Integrated solutions in PSI tools incorporating Qualicision®

Optimisation in production and planning

Software systems for intelligent decision support and business process optimisation can be designed more efficiently with intersectoral Qualicision® technology, saving time and money for customers and improving stability and quality. The following example of business processes serves to illustrate the kind of applications that have been implemented in solutions and tools of the PSI Group with the help of Qualicision® technology.

PSIPENTA and F/L/S joined forces to improve the original F/L/S solution for order sequencing, resulting in the development of the PSIjis tool. PSIjis transfers relevant aspects of sequencing to the needs of automotive suppliers. Other applications for Qualicision® technology include the optimisation of the depot management tool PSItraffic from PSI Transcom, the optimisation of maintenance and troubleshooting measures as components of PSIcommand from PSI's Electrical Energy Division and the optimisation of stock transfer logistics between around 300 warehouse branches of a fashion label. Qualicision® solutions are always based on a standardised, core software library, and integration is also handled for the customer.
Dear readers,

“Everything is becoming” and “You cannot step into the same river twice”. These tenets, based on the philosophy of Heraclitus, are around two and a half thousand years old but more topical than ever before. They tell us that today is, at the very most, only similar to yesterday.

If we want to face the conditions of today, we need to consider and adjust our attitudes — even those that were still valid only yesterday. Day in, day out. Otherwise, we will inevitably be overtaken by “what is becoming” every day. “Dynamic business process optimisation” is how we put it in today’s language — and it is a simple necessity rather than a heroic feat to be accomplished.

For the past four years, customers of the PSI Group have been able to dynamically optimise business processes and adapt the software on which they are based with the support of Qualicision® technology. This technology is used successfully in many business segments and in an increasing number of PSI software tools.

This edition looks at how Qualicision® helps to dynamically optimise processes and at the PSI solutions into which it is currently integrated. Qualicision® covers a broad spectrum of process optimisations, ranging from production processes to maintenance and the movement of goods. The fact that the software is compatible with PSI software tools is a great benefit for PSI customers.

Other PSI solutions described in this edition also stem from our continuous process optimisation mentality — including solutions from the field of ERP, the metal industry and logistics.

I hope you will enjoy an interesting and inspiring read.

Regards,

Dr. Rudolf Felix
Managing Director,
F/L/S Fuzzy Logik Systeme GmbH,
a PSI Group company
Stable production sequencing in automotive production despite the dynamic variety of orders

Production and logistics processes in the automotive industry need to be designed efficiently to ensure the shortest possible throughput and delivery times. One key characteristic of the car market is that customers usually want to customise the configuration of their vehicle and take possession of it as soon as possible. The diversity of car configuration variants is therefore enormous. Generally speaking, no more than two to three identical vehicles will leave the plant each year.

The consequence for vehicle production schedule planning and logistics is that the actual configuration of each vehicle is not known until shortly before production begins. This means that daily planning, internal scheduling and supplier co-ordination need to be harmonised and, where necessary, retrospectively optimised during assembly.

Schedulers need little more than 30 minutes to complete a daily plan. Real-time optimisation has to occur in the cycle. This efficiency has only become possible by dynamically adapting the human method of weighing up decisions and incorporating it in the Qualicision® logic. The logic of the Qualicision® software acts in a human way but is much more capable of handling the variety of process data.

Optimisation of Just-in-Sequence production for suppliers

Automotive manufacturers (OEMs) are outsourcing increasingly large sections of their assembly process to suppliers. Within the added-value chain, apart from final assembly, they often only focus on the production of components, which are particularly important in differentiating their brand. The increased dynamics resulting from time and flexibility demands therefore also affect suppliers in the same way. PSIPENTA and F/L/S have developed the PSIJIS software tool on the basis of Qualicision® technology with PSIPENTA industry expertise know-how to optimise the interface between OEMs and suppliers and to support the latter in particular.

Just-in-Sequence PSIJIS is designed specifically for these conditions and supports highly automated, sequence-optimised and sequence-synchronous production from supplier to car manufacturer. PSIJIS is designed to function as a standard system and has a standardised interface to an Enterprise Resource Planning (ERP) system, for instance PSI-penta.
Balanced process dynamics in the bus depot guarantees optimum depot management system (DMS)

