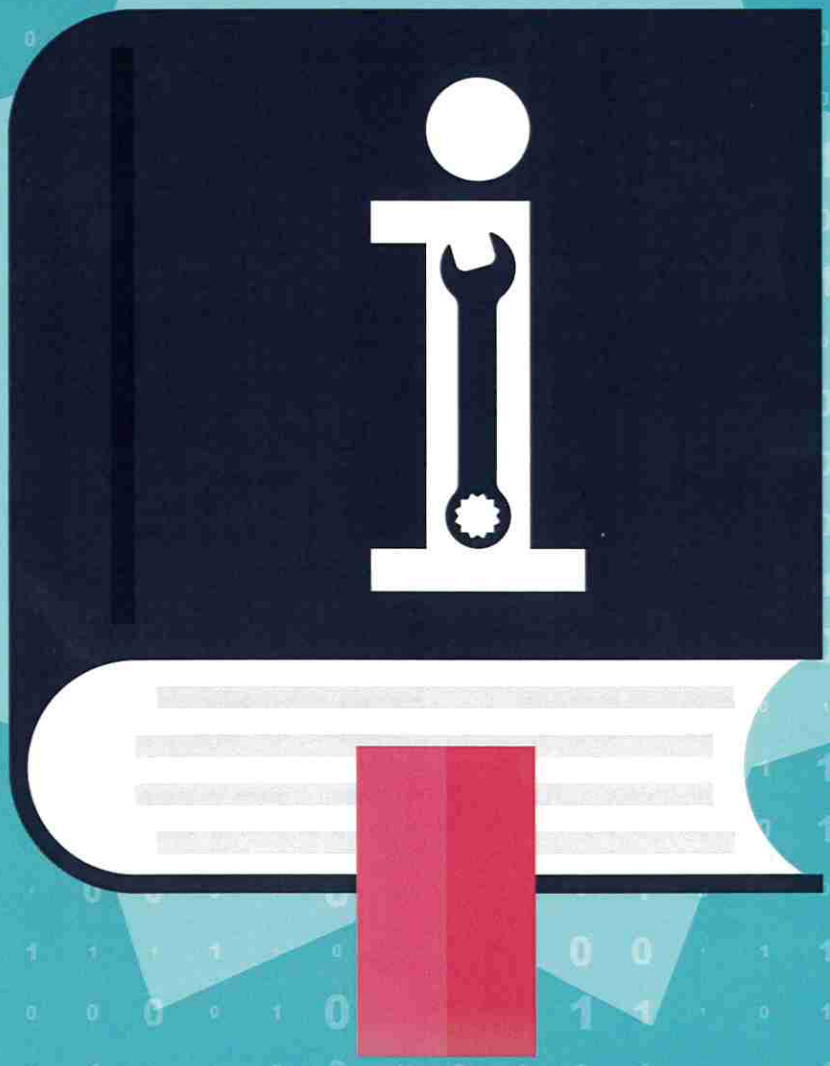
A DIGITAL TRANSFORMATION

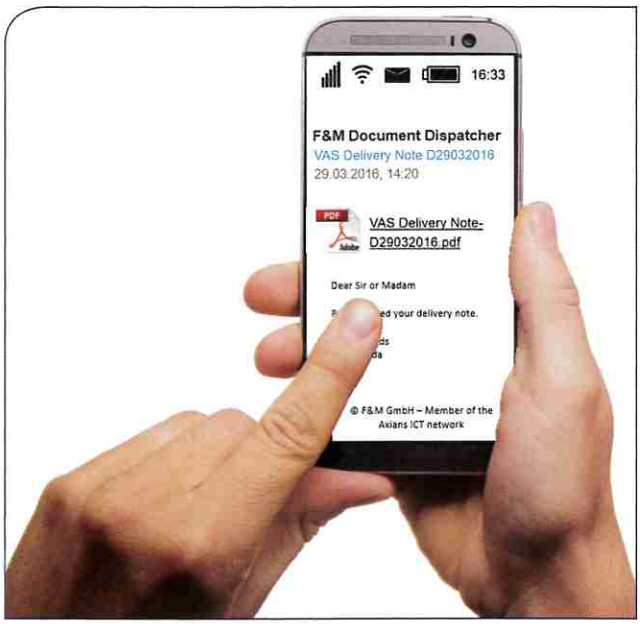
OLIVER KURTNACKER, AXIANS INDUSTRIAL APPLICATIONS & SERVICES, GERMANY, DISCUSSES THE INSTALLATION AND FIRST-OPERATION OF A FULLY AUTOMATIC DISPATCH SYSTEM.



Introduction

The core of the new logistics system is a higher and better automation of loading and shipping activities. All material flows – and the necessary logistical processes – are recorded and controlled centrally in the enterprise resource planning (ERP) system, from logging in to the plant, right up to the exit of the plant. Finally, the new IT solution is used to manage all automation processes through the plant management.

