Technology transfer and functional software systems

Digital networking in production and logistics

The study results published in recent days by the digital association Bitkom and the Centre for European Economic Research (ZEW) are striking: when it comes to digitalisation, the most important economic trend, Germany runs the risk of getting left behind internationally.

According to the ZEW study, Germany is ranked 17th in the world—way behind other industrialised nations such as Finland, the UK and the USA. In parallel, a recent Bitkom survey has revealed that more than half (53 percent) of companies in Germany have been victims of industrial espionage, sabotage or data theft in the past two years—causing around 55 billion euro of damage to the economy each year. At the beginning of last year, the ZEW published a study indicating the close link between digitalisation and data security. In it, economists cited guaranteeing data security and protection as one of three key areas of activity to promote digitalisation.

Digital transformation

Digital transformation enables companies to network their value chains. Digital networking enables information to be exchanged between different stages of a value chain. This leads to optimised business processes and unlocks efficiency gains. However, small and medium-sized companies in particular are lagging behind when it comes to digitalisation. Only around 20 percent have embarked on digital networking of products and

services, and only around a third of companies are networking production and logistics.

Digitalisation and networking are currently the key challenges that will shape companies' future competitiveness. With this in mind, the latest study results are surprising for several reasons. "IT networking is the segment of production control and intralogistics where it is easiest to adapt the infrastructure for digitalisation and to make the evolution processes referred to as Industry 4.0 and the Internet of Things (IoT) future proof and ensure investment security", says Dr. Giovanni Prestifilippo, Managing Director of PSI Logistics GmbH.

Requirements for digitalisation

As one of the most innovative software companies in Germany, the PSI

Group focused on the requirements for digitalisation at an early stage and integrated them into its product development. For example, PSI Logistics is ISO 2700 certified for its comprehensive data protection and high security level in the development of software solutions, products and services. The tested Information Security Management System (ISMS) certifies the integrity of the data lines used—both in-house and externally—as well as the systems' network security and susceptibility to attacks.

ment of their software systems, PSI Logistics is working with Qualicision in some areas. The associated algorithms from sister company PSI FLS Fuzzy Logik Systeme GmbH support safeguarding and optimisation of process quality. One example is the adaptive order start feature in the latest release PSIwms 4.0, which enables PSIwms to automatically start or delay order processing. The objective is to achieve consistent utilisation of the resources involved, based on capacity.
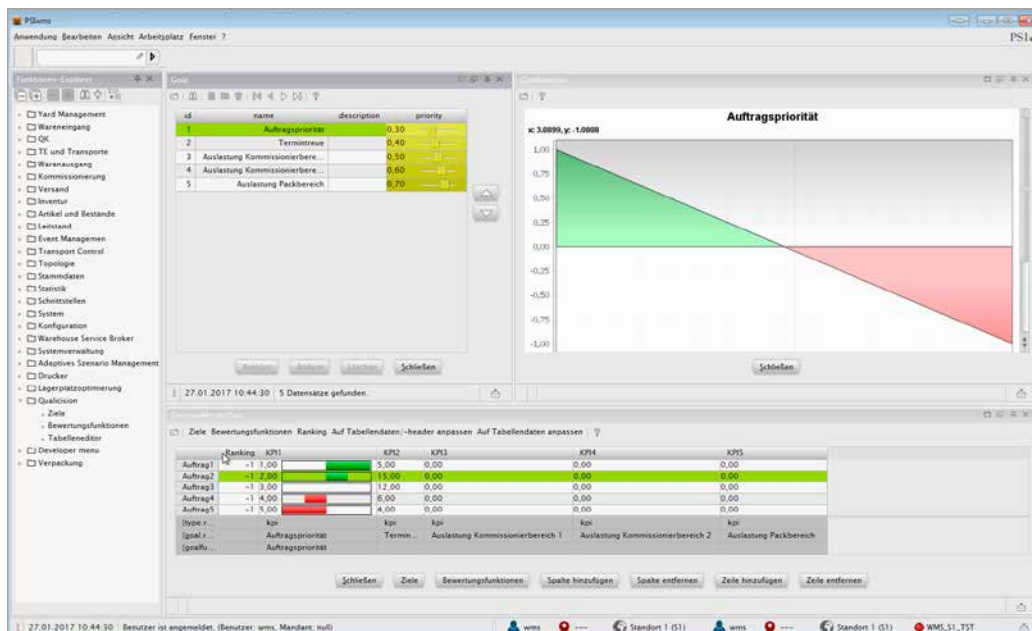
In conjunction with PSI Automotive & Industry GmbH, a specialist in processes in the automotive industry, solutions are designed for manufacturing and logistics companies. These can be integrated into the IT infrastructure as add-on solutions for the internal transport management or the dock and slot management modules in PSIwms. The result is comprehensive IT solutions that cover everything from ERP to MES and SCM through to WMS, all from a single source and with no interface problems.