The DMS controls all internal processes at bus and tram depots. Automatic parking place scheduling is an integral component of the DMS. Vehicles must be parked in spaces and halls in such a way that they can exit the following morning without other vehicles having to be moved out of the way. Processes need to be brought into optimum alignment, from monitoring arrivals and departures in order to ascertain whether the driver has left in good time right through to parking space management and information for the workshop concerning pending repairs. Qualicision®-based optimisation differentiates between optimisation criteria that demand strict compliance and qualitative criteria. Strict criteria place demands on the result of optimisation and are usually derived from the actual spatial or topological conditions of the depot and its parking spaces. Qualitative criteria relate to the demands placed on the efficiency of the business process. For instance, filling all lanes in the depot evenly with vehicles, or bringing the mid-term and long-term mileage of vehicles into alignment. Qualitative criteria can be in conflict with one another to a varying degree but can also be compatible. The relation between qualitative criteria is always dependent on the base data relating to the situation of the depot and its vehicles and is therefore dynamic. PSItraffic, incorporating Qualicision®-based depot management, is in operation in numerous depots at more than seven locations in Germany. The system will soon be transferred to internal traffic at logistics providers and production enterprises.
Workforce management for optimum planning and control of maintenance work

The efficient operation of spatially decentralised infrastructures such as energy supply networks is a demanding task of high economic significance. Value-preserving maintenance work on the network infrastructure that guarantees the security of supply has to be carried out within the scope of scheduled measures. The planning and operative scheduling of maintenance and construction work, as well as the management of troubleshooting activities such as confirming and processing faults, is a continuous optimisation process of decisive economic significance to the dynamics of business operations. Integrated Qualicision® optimisation enables the software tool PSICommand to control these complexities and map the entire spectrum of optimisation targets. As an example: the optimisation was able to equalise the distribution of workload among service employees. Allocating work tasks to workforce units created a balance between contradictory optimisation objectives, for instance allocation on the basis of minimum qualification profiles, reduction of external labour ratios and aiming to achieve as much task variety as possible. The solution is already in use, providing systematic support to dispatchers via a suitable user interface.

Needs-based goods relocation between warehouses

Under the slogan "Fashion that suits me", the Ulla Popken group of companies sells ladies' outerwear and presents its customers with changing collections each month. The company sells its fashion range in over 300 branches, by mail order and online, with the help of selected European and international franchise partners, and also with shop-in-shop partners who are supplied with items in various sizes from the central warehouse.

The demand for goods from the seasonal range varies in different branches due to, for example, regional conditions. The dynamics of demand give rise to differently structured stocks of items and sizes in the individual branches. With the aim of harmonising the stocks in the branches with the demand structure, employees at head office or regional sales directors regularly decide which branches send which item quantities to other branches and when. Head office defines the target and minimum stock levels for each size of an article to be kept available at each branch. The sales reports are constantly assessed to ascertain at which branches and for which items the stock levels need to be adjusted, and how the stock transfers are to be executed. Further supplies can be obtained from the central warehouse only as long as there is sufficient stock available. Stock relocations between branches are then generated dynamically. Qualicision®-based optimisation now supports the former manual method of determining relocation requirements.

Deployment management system for energy network maintenance and troubleshooting using PSICommand with integrated Qualicision® optimisation guarantees the best possible technical and economical task synchronisation.

Source: Thinkstock

Information

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User report: PSIPENTA partner PiSA sales offers a system for efficient customer management

GEMÜ banks on the PiSA sales CRM on a global scale

GEMÜ Gebr. Müller Apparatebau GmbH & Co. KG, a global leader in the production of valve, measurement and control technology, has used the CRM solution PiSA sales in marketing and sales since April 2011. The system enables all employees involved in customer processes to interact with smooth efficiency.

As an independent family-owned business with a global focus, GEMÜ has made a name for itself as a provider of innovative products and customer-specific solutions for process media control since 1964 and is the established market leader in various key areas. The company maintains six production facilities in Germany, Switzerland, China, Brazil, France and the USA. Products are designed and developed at headquarters in Ingelfingen, where many of them are also manufactured and assembled. An intelligent building block system and harmonised automation components make it possible to combine predefined standard products and customer-specific solutions to create more than 400,000 product variations. Worldwide sales are co-ordinated by head office in cooperation with 20 subsidiaries. The group of companies is represented in more than 50 markets throughout the world by a close-knit dealer network.

Initial situation

The company wanted to replace the former CRM system and migrate all the data saved there to a new CRM solution. The new CRM was to provide specific functions to support every department involved in customer processes. The objective of the project, in addition to achieving more efficiency, greater transparency and an overall improvement in process quality, was to expand the acquisition of new customers and perfect the process of addressing existing customers. The consequences of these objectives for the CRM project included:

- Centralised contact management across all business partners including a check for duplicates
- Deep integration of the global Outlook/Exchange systems
- Support of the multi-site concept of the corporate ERP solution, PSIpenta
- Mobile availability of CRM data on notebooks and smartphones

Both content and interfaces have to be multilingual as GEMÜ wants to use the new CRM system in 20 subsidiaries around the world. The required languages were already available in PiSA sales Standard, and the future addition of further languages is already provided for thanks to UNICODE capability.