A mobile device mounted in the driver's cabin provides real-time information and allows human interactions.



F&M Document Dispatcher.

It always sounds nice and easy when people want to automate quarries, plants or other businesses, but automation is a big word. So, what does that mean and what impact does its implementation have on a plant?

This article addresses the efficiency of automation, the associated awareness of bottlenecks, how beneficial an automated dispatch system is in respect to reducing costs and effort, while accelerating processes, and the implementation of web-based technologies, such as partner portals like internet disposition (iDISPO). The discussion gives an overview of an installation, by including all the above mentioned parts, by an instance of a quintessential value adding system – based on a real example.

Challenge or blessing?

Changing to a new system takes time to create the right system requirements. In order to run a web-based instrument properly, it is not only necessary to optimise processes, but parts of the hardware must also be replaced. For instance, fibre optic cables and network cables are used to guarantee a trouble-free exchange of information between internal and external stakeholders. Parallel to this, a new shipping server, as well as active network components, are installed according to the existing infrastructure compliances. The following technical details give an inside view into what kind of technology is required to run the dispatch automation system: for one plant there is one server with five instances, a Intel-based Xeon min. 4 Cores/2.93 Ghz processor, 16 GB of RAM, a 500 GB HDD, the MS Server 2012 64 Bit OS System – and companies are always recommended to use the Microsoft SQL Server 2014 64 Bit (min. Standard edition) database. It can also be a virtual machine with remote access, available with all standard web browsers.

The introduction of a web-based shipping automation system also has some consequences. Extensive sampling test plans can be deposited in the master material, in order to continue to ensure legal compliance and quality assurance measures in the system. This also results in the reorganisation of the communication and information flows. Mobile devices, such as smartphones and tablets, are set as an information basis. All functions can be used, controlled, and accessed with the introduction of the new technology.

In order to increase efficiency and automation, it is also important to equip the loading stations with terminals and industrial PCs. 15 in. touch PCs are recommeded for use, as more data can be displayed to the driver.

With the dispatch system, technology, hardware, or an entire plant, management's goals are always pursued. As a service provider for automation systems, Axians Industrial Applications & Services has an understanding of the requirements for both parties. This means the company meets the needs of the management, but designs the user interfaces and equips the self-service terminals in such a way that the installed technology is of value to the drivers and is easy to use. In any process chain, the company's suggestion is always to equip the terminals at the loading stations in parallel with QR code readers, or to introduce RFID cards and readers. This ensures a more stable and traceable processe, particularly for internal movements or carriers with regular orders.

At best, the barriers, gates, license identifications, and safety measures are always revised and improved. Special attention is given to the registration of the license plates, with the support of webcams that record the images in the transactional data, e.g. sales order. On the one hand, better analysis can be generated for reporting. On the other hand, in some countries freight forwarders have evidence that a truck was at a dedicated location at a specific date and time.

A smarter solution

An essential part of the iDISPO are the forklift terminals – a kind of industrial tablet. These are mounted, as usual, in the forklift and the driver receives all the information about the day's orders – but this is nothing new to the

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market. The special features of the new system are the additional functions that can be actively controlled by the driver. In the past, the driver was only able to read information; today the terminal is designed so that the driver can actively enter data on the user interface. Due to repeated deviations from the original order, Axians saw the need to allow the driver to enter the quantities of items that had actaully been loaded into the system, in order to circumvent and avoid complex corrections afterwards.

A hard realisation

After the system had been running successfully for the first few weeks, Axians had the first round of feedback with the plant management and some dispatchers. The company were able to identify two important findings. Firstly, the introduction always means preparation efforts in advance, and intensive and sustainable training for the staff after the final GoLive. Secondly, due to the autonomy given to freight forwarders, suppliers, and customers, who were able to place their orders and missions without interacting with factory workers, waiting times and bottlenecks in the plant were greatly reduced. By placing the order online, the system provides an individual QR code. With the help of this code, arriving drivers can move independently through the plant and therefore experience a smooth process sequence.

Identifying the process

Placing an order online via the iDISPO allows an authorised user to access any relevant data in real time. Forwarders and customers can safely log into the system. Here, the company who provides the system can decide which areas, functions or fields the respective customer, freight forwarder or employee has access to. In order to make the user's work processes more efficient, the relevant data is made available to the user. The efficiency of the process is maintained through the use of modern web technologies; all information is centrally controlled to enable the download of data to a local computer.

Starting at the point where an external stakeholder places an order online and receives the QR Code on a print out, and continuing to the arrival at the manufacturing factory and the associated entrance weighing, the loading in the plant and the subsequent exit weighing run smoothly thanks to the centrally controlled processes. The subsequent invoice process can also be made directly available to the customer via electronic dispatch within a very short time. By confirming the exit weighing at the self-service terminal, located right next to the weighbridge, the dispatch automation system uploads the validated data to the ERP and triggers the invoicing process. These steps in the shipping process represent an enormous acceleration and increase in the effectiveness and utilisation of all capacities. A further advantage of the iDISPO is that bottlenecks are recognised by the system in a timely manner and the plant management can react early in regard to production planning and purchase.

