Panasonic BUSINESS

Solutions

Continental Automotive drives towards supply chain evolution

Panasonic completed a process upgrade for Continental Automotive as part of their further evolution toward Industry 4.0. The engineering solution improved efficiency and eliminated search times.

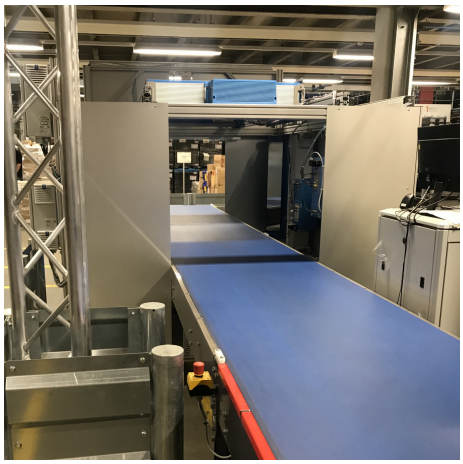
Client - Continental Automotive
Location - Regensburg - Germany

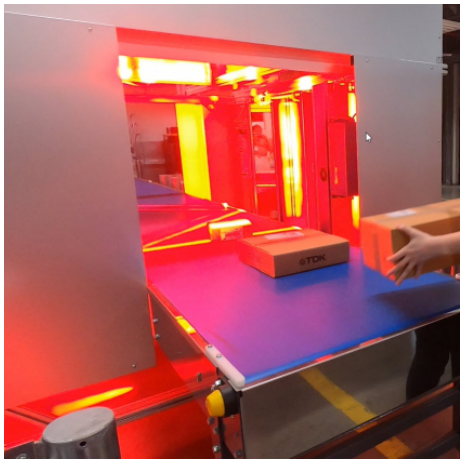
Challenge
As part of a wider move towards industry 4.0, and a transition from lean management to digitisation, Panasonic was tasked with delivering a process upgrade for Continental's automotive factory in Regensburg to streamline operations and improve efficiency.

Solution
Panasonic delivered an engineering solution which included process analysis, a redesign of the layout of the unloading area, physical process automation and the installation of Visual Sort Assist. The project was successful at eliminating search times altogether.

> **Panasonic impressed with their expertise and their attitude. We share the same mindset when it comes to finding innovations that actually offer a business a technical advantage.Clicked**
>
> Mara Siewert- Project manager and Innovation Manager SCM, at Continental Automotive.

Continental





Continental develops pioneering technologies and services for sustainable and connected mobility of people and their goods and is one of the biggest automotive suppliers in the world. The company has always been focused on improving production processes and their vision is to have a fully automated supply chain by 2030, called 'Fast Forward 2030'- a supply chain combining people and automation technology with the goal to provide efficient processes for the end customers. But also aiming to increase safety and improving the work environment for the employees. Panasonic Business Europe delivered an engineering solution for the Continental factory in Regensburg in 2020, implementing state-of-the-art technology and a process upgrade. The solution included process analysis, a re-design of the unloading area, physical process and technical hardware optimisation, and the installation of a Visual Sort Assist solution with direct integration into the SAP warehouse management system. The project was part of a broader technology evolution driven by Continental in one of its two global model factories for Industry 4.0.

A new era for the automotive industry.

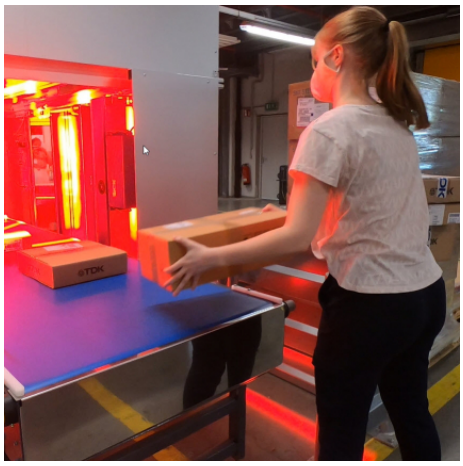
The automotive industry has been the driver for the optimisation of production and supply chain management for decades. From Henry Ford's implementation of the assembly line in 1913 to the integration of just-in-time delivery, often standards developed in this industry have spearheaded global manufacturing progress.

Competitive advantage for automotive companies and their suppliers is won by those who are able to succeed and outperform by implementing innovative and effective lean production and supply chain methods and technologies. However, the automotive industry is in a time of transformation, combustion engines are fast becoming e-mobility or fuel cell technology, vehicles are becoming fully connected and automated and customers are increasingly sharing instead of owning cars. Likewise, isolated production sites are now becoming part of a digital world of smart and connected factories. These developments present many challenges but also promise interesting gains in the areas of electrification, digitalisation and autonomous driving.

'Our colleagues in goods receiving no longer search for single articles, search times do not exist anymore.'

A Model Factory for Industry 4.0

The Regensburg site is one of two global model factories for strategy implementation. At the Bavarian site and in Zvolen, Slovakia, innovative processes and technologies are developed and tested before being rolled out company-wide. Michael Schwarz, Head of Industry 4.0 and SCM Operations at Continental explains, 'We have set ourselves the goal to improve our processes by implementing practicable Industry 4.0 solutions on-site, in the factories and together with local stakeholders.'