Heiko Schmitt
Project Manager CRM, GEMÜ

"I appreciate the reliable and co-operative partnership that we enjoy with our CRM provider. Having direct access to the development department is of significant value to GEMÜ."

- Activity management to optimise interdepartmental co-operation
- Optimum interaction between back-office and front-office
- Efficient sales management and traceability of current tenders
- Evaluation and analysis of customer contacts directly within the CRM
- Simple user interfaces adapted to the workflow to achieve broad user acceptance
- Availability of documents across facilities via an efficient document management system

A further key factor in favour of the PiSA sales CRM was the high interface competence of the CRM provider with regard to PSIpenta, the ERP system in use at GEMÜ. This expertise is the result of a close, strategic partnership between PiSA sales GmbH and PSIPENTA Software Systems GmbH.

Project progression and solutions

An intensive evaluation phase was followed by a test installation...
implemented by PiSA sales GmbH. In parallel, GEMÜ project managers visited PiSA sales users to become acquainted with the practical use of the system. The basic decisions for the introduction phase were made during the subsequent workshop phase. These decisions concerned the subsequent design of the link to PSI penta, the design of access administration and the adaptation of interfaces and functions to GEMÜ-specific requirements. The CRM was introduced at GEMÜ step by step. The software rollout started at the subsidiary in France, which was followed by Switzerland. The experiences of these subsidiaries were incorporated into the implementation project at the site in Germany.

This tried and tested approach enabled GEMÜ to gather valuable information that was of benefit to subsequent phases of the project. The goal is to have all of the subsidiaries in Europe, America and Asia working with the PiSA sales CRM by the time the international rollout is complete.

**Realised successes**

The replacement of the old system was implemented quickly and smoothly in close collaboration with PiSA sales GmbH. Introducing a standardised CRM infrastructure to each subsidiary has harmonised how customer-related data and processes are handled. This has led to a number of significant improvements, including shared customer involvement across subsidiaries.

Existing customer and market data is now structured, enabling enabled target group segments to be redefined and a more differentiated approach to be adopted. The result is a more targeted and efficient use of capacities at each site and in the field.

The consistent integration of the CRM system in business processes has resulted in a system that is "lived by" and not just "kept alive". Quick and concise access to sales-relevant information from the PSI penta ERP is integrated in the system as a central information point for each customer. In addition to online access to CRM data via notebook, field staff also make use of the mobile PiSA sales solution via iPhone and Blackberry smartphones. Documents, activity histories and sales transactions are available in addition to customer contact details at any time and at any location.

The marketing department, for instance, uses the PiSA sales CRM for mailings, targeted market cultivation and for planning and following up on events. It is now possible to accurately select contact partners and rely on duplicate-free distribution lists thanks to the comprehensive information on prospective and existing customers stored in the system.

On a technical note, the standard ERP link was extended within the scope of the GEMÜ project by adding the multi-site functionality provided by PSI penta ERP. Integrating the system in GEMÜ's localised IT structure was another significant technical challenge. This entailed the integration of various groupware servers in each subsidiary.

The significant increase in efficiency and transparency in all of the processes involved and the productive collaboration between the partners are promising indicators for the success of the overall project.

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Savings potential through automated personnel planning

Automated, software-aided workforce management is a strategic instrument for greater competitive capacity. Significant savings potential is achievable in particular in the personnel-intensive areas of logistics, such as the example of the DPD plant in Villingen-Schwenningen shows. The courier service provider turns over more than 70,000 packages every day at its Swabian depot. That equates to processing 145 delivery vehicles for regional deliveries and 30 long-distance road trains on a daily basis. Around 150 employees work a two-shift system at 45 different workplaces with different requirements and flexible working hours at the DPD depot. Achieving the best possible scheduling and allocation is a complex task that requires an efficient workforce management process.

"Until now we used Excel to schedule personnel deployment", says Günter Pfaff, manager of the DPD depot. "The result was a time-intensive planning process that often delivered an inaccurate outcome."

Radical change with PSIwms

Pfaff made a radical change to these conditions at the beginning of 2011 by introducing an IT solution that is now directly integrated in the resource management function of the Warehouse Management System PSIwms from PSI Logistics. It offers Pfaff a strategic workforce management function and support for calculating employee requirements and allocating them to specific workstations. One clever feature is a special planning algorithm that enables automated planning and combines it with the experience of shift managers, thus making the software capable of producing forecasts. And the result: "The software for workforce management enables us to map our specific processes and requirements in IT and to allocate our employees accordingly to best effect. In this way we were able to achieve savings of between 120,000 and 150,000 euro during the first year alone whilst maintaining the same output with the same employees."