An example of technology transfer within the PSI Group: Adaptive order start.

The Group's focus on the future is being recognised by the market. Last year, PSI Logistics was awarded the TOP 100 seal as one of the most innovative German SMEs. In the spring of this year, the Warehouse Management System PSIwms from the PSI Logistics Suite was named "Best Logistics Brand 2017" in the "IT for Warehouse Management" category. Moreover, incoming orders from well-known companies at PSIglobal, PSIms and PSIairport Solutions point to continuing dynamic business development and further increases in sales.

Additional benefits to customers are provided by the architecture of the standard systems and the PSI Java-based framework (PJF), a forward-looking milestone in system programming and customer-specific system design that has now been rolled out across the Group. The PJF provides subsidiaries with a common structure for conveniently linking the functions and innovative new developments in PSI standard products with one another as required. In the functional develop-

Intelligent PSI-Click-Design

Customers benefit from maximum flexibility in functional and technological system customisation, which goes way beyond the standard and additional functions in conventional systems. They can put their trust in an intelligent PSI-Click-Design based on proven standard logic, algorithms and functions. The range of systems offered by subsidiaries also enable an integrated, horizontally and vertically linked IT infrastructure to be established for industry.

Upgrade and release capability

It doesn't happen by chance. "In addition to the certified data security and innovative programming platform, the PSI Logistics Suite systems are designed for maximum future viability and emphasise the long-term investment security—thanks to their upgrade and release capability", Dr.

Prestifilippo stresses. This enables the systems' functionality to cover and incorporate the very latest technological developments at all times.

Concerted optimisation of production and logistics in a core module

What's more, they provide a basis for aligning users' business processes for Industry 4.0 and the Internet of Things (IoT). For example, the standard PSIglobal software selectively consolidates operational data for management analyses. It indicates key performance indicators for identifying potential improvements. PSI

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>
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> Managing Director
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Logistics was one of the first software companies to use this as a basis for developing functions and algorithms for combined analysis and concerted optimisation of production and logistics, and to pool them in a new core module. The module is part of the standard PSIglobal package, but can also be incorporated into all the other systems in the PSI Logistics Suite. Reference projects show that users have access to additional cost-reduction potential in the double-digit percentage range depending on sector, size and structures.

PSIwms Warehouse Management System has been certified "Best Logistics Brand 2017" (3rd place) in spring.

PSIglobal as a central data platform and meta-system

PSIglobal can also read and use almost all common data formats, or format them in a suitable way for particular uses or applications. The system works with heterogeneous data without the need for any intermediate steps to harmonise it. In the context of ERP systems, PSIglobal thus meets the requirement of pre-adaptation for digitalisation. In terms of big data concepts, the software can act as a kind of central data platform and meta-system for harmonisation and analysis of poly-structured master data from different sources.

The underlying algorithms and the focus on adaptive functionality underline the position of PSI Logistics as one of the most innovative companies in the market.

The company is unlocking more growth factors through its close links with leading research institutions. "Involvement in research projects facilitates proactive development and incorporation of forward-looking functions and solutions into the standard systems from the PSI Logistics Suite", explains Dr. Prestifilippo. For example, PSI Logistics

set up the "Smart Parcel" project, in which PSI Logistics works as a member of the Smart Logistics Cluster at the RWTH Aachen Campus, in cooperation with the Centre for Connected Industry. Applications for the Internet of Things (IoT) are developed under real-world conditions in the connected demonstration factory. PSItms or PSIwms modules communicate to allow transparent tracking of packages and their status using IoT chips or iBeacons.

"IT for logistics is all about forward-looking and innovative solutions that offer users greater efficiency and competitive advantages", says Dr. Prestifilippo. "The systems in the PSI Logistics Suite, the technology transfer within the Group and the forward-looking architectural and functional design of the systems provide the market with the key instruments for digitalisation and networking."