With 20 years in leading management positions at Continental, Mr. Schwarz has been a member of the 'Industry 4.0 Council' for more than five years. He explained that the conversation around Industry 4.0 started with the research project "Smart Face" that was developed jointly with the renowned Fraunhofer Institute and the federal government of Germany. The Vision "Fast Forward 2030" drives the transformation from a Supply Chain towards an autonomous Supply Network. Therefore, among other digitalisation initiatives, such as co-Pace, Continental earned the 'Digital Transformer of the Year' award in category automotive from a leading specialist magazine. The focus of the council's work is to define the Industry 4.0 strategy, derive strategic projects, and decide on standard I 4.0 solutions.

Currently in Regensburg alone, Continental is working on 16 Industry 4.0 projects in material flow and production optimisation that are strongly connected and aligned with each other. 'We see 'Industry 4.0' as the next phase on the way to digitalisation and our goal is to prepare more factories for this,' explains Michael. In doing so, Continental relies on key technologies including connectivity, data analytics, AI and the subsequent new possibilities for designing human-machine interfaces, all relevant in the optimisation of supply chain management'.

Smoothly coordinating a global and complex supply chain

For most companies in the western hemisphere, a high machine utilisation is one of the most important factors, if not the most important and the reliable availability of goods is required to ensure this. However, the requirements are increasing across industries and countries. For example, among a high number of pallets the Continental plant in Regensburg receives 800 parcels per day across a truly global supply chain, up to 15% more than 5 years ago. On the flip side, it also has to deliver its products to 660 sites around the globe. The 1,500m^2 warehouse was already designed efficiently before the project and the actual warehouse was preceded by an 800 square metre goods receiving area. The goods were first unloaded, accepted, booked and finally stored in pallets or boxes in the warehouse.

Mara Siewert Project Manager and Innovation Manager SCM at Continental Automotive said, 'The focus of the project with Panasonic was on preparing the booking as it was not efficient. The deliveries often arrive on mixed pallets. Under certain circumstances, there are up to 10 individual goods from different manufacturers on one pallet and the shipment from one manufacturer is often spread over several mixed pallets' she explains. Before booking in the warehouse management system, all shipments that belong to a single order must be found. This process was losing crucially valuable time. The aim of the project with Panasonic was to shorten the time between the goods receipt and booking so that goods were available for production more quickly. After booking the parts, the ERP system shows whether materials are out of stock.

Mara Siewert- Specialist SCM Operations & Material Flow Planning at Continental Automotive

Michael Schwarz- Head of Industry 4.0 and SCM Operations at Continental Automotive

A priority status is shown in the SAP Warehouse Management System which is visible even before booking, with the intralogistics adjusted accordingly. The search times for missing parts of a shipment are one of the key performance indicators and a relevant parameter for Mara Siewert and her colleagues.

Cooperation to achieve results.

Continental's attention was drawn to the Panasonic offer at the Cemat 2018 trade fair, which was followed by a visit to the showroom in Wiesbaden. 'The engineers were open, asked many questions and did not simply try to make a sale but instead developed a customised solution for us,' says Mara Siewert. The go-ahead for the pilot took place in October 2019 and the installation, plant processes integration and connection to the inventory control system took 14 weeks'.

'Panasonic responded quickly to our requirements. The image processing software was optimised directly according to our specifications so that we have now achieved a read rate of 99.6%' comments Mara. This means that the system processes 300 parcels in 20 minutes, or 15 parcels per minute - almost regardless of placement, font size, font, or possible previous damage'. Continental has been following a consistent Lean Management philosophy for years, which complements the Kaizen or Gemba Process Innovation approach from Panasonic and the results speak for themselves. 'Our colleagues in goods receiving see a potential to no longer search for single articles and therefore eliminate search times completely.

Panasonic impressed us with their expertise and attitude. We share the same mindset when it comes to finding innovations that actually offer a business a technical advantage,' says Mara. In May 2020, Panasonic was awarded the contract in a global tender process for the roll-out of the technology within Continental.

The solution

Panasonic delivered a turnkey system combining two technologies. On one side image recognition, specifically, object recognition, and on the other side, projection mapping. The central element is a conveyor belt on which two operators can simultaneously place goods packages when they have been unloaded from the truck. The parcels are loaded onto the 7-metre-long conveyor belt where the Visual Sort Assist solution scans the barcodes and projects the suppliers' name and priority onto the parcels, which are transported over the belt at 0.8 metres per second. Conception, engineering, installation and commissioning were carried out by Panasonic, using some products from third parties. This was preceded by a thorough analysis of the processes. Panasonic monitored and evaluated the material flow, the data streams and the manual working process over six weeks with a team of experts from Europe and Japan consisting of business analysts, system engineers and software specialists. During the course of the project, central key technologies such as image processing software were developed further in collaboration with the customer. The search times have now been eliminated by 40% - and will even be reduced by 90% with the next update of the Warehouse Management Software.