Today, IT systems that integrate all relevant process and person-related data form the basis for comprehensive,
Objective and economic workforce management in alignment with business requirements. PSI Logistics has integrated a corresponding function module for dynamic workforce planning in the resource management function of PSI WMS. The new software offers users extensive automation of personnel planning processes — for both short-term deployment in day-to-day business and long-term, requirements-based, strategic budget and capacity planning. The software therefore comprises methods and functions for efficient personnel requirement, deployment, adjustment and cost planning as well as for personnel controlling. Reference applications such as at DPD demonstrate that the many optimisations of automated workforce management can achieve average savings in excess of 100 euro per employee and month. Work teams consisting of internal and external employees, temporary staff and contract workers need to be put together based on the tasks in hand, especially in situations that are influenced by seasonal and task-related fluctuations. Furthermore, intelligent planning also considers allocation to workstations that enable employees to make optimum use of their experience, abilities and other qualifications. This is easily achieved with the scope of workforce management in PSI WMS.

The software at the DPD depot uses the anticipated quantity of packages to calculate the daily distribution of the workload for the entire depot based on a 15-minute timeframe. In a subsequent step the software calculates quantitative personnel planning — when specific work areas at the depot will be in demand and how many employees are needed to man them. This calculation is then used as a basis for qualitative workforce management.

Increased competitive capacity

The software contains an algorithm developed specifically for this process that automatically plans workforce requirements. It prioritises those requirements, verifies the availability of staff and takes their qualifications into consideration alongside the balance of flexitime and holiday accounts. Additionally, exact detail overviews of warehouse layout, process times and work order allocation make it easier for the scheduler to allocate staff to workstations. In this manner the personnel department at the DPD depot co-ordinates daily, weekly, holiday and shiftwork planning activities for business operations and short-term rescheduling. Arbitrary shift and time patterns can be stored in the system to produce personalised shift plans and work rotas. Additionally, Management and Controlling at the DPD depot benefit from the prognostic functions for long-term strategic personnel planning. Optimised requirement and capacity planning is supported by functions for detailed, continuous cost and ratio analysis and an option to play through different shift scenarios automatically. The system's data enables the identification of bottlenecks in the process chain and the timely appointment of additional staff. The proactive, strategic workforce management of PSI Logistics increases corporate competitive capacity, thus preventing incorrect decisions and avoiding unnecessary costs. "Thanks to the workforce management software we are in a position to efficiently manage the fluctuating number of packages, significantly reduce the complexity of personnel planning and to design a much more efficient planning process", says Pfaff in summary. "DPD intends to use the PSI Logistics software to plan personnel deployment in other depots."

Günter Pfaff
Manager, DPD depot Villingen-Schwenningen

"Thanks to the [...] workforce management software we were able to achieve savings of between 120,000 and 150,000 euro during the first year alone whilst maintaining the same output with the same employees."

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User report: Maschinenfabrik Gerd Mosca AG decides once again in favour of PSI\textit{penta}

Successful migration to PSI\textit{penta} 8.1

Every company will at some stage consider whether modernising its IT landscape would increase its success; whether a new ERP system, for instance, would enhance process transparency or reduce processing time and thereby increase efficiency. And so the search begins — and the conclusion after intensive market research is: Our new ERP system will be the old one.

Mosca has worked with the former version 3.01 of PSI\textit{penta} since 1998, although the system was not implemented as a company-wide ERP system with all of the available functions. There was no capacity planning or bill explosion, but merely functions for inventory management, purchasing and, to a lesser degree, order administration. Many adjustments were made to create interfaces with external modules for which the documentation from previous years was unavailable. Things came to a head in 2010: as authorised signatory Peter Kühnel, Head of Procurement, Logistics and IT, remembers: “It couldn’t continue like this. We had thousands of interfaces and nobody knew what was ticking in the background. We had to make a cut.”

\textbf{Smooth migration}

And so a decision was made to search the market for modern, efficient solutions. Mosca AG is a typical mechanical engineering company with a manufacturing capacity ranging from small series to plant construction. The firm also manufactures special designs and synthetic tape. All of this was to be mapped in a single system. Kühnel summarises as follows: “We worked through the who’s who of ERP and arrived at the conclusion that PSI\textit{penta} was once again the right choice for our requirements and cost volume.” All the more so as the mature multi-site functionality to be installed accommodated the management’s plans to map various business areas such as pallet strapping and freight securement, packages and publishing products and the production of synthetic tape as independent plants in the ERP system alongside external plants such as the one in Malaysia.

