



CUSTOMER CASE STUDY

HENN: Improved production quality helps protect automotive brands

HENN - www.henn.at
Industry - Discrete manufacturing

Goals

- Improve the quality of manufactured parts
- Collect and provide real-time data sharing with internal stakeholders (analysts) and external stakeholders in the supply chain (suppliers and equipment manufacturers)
- Improve visibility into asset conditions to drive efficiency gains

Challenges

- Improving component quality is key to customer satisfaction and a valuable differentiator
- Establishing the cause of part failure was difficult due to outdated legacy systems and uncontextualized data
- Flexibility to combine time-series data with other types of data, like part numbers

Results

- Reporting time decreased from two days to two minutes, contributing to overall efficiency gain of 10%
- Real-time data is collected and accessible on the cloud, enabling quality issues to be quickly identified and managed
- Data sharing among suppliers further encourages improved quality
- Flexible SaaS-based subscription licensing model provides assurance of the most cost-effective approach as software needs fluctuate

Solution

- CONNECT
- AVEVA™ PI System's Edge Data Store

Based in Austria, HENN manufactures connectors for the charging-air and cooling systems found in nearly every type of automotive engine on the road – be it a combustion, hybrid, electric, or fuel cell powered engine. The connectors produced by HENN are used by most of the world’s major car manufacturers. For car manufacturers component failures, can have disastrous consequences for their brand, and therefore they look to their supply chain, which includes HENN, to ensure the highest quality possible.

Outfitted with cutting-edge digital technologies, HENN’s automated manufacturing comprises of 18 assembly lines which produce one connector every 1.7 seconds. HENN also has 420 of its own assembly machines at customer sites which guarantee the connection between connector and hose/pipe and data is recorded for quality purposes. Because transparency and sustainability are central to HENN’s mission, each connector is tagged with a unique data matrix code, enabling traceability.

Prior to HENN’s adoption of CONNECT, however, the data on connector manufacturing and assembly was largely inaccessible. Data scientists and analysts had to expend a great deal of effort to capture information held in disparate legacy systems.

As is common for many discrete manufacturing companies, HENN’s niche market often generates extreme price pressures and high quality expectations. Even a slight variation in the cost of raw materials will impact HENN’s market position. What’s more, like many manufacturers, HENN is hardly immune from increasing pressure to meet regulatory mandates and to better track its product quality.

To sharpen its competitive edge, HENN needed to capitalize on every available opportunity for efficiency gains. The team at HENN knew the quality of its data analysis and business intelligence could make or break the success of its operation, but without the right tools in place, it had reached an impasse as to the continued improvement of its production line.

When HENN subscribed to CONNECT platform services and deployed AVEVA PI System’s Edge Data Store technology, it was able to quickly improve its data capabilities – and gain the insights it needed to improve its operational efficiency and profitability.

“Every part we produce has an individual number. We can trace all 550 million of our parts from cradle to crate. We collate this identifying information together with information that was derived during the production and assembly process, like asset and environmental conditions. The combination of these ensures the utmost safety performance of the parts.”

-
Christoph Jandl

Vice President Corporate Development, HENN

Reliable, structured data makes all the difference

In its former process, HENN was using a proprietary solution provided by the machine vendor for data collection and storage built on a SQL Database and exporting it into a CSV file. Data collection was unreliable and archaic, and the strain of collecting and analyzing so much unstructured data overwhelmed the CPU’s processing abilities. The result of this strain was a slight lag – in some cases, mere milliseconds – between when an anomaly occurred in a machine on the production line and when the legacy database system recorded it, which meant the timestamps for events were misaligned. This made it incredibly difficult to gain any valid insights from higher caliber business intelligence tools, such as Power BI Displays, and ultimately trace back and establish the source of any quality issues.

HENN needed collated, real-time data to gain visibility into its machine operations, to better track product quality, and to share this information securely with the manufacturer of the machine and other suppliers. With AVEVA’s help, HENN created a system that used Edge Data Store to send information collected by their production machinery’s programmable logic controller (PLC) to both its legacy database and CONNECT. Once the data was available on the cloud, HENN was able to unlock new degrees of business intelligence by building doubly indexed data streams, calibrated to both timestamp and part number, to present information in context.

Prior to deploying CONNECT, it took HENN's team two days to validate the production line data. Now, analysts can retrieve data from the cloud two minutes after a connector leaves the machine, and they can run inquiries against large data sets without impacting operations. This improved data processing speed helped increase the efficiency of HENN's operations and the quality control of its product, thereby improving the reliability of the automotive brands that purchase HENN's products.

“With CONNECT and the Edge Data Store, we can monitor and dashboard our products and our assembly lines, and we have the opportunity to create dashboards in different locations – in the assembly line, headquarters, branch office. Our team now has immediate access to data – with just one click.”

-
Gerhard Bechter
Head of IT, HENN

Secure, efficient reporting and data sharing

Without robust digital solutions, compiling reports is a time-consuming process and in discrete manufacturing, where every cent counts, inefficient reporting can add up to a significant drag on profitability. While HENN was interested in streamlining its compliance reporting, it also had other specific reporting needs. HENN needed a way to share data on its assets with its partners, so it could create business and quality reports on its product and encourage competition between suppliers.

As part of its ongoing mission to help improve the quality of its assets, HENN collects at least 15 years' worth of operational data, with an eye toward tracking both production and products.

It uses this data internally as part of a long-term data archiving strategy and also provides these long-term data sets to manufacturers that supply its machines.

With its old process, collecting and sharing this information was laborious and time-consuming. Once it implemented CONNECT, however, HENN was able to share large amounts of data with credentialed partners safely and securely, all with a subscription-based digital solution. The new reporting process translates to a significant decrease in the time HENN's team must spend validating data and generating reports, thereby improving overall operational efficiency.

With online connectivity and real-time flow of information in the cloud, HENN provides visibility of cost and quality benchmark data to all approved suppliers. This encourages competition between suppliers, leading to further quality improvements – for the HENN connector and, ultimately, for the end product, the car.

“We were able to increase the overall efficiency by 10%. Now, we can trace one single part, almost in real time. We could also benchmark the suppliers of the sealing element [used to make the connector] in real time and compare their performances. It's kind of a gamification that encourages competition and increases quality.”

-
Christoph Jandl
Vice President Corporate Development, HENN



HENN's Grafana dashboard enabled by CONNECT

The sky is the limit: Scalable cloud technologies to deliver further benefits for HENN

CONNECT enabled new levels of advanced data analysis for HENN. By analyzing cloud-based data in real time, analysts were able to access data much faster with no development needed.

To build on its momentum, HENN will be expanding on CONNECT platform services to deliver even faster return on investment (ROI).

By removing the traditional barriers to industrial software adoption, AVEVA is helping to accelerate HENN's digital transformation and further improve its agility by scaling data capacity as needed, without incurring additional CapEx, maintenance, or IT support costs.

HENN has adopted solutions that allow it to precisely track and trace the parts it manufactures. Should any problems arise, the team at HENN can easily retrieve the historical information needed to ensure a problem does not reoccur. HENN's forward-looking strategy, combined with AVEVA's cutting-edge digital tools, is paving the way for a safer product and a more efficient manufacturing operation. By further improving the quality of its connectors, HENN is driving quality improvements for car manufacturers, ultimately helping them to protect their brand.