project or Use Case Details

thyssenkrupp Presta implemented a unified manufacturing platform based on SAP Manufacturing Suite and SAP Leonardo technologies. This enabled it to further digitalize the production process, from initial order to manufacturing execution. The implemented platform covers all production processes for discrete and repetitive manufacturing with serialized and batch production.

The process starts with order information from SAP ERP being sent to SAP Manufacturing Suite, from where master data needed for manufacturing execution is forwarded to a specific machine. The platform uses SAP Leonardo IoT to collect detailed machine data, such as the serial numbers of materials consumed, and return it to SAP Manufacturing Suite. Here, the data is merged with nonmachine production data, such as labor time and offline process data. SAP ERP is then updated with the latest information.

The combined machine and production data is also forwarded using live replication to SAP Cloud Platform. This enables employees to access accurate and detailed production reports based on a single source of truth and unified KPI definitions and calculation logic. As a result, the company achieves full traceability across the manufacturing process and can quickly identify deviations that could affect product quality.



Benefits and Outcomes

Business or Social

- Provision of customers with detailed traceability information across different plants and operating units
- Live insights that enable improvements to production management and quality control
- Standardized best-practice processes that can easily be replicated and deployed across new plants
- Ability to respond quickly and efficiently to increasing customer demands for quality control information

IT

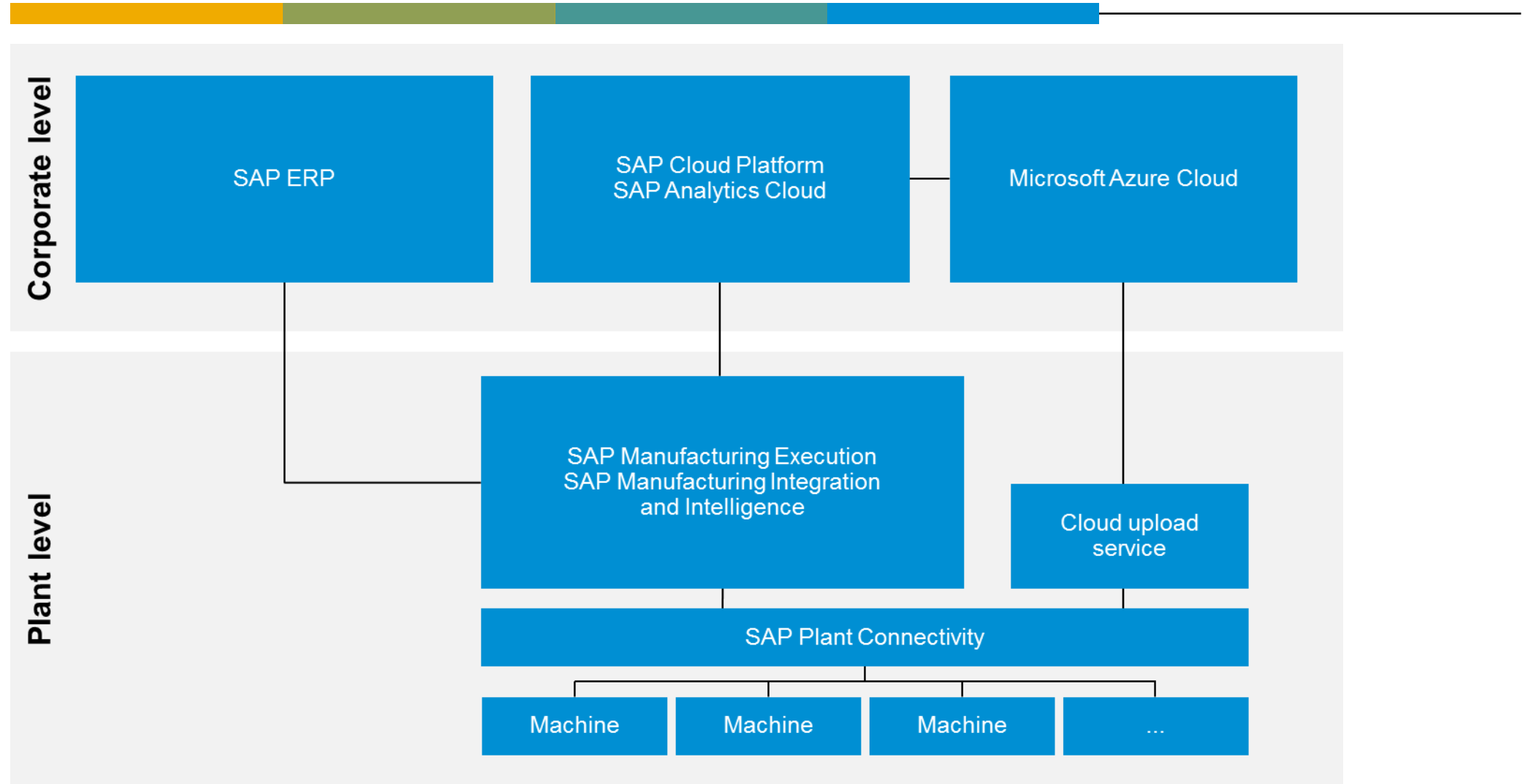
- Harmonization of the IT landscape by replacing home-grown shop-floor solutions with standard solutions
- Retirement of outdated, disparate legacy systems, saving time and costs
- Consolidation of solution landscape management, streamlining system administration
- More freedom to add innovative functionality by developing applications in-house based on SAP Cloud Platform and on-premise systems, reducing dependence on external software vendors