PSI\textit{penta} version 8.1 with modules for order management, variant management, project management, SDC/work time logging, Sales Manager, Multisite, Varial financial accounting with personnel and wages accounting and the iCenter from Intex has been up and running since the summer of 2011. The iCenter takes care of digital invoice checking and, as of August 2012, the digital archiving of all documents.

The migration process was smooth and trouble-free as the company’s hardware was modernised alongside software installation and fully converted to a Windows server configuration. The previously installed system was discarded along with the outdated hardware and version 8.1 was installed on the new configuration with no need for adjustments or modifications bar the migration of data.
Success factor Multisite

Mosca achieved its most impressive successes through the use of Multisite. One of the main objectives was to achieve a much faster order processing time as it has an impact on the entire process chain and value flow. This is achieved to a large extent by the fact that the sales department no longer passes the entire incoming order to production but rather uses Multisite to distribute the customer order documentation to the relevant divisions at the start of the process. They are then able to concentrate on their specific tasks. This also creates a much higher level of transparency, in particular with regard to cost accounting.

The Sales Manager module and a configurator that allows employees to freely configure an order bring additional advantages. They use specific logics and plausibility checks to verify an order is configurable. If everything is OK with a typical incoming order then the related tasks are assigned to the relevant departments. If an incoming order is atypical and cannot be mapped in the configurator, it is subject to technical and cost-based verification pending a decision on the further course of action to be made by sales management. The Head of IT assumes savings of 60% in administrative mean lead time alone. The new "old" ERP in use at Mosca AG has many advantages. Automatic posting contributes significantly towards error minimisation. The significant administrative savings are enhanced further still as there is no longer any need for the huge amounts of paper that were previously used to convey information. The increase in continuity is matched by enhanced transparency. Information on the whereabouts of a product and which costs are created and where is available at the touch of a button. Adherence to delivery schedules has improved and will soon culminate in compliance with specified delivery times down to the exact day. Management receives figures from the source of creation and has a better and more up to date view of the company’s position. It is no longer necessary to select specific data, which in turn increases the capacity to act. Kühnel is satisfied: "It was worthwhile to stick with PSIpenta. We have already achieved some of our objectives and are a lot closer to achieving the others."

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Maschinenfabrik Gerd Mosca AG

Mosca leads in quality and technology as a systems provider and as a developer and manufacturer of high-quality strapping machines, straps and goods securement systems for professional and industrial applications.

The product portfolio ranges from small automated machines to large pallet packing presses. The programme is rounded off by a range of services in the segments of engineering, leasing, assembly and commissioning, technical training, service and maintenance and the supply of replacement parts.

Head office: Waldbrunn (Odenwald)
Established: 1966
Employees: 800 worldwide
Turnover: EUR 117 million (2011)
Customers: Companies involved in paper processing, mail order and logistics, building materials and ceramics, food and drinks industry

Global locations
Europe: Germany, Finland, Great Britain, Poland, Spain
America: Canada, Mexico, USA
Asia: China, Indonesia, Malaysia, Singapore
Oceania: Australia

Software in use:
• Order management
• Variant management
• Project management
• Finite capacity scheduling
• Cockpit
• Shop-floor data collection
• Machine data collection
• Personnel time management
• Financial accounting
• Digital incoming invoice verification
The production of complex steel qualities requires a high degree of process control, precise operator control as well as immediate response to changes during production. The PSI metals based SIS (Steel plant Information System) supports melt shop operators in managing and controlling the entire production process in steel making.

Three generations at a glance

Using four ASCII operator terminals and the very robust HP1000-F45 RTE real-time computer system first functionalities had been installed in 1982* to support and control the complex special steel production process with mainly focusing on costs and energy saving. It comprised the charge- and alloy calculation, electrical energy management to control the energy input per basket and heat as well as the communication with the laboratory to receive online analyses results. After 10 years of successful operation the system was revamped and migrated to the DECnet Ethernet technology. That enabled to build a more integrated IT-Architecture including a direct link to SAP and the production planning system. At in total 32 workstations in the steel making plant the users were enabled to track production information as the latest inventory in scrap yard and alloy bunkers, to follow the heat tracking from scrap yard to casting as well as to control automatic acquired measured values online. Furthermore the system guided the operators by using standardized process instructions for each single process step in steel making for the first time.

