

TRCZ, s. r. o.

Logistics execution system DCI+



TRCZ, s.r.o. is a subsidiary of the Japanese Tokai Rika, one of the top fifty automotive suppliers in the world. The plant built near Lovosice, Czech Republic in 2003 is one of two Tokai Rika manufacturing plants in Europe. It produces advanced automotive components including seatbelt pretension systems, position sensors, and multi-function switches. In 2006, TRCZ expects to produce and deliver more than 3.5 billion CZK of components to customers such as Toyota, Ford, Volvo, Nissan, Suzuki and Opel. The plant employs more than 1,200 people.

BUSINESS OBJECTIVES

Logistics in the TRCZ production process are based on TPS (Toyota Production System) management principles. The fundamental idea of TPS is to keep a continuous material flow within a business while enabling production to respond flexibly to changed customer requirements. Lean manufacturing management principles enable reducing inventory levels to the minimum necessary amount with the aid of visual (kanban) and physical (chute conveyors) systems.

Despite the unquestionable advantages of the time-tested visual and physical management methods, today's modern car manufacturing cannot do without effective support from information technology. For this reason, Tokai Rika delivered the Glovia ERP business system to its TRCZ plant in Lovosice. However, this system was not completely prepared to meet a number of essential requirements for system functionality in automotive manufacturing. To complete the system, TRCZ and Aimtec prepared an analysis of needs with the primary goal of establishing a comprehensive integrated information system that could ensure error-free operation of the company within the automotive sector requirements. The priority was to build a system to support electronic EDI communication, shipping processes and to ensure material flow tracking throughout the whole production cycle. A second, no less important goal was to ensure smooth material flow from suppliers through warehouses, the production process, dispatch, and on to customers.

SOLUTION

The project to implement an integrated information system in TRCZ was divided into several stages. First, it was necessary to put into operation an EDI data interchange with customers and to create a system environment that enabled processing of call-offs and goods dispatch preparation according to individual customer requirements. For this purpose, the DCI+ solution together with the EDI system "ACTIS Integration Manager" were used. Thanks to this system, TRCZ receives call-offs in EDIFACT, Odette and VDA formats, compares new call-offs against call-offs received earlier, and provides information about the status of their fulfilment. Thanks to the DCI+ system, shipping clerks have significantly less work to prepare supplier documentation, because the system incorporates default shipment processes that meet requirements from customers such as Toyota, Ford, PSA, Nissan for automated label and delivery note printing that matches deliveries and specific customers and shipment notifications via EDI. With the assistance of DCI+, deliveries are also checked physically for correctness. Introducing the DCI+ system primarily has a qualitative impact on customer relations. But on the other hand, increasing the effectiveness of supplier logistics processes promises significant economic savings.

TRCZ has two groups of suppliers. The majority of materials and parts are purchased from local companies. However, significant amounts of inputs are imported from the parent company in Japan. Although both groups require a different approach, it was desirable that the system support for each be realised by one solution. In the case of local suppliers, TRCZ decided to extend the pull principles driven by material consumption in production also to the management of deliveries to the plant. The method of ordering, based on sending long-term demand forecasts to suppliers and subsequent specification of requirements by call-offs for daily to weekly deliveries, had proved inflexible. Suppliers did not manage to respond to changes in timely manner, which led to both excessive levels of stock in the plant, and an increased risk of production stoppage due to stock shortage. Therefore, TRCZ opted for a radical change based on the application of just-in-time deliveries using the DCI+ solution. A significant change from this was the changeover to delivery management based on production consumption notified by an external kanban. Implementing the "milk run" shortened the frequency of plant replenishment to 1-4 hours. A significant increase in flexibility has enabled TRCZ to reduce stock volumes to one quarter of the previous levels within a very short time period. A contributing factor was the introduction of webEDI communication with suppliers, a part of the DCI+ solution. In addition to receiving long-term demand forecasts (via Internet), suppliers also receive information about actual production consumption, which is then used for dispatch preparation. The system also enables printing customer labels for individual deliveries. Their use significantly simplifies the receipt process in TRCZ. Thanks to scanning of supplier bar codes, it is then possible to ensure electronic tracking of incoming materials and to meet additional OEM requirements.

Completely different problems were solved in TRCZ with regard to deliveries from Japan, where the average time period from order to material receipt is around two months. Previously, TRCZ, in cooperation with its logistics partner, had frequently discovered delivery errors after receiving the goods in the Czech Republic, and was forced to make extra orders via express air transport. The easiest way how to resolve this situation was to gain stronger control over deliveries throughout the whole logistics flow from overseas. At the moment of dispatching goods in Japan, delivery notification (ASN) is sent to Lovosice, which enables checking delivery content in the DCI+ system well in advance and hence gain enough time to resolve any crisis. Additional orders are then realised within the subsequent weekly transport. Although the TRCZ has still kept a safety stock of parts from Japan, it has managed to save a significant amount previously spent on extraordinary transport.

BENEFITS

Thanks to a consistent application of lean principles and their effective support in the DCI+ system developed by Aimtec, TRCZ has achieved outstanding benefits in both increased quality and financial savings. After TRCZ quantified the benefits, they determined that the investment in implementing EDI and logistics came back within just two months.

According to TRCZ, there are significant benefits from the introduction of the DCI+ system:

- Reduction of warehouse stock from 7.5 days to 2 days both at input and output
- Increased monthly profit by 10 million CZK
- Reduction of stock during production to 40 minutes or 1 box
- Reduction of work-in-process – immediate overview in the operation system
- Reduction of production losses from logistics point of view – DPM 0
- Reduction of non-production areas by 50%
- Workforce savings thanks to increased system effectiveness (productivity increased by 30%, new employees did not have to be hired – 8 operators for 450 workers at 53 production lines)

"During our cooperation we've found out that Aimtec is a really qualified partner for us. I think it was just the ability of the project team members to identify problems and come up with innovative solutions resulting from their long time experience which finally appeared to be the main advantage for solution concept and implementation. In addition to moving our company a huge step forward, it also gained the attention of the whole Tokai Rika."

Roman Kyncl
Production Control Manager TRCZ, s. r. o.