More than expected

Both the implementation effort and the added value generated by the new system represent more than what was expected. Looking at customers and the components they use to satisfy their needs in regard to internal stakeholders, and separately to externals, a close eye should always be kept on the details of each perspective.

The preparation needed to make the system run reliably and productively depends on the specification phase and the inclusion of all relevant process owners. Although it sounds simple, having as much knowledge as possible, and keeping that knowledge accurate and up-to-date, is the most important factor when considering any logistical problems. This, in itself, presents an enormous challenge to many businesses, regardless of the industry they operate in. The main issue here is the identification of the information relevant to a business' internal process and the dissemination thereof to the necessary parties as quickly and directly as possible. Logistical processes are a particular focus of the cement and bulk goods industry. This makes it all the more important to cut through the complexities of the industry's broad array of interdependent relationships and achieve global transparency.

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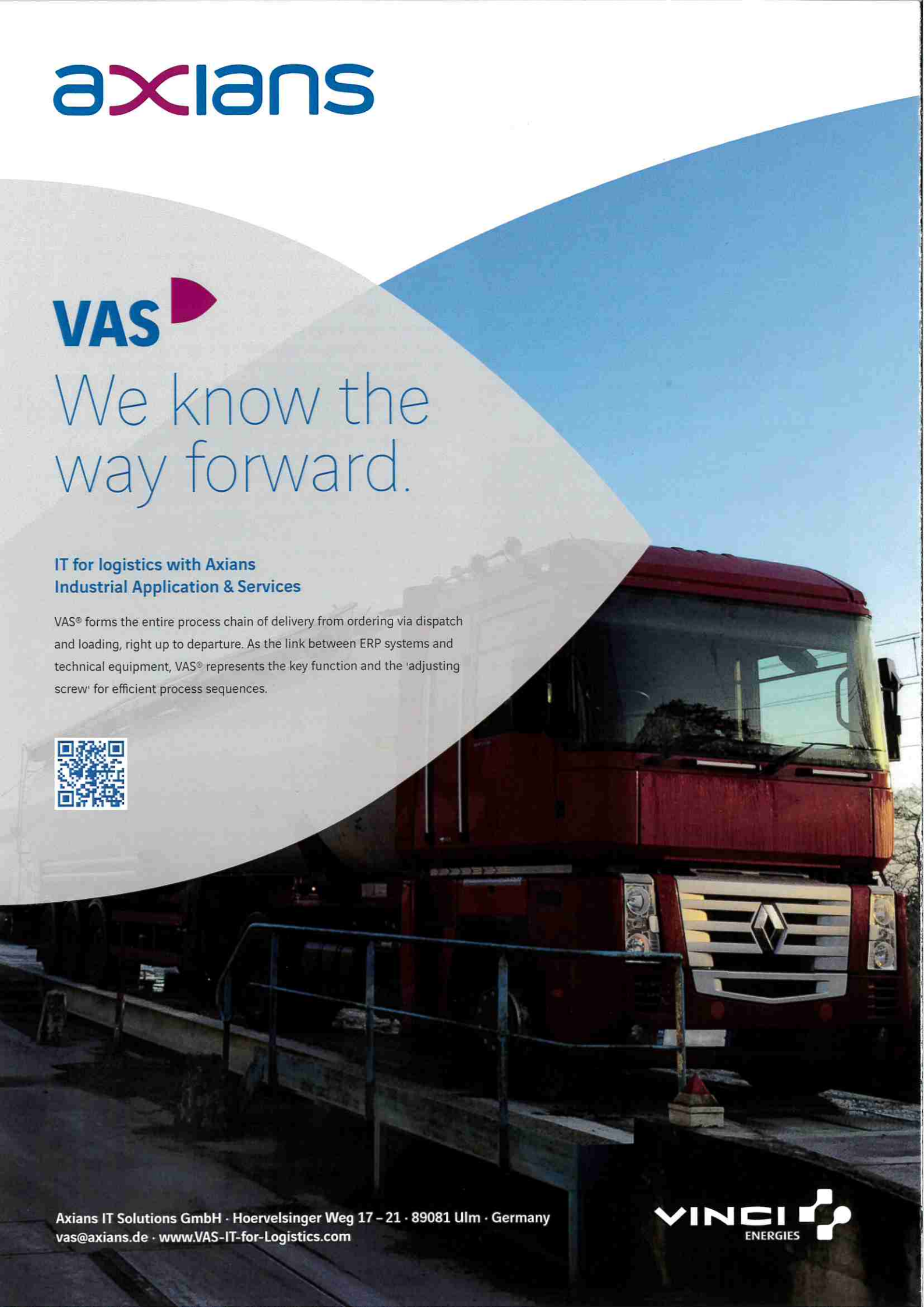

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