In 2003 a new Level-2-automation system delivered within the commissioning of a new AOD-Converter as well as changing demands regarding quality management, process standardization, cost optimization as well as customer satisfaction and process traceability led to the decision to completely redesign the SIS. Due to the long term successful partnership between Böhler and PSI, PSI metals once again formed the basis for the 3rd generation of the SIS system. Today it forms the backbone of the entire IT-environment for steelmaking and integrates more than 30 individual lines with SAP ERP level, production planning and LIMS systems as well as basic automation and field level. More than 150 people are working with the system at more than 60 workplaces in the operator pulpits and in office workplaces in a 24x7 way.

Product configuration for 1600 steel grades

Böhler maintains over 1600 steel grade standards with their individual chemical and mechanical quality properties and over 300 steel grades and sets worldwide the benchmark in metallurgy.

* In 1982 the former BFI-BT, based in Düsseldorf and merged into PSI group in 1999, was contracted with this order.
properties. According to the technological manufacturing requirements of the steel grades, Process instructions are defined to exactly model the technological structure of the complete production process spanning all facilities. They summarize all production rules and information to be considered when producing a particular heat.

Modeling and structuring the production process using rule based and configurable process instructions resulted in significantly improvements of the knowledge base to automatically guide the operators. Harmonizing the production process, independent from the staff members and their individual experience, led to a more stable, reproducible process with less failure and improved products quality.

Optimized material input with reduced costs

Right from the beginning Böhler focused on the optimization of material input for scrap and alloys. Today it is the most important and beneficial module and a powerful instrument for cost savings while producing this huge amount of various and very complex steel grades.

Improved algorithms in the 3rd generation consider more influencing parameters and different targets depending on material availability, subsequent production routes and treatment steps and provide the optimal combination of these parameters. Heat production costs could be saved directly.

Heat sequences always up-to-date

The production preparation department creates a weekly master plan for heat demand based on customer orders and transmits this heat demand with daily updates to the SIS. Based on these heat demands the detailed heat scheduling and the elaboration of individual heat sequences are performed by the planner using the SIS for all facilities in steelmaking, special steelmaking and powder technology plant. The heat sequences are updated on a daily basis considering the current and forecasted facility availability, ladle and mould availability as well as chemical and technical restrictions of the heat follow up in one facility. The planner can create optimized heat sequences while minimizing violations of restrictions using rule based algorithms.

Unified plant monitoring

The production tracking component manages the heat status and progress during production from the feedstock material to the finished product through all facilities. All production, quality and cost relevant data for each heat are tracked; either automatically reported by Level-1 or Level-2 automation systems or manually entered by the operator. From these data automatically the start and stop of process steps is derived and the recalculation of the process instructions is triggered. Providing operator instructions like “take sample” the operator will be explicitly guided through the subsequent process steps. The Grafical user interfaces (GUI) and the operating philosophy for all operator screens are similar so that the staff can easily exchange their workplaces. The GUIs can easily be adapted to the needs of a special workplace or even role of an operator by a data dictionary driven configuration.
Health monitoring for all lines

The equipment and ladle management includes the administration of operating resources, such as scrap baskets, steel ladles, moulds, etc., as well as facility parts, such as furnace lid, tundish, lances, etc. Equipment types and parts can be configured by the user. Status information (such as free, occupied, in repair, installed, etc.) provides a quick overview on the resources at all times. To monitor the „health status“ of a line all equipment events and states are tracked and traced on the basis of standard messages from the automation level and/or via manual operator input. The measured data provide a basis for statistical evaluations to decide whether repairs are necessary or not. A repair history shows any repair or maintenance work carried out, the time needed for repair work as well as further customer-specific data which may be necessary.

Factory model sets standards

The Factory Model forms the heart of the SIS and models all objects for production planning, execution and quality control in a standardized manner. The integrated version control provides a change management especially for critical master data like steel grades, working plans, material data and process instructions. The Factory Model is an open data base model which can easily be adapted and enhanced by Böhler itself.

Using the factory model the level of automation could be increased incremental by a further integration of Level-1 and Level-2 systems using configurable unified standard messages. New automation systems or even new facilities can easily be “plugged in” by configuration and in most cases without further programming.

Detailed documentation of production

The Production Data Base serves as online information platform to keep all data for approximately one year. The Archive Data Base runs in parallel and keeps a copy of all data to serve as a long-term archive. The archive provides the input for further process improvements and research developments and serves as a preventive maintenance of facilities and equipment. An archiving process automatically transfers data into the archive and removes old data from the production data base. This method keeps the performance of the productive system in a good shape and allows time and performance consuming evaluations over a huge range of data.

The introduction of the Factory Model with the possibility to store and archive nearly unlimited amounts of data enables easier evaluation and research methods to better analyze and rate influencing parameters for quality and product improvement.