Human Empowerment

- Easy access to relevant production KPIs for everyone from shift leaders to group management
- Single source of truth on which to make informed and fast decisions based on live data
- Better access to relevant information using intuitive tools, helping employees work more efficiently
- Potential to improve collaboration with suppliers and customers by sharing information in the cloud



Architecture





Deployment

Deployment status Live in two plants

Date November 2018 **Number of users** >6,000 (planned)

SAP technologies used:		
SAP product	Deployment status (live or proof of concept [POC])	Contribution to project
1 SAP Manufacturing Suite	Live in two plants	Integration with hundreds of machines and process digitalization using SAP Plant Connectivity software and the SAP Manufacturing Execution application
2 SAP ERP	Live in two plants	Order and master data download Stock synchronization between SAP ERP and SAP Manufacturing Execution Production confirmation to SAP ERP
3 SAP Leonardo IoT	Live	Cloud-based KPI reporting with live data on SAP HANA® software Global traceability and process data analytics
4 SAP Analytics Cloud	Live	Self-service analytics of KPI data

If you have used one of the services or support offerings from SAP Digital Business Services during the implementation or deployment phase, please select with ☒ one or more of the following offerings:

- | | | |
|---|---|--|
| <input type="checkbox"/> SAP MaxAttention™ | <input type="checkbox"/> SAP ActiveAttention™ | <input type="checkbox"/> SAP Advanced Deployment |
| <input type="checkbox"/> SAP Value Assurance | <input type="checkbox"/> SAP Model Company | <input type="checkbox"/> Others: |
| <input checked="" type="checkbox"/> SAP Innovation Services | <input checked="" type="checkbox"/> SAP Innovative Business Solutions | |



Advanced Technologies

The following **advanced technologies** were part of the project.

	Technology or use case	Yes or No	Contribution to project
1	3D printing	No	
2	Blockchain	No	
3	Internet of Things	Yes	Machine integration through OPC Unified Architecture using SAP Plant Connectivity
4	Machine learning or AI	No	
5	Conversational AI	No	
6	Robotic process automation	No	
7	Data anonymization	Yes	Anonymization of labor data
8	Augmented analytics	Yes	Cloud-based and global shop-floor data analytics and traceability