Ludwig Höbenreich
IT Melt Shop, Böhler Edelstahl

"Harmonizing the production process, independent from the staff members and their individual experience, led to a more stable, reproducible process with less failure and improved products quality."
Optimization of heat sequences showing restriction violations

Source: Böhler Edelstahl

Pioneer within the voestalpine group

Since 30 years Böhler continuously invests in improving and enhancing the computer-aided melt shop automation. Based on the historical grown know-how of Böhler and standards like PSI metals the SIS successfully faces the complex tasks in special steel making being a powerful production management system.

The experiences made by Böhler served also as a pioneer for further PSI metals based steelmaking systems in the voestalpine group. The rule based process instructions formed the fundament for the CAQC-SM system in the LD-Steelmaking plant in Linz in 2006 and the implementation of the so-called MIS at Villares Metals S.A. in Sumare, Brazil in 2009.

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This solution was presented in the form of a speech at the 10th European Electric Steelmaking Conference (25/09–28/09/2012) in Graz, Austria. PSI was present as a sponsor and exhibitor.
Products & Solutions: logistics software from PSI supports agility

Flexible change integration

Logistics is characterised by dynamic processes. Competitive survival demands a great deal of flexibility. It is essential to define precise target situations and detect deviations in good time to enable fast reactions or the timely adjustment of business processes to new conditions. These corporate abilities are summarised under the term "agility".

They are also the same characteristics of modern software systems as covered by the product spectrum of PSI Logistics. The specialist for logistical software provides forecasting software and IT systems with functions and tools for the efficient, cost-cutting and resource-saving design of logistical networks and processes that enable companies to maintain their agility at an optimum level.

The products PSI tms and PSI wms, for instance, form the basis for resource-optimised operations scheduling; PSIglobal provides a strategic basis for developing and expanding networks, for M&A measures or the development of new business processes.

They build on integrated analytical models used to establish the sensitivities of processes and networks and identify the main influencing variables. This approach enables prognoses to be made on process capabilities and potential calibrations. It also enables the definition of determinants that allow a rapid estimation of the stability of complex processes. Furthermore, it allows for extensive process automation at an operational level as well as with regard to collecting and evaluating specific characteristic data.

This simulatively acquired information also serves the predictive virtual quality evaluation of processes and strategic (process) planning. The changes assumed in modelled tests may, for example, affect the number and location of the sites and also the transport structures. Mathematical methods are used to integrate expected future developments, for example in quantity structures or labour costs, into the planning and therefore make forecasts about the necessary transport and storage resources.

The concept behind the system-oriented architecture and aspect oriented architecture of PSI Logistics' modular standard products is designed with complete flexibility in mind. They are easy to adapt to specific requirements and continuously changing business processes and integrate smoothly in existing infrastructures. The functional and structural variety of software systems from PSI Logistics form the basis for efficient processes, meaningful prognoses and optimum corporate agility with regard to flexibility and automation in the design and critical behaviour of business processes.

Finished in perfection by nature: adaptability. Agility is also an essential characteristic for survival in business — software tools from PSI Logistics can help.

Source: Thinkstock

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Seeing the bigger picture: PSI customer conferences

The PSI metals UserGroup offers PSI metals customers an opportunity to engage in exchange and a chance to visit the plant and attend a number of speeches by customers and PSI employees. This year, voestalpine Stahl GmbH and PSI Metals GmbH are inviting all PSI metals customers to Linz in Austria on 24 and 25 October. The first day of the event at the Steigenberger Hotel Linz will focus on current product developments concerning improved usability and functional extensions in the areas of Quality Management and Planning. The second day will focus on voestalpine and include a tour of the factory and the voestalpine World of Steel. The voestalpine World of Steel is an impressive architectural display of the limitless possibilities steel has to offer. Experience reports from SSAB and Peine Träger will round off the PSI metals UserGroup Conference.

The motto of this year’s annual IPA conference of PSIPENTA users is "Best Practice PSIPENTA — Learning From Market Leaders". PSIPENTA and the IPA Executive Board invite users to participate in the conference in Salzburg from 8 to 10 November. For a limited number of participants the event will begin with a worthwhile tour of the salt mine in Berchtesgaden. A speech with the title "The fourth industrial revolution" by Dr. Carsten Schmidt, responsible for the industrial business sector at FIR of RWTH Aachen promises to be another highlight. There will also be a preview of the PSIPenta ERP version 9 — "The PSI User Interface of the Future". At the end of the first evening we will turn our attention to sport. Extreme climber Thomas Huber, one of the well-known "Huberbuam" brothers, will build a bridge between business and high-performance sports.

Current innovations, experience reports and an intensive exchange of information on application options will be the focal points of this year’s PSI Logistics User Group (PLUG) conference to be held at the Conference Centre of the Holiday Inn Berlin Airport Hotel on 22 November 2012. In addition to current experience reports and suggestions for additional practice-oriented tools and functions in future system developments submitted by company representatives, the items on the agenda range from exclusive advance information on the new release 2.1.0 of the Warehouse Management System PSI wms to the opportunities and savings potentials realisable via automated workforce management using the resource management function of PSI wms. Furthermore, a tour of the distribution centre at Eurotape Media Services GmbH, Berlin, is also planned.

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Events: PSI Logistics and PSIPENTA are exhibiting at autumn trade fairs

IZB in Wolfsburg

PSI AG will be at the IZB in Wolfsburg from 10 to 12 October (Hall 3, Stand 401) to present its comprehensive software portfolio for managing the entire automotive supply chain. The Java-based Just-in-Sequence solution PSIjis presented in March that supports a precise sequential and synchronous supply right up to the conveyor belt is a particular focal point. PSI will present a software solution for analysis, planning and optimisation as well as for pro-active risk management in complex logistical networks in the form of PSIglobal. The event-based Next Level Kanban enabling consumption forecasts based on parts lists and tugger train optimisation is a further focal point of the exhibition.

IT & Business in Stuttgart

PSIPENTA will present a special highlight at the IT & Business in Stuttgart (Hall 3, Stand E11) from 23 to 25 October in the form of the seamless ERP-MES-PDM scenario of its customer Teamtechnik Maschinen und Anlagen GmbH. The scenario illustrates the seamless integration of product data management (PDM) incorporating order and project management and the manufacturing execution system (MES) from design phase to planning to workshop level.

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29th International Supply Chain Conference
October 17-19, 2012

New orders up 18 % to 114 million Euros

PSI with Strong Growth in the Industrial Sector in First Six Months

PSI Group increased its sales by 12 % to 85.7 million Euros in the first six months of 2012. The EBIT improved by 33 % to 5.1 million Euros, Group net result doubled to 4.1 million Euros (30 June 2011: 1.9 million Euros) as a result of tax effects. New orders increased compared to the same period last year by 18 % to 114 million Euros, the order book volume as of 30 June 2012 increased by 14 % to 142 million Euros.

Sales in Production Management (raw materials, industry, logistics) were, at 43.7 million Euros, 22 % above the value for the previous year. The EBIT was increased by 78 % to 3.0 million Euros. The metals industry business once again provided the greatest contribution to the EBIT and was awarded major international orders.

Energy Management (electricity, gas, oil, heat) was again marked by the very good development in gas and oil while the electrical energy business continued to invest strongly in the development of new functions for the requirements of the energy transition. The energy trading business invested strongly in the functions for...
the multi-commodity trading and the integration of TS Energy software for energy storage operation acquired in the first quarter. Total sales for Energy Management dropped by 3 % to 30.7 million Euros in the first six months. Despite positive one-off effects from the sale of licenses, the EBIT for the segment was, at 1.7 million Euros, considerably below the value for the previous year.

In Infrastructure Management (transportation and security), sales increased by 29 % to 11.2 million Euros. The EBIT for the business more than doubled to 1.1 million Euros. PSI Poland expanded business in the Polish market with an important major contract and once again provided a major contribution to the result.

The number of employees in the Group increased to 1.552 as of 30 June 2012, primarily in Poland and as a result of the takeover in Logistics last year. The cash flow from operating activities was, for project reasons, negative at –4.1 million Euros, liquidity decreased slightly to 25.8 million Euros.

In the third quarter PSI expects continued encumbrances in the area of control systems for distribution grids in the electrical energy business as a result of the energy transition and the continuation of the dynamic development in Production Management. PSI is investing heavily in the migration of additional business units to the new, company-wide uniform software basis for the improvement of productivity and ergonomics and has taken the next step with the beginning of the server-side rollout.

As a result of the high volume of new orders since the beginning of the year, the management is still aiming for 190 million Euros in new orders, sales of 180 million Euros and an EBIT of 13-16 million Euros for the year.

2012 EVENTS

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
<th>Website</th>
<th>PSI/PSI Pent</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/10–12/10</td>
<td>izb — Internationale Zuliefererbörse</td>
<td>Wolfsburg</td>
<td><a href="http://www.izb-online.com/">http://www.izb-online.com/</a></td>
<td>PSI Logistics, PSI Pent</td>
</tr>
<tr>
<td>17/10–18/10</td>
<td>Airline &amp; Aerospace MRO &amp; Flight Operations IT Conferences</td>
<td>Bangkok</td>
<td><a href="http://www.aircraft-commerce.com">www.aircraft-commerce.com</a></td>
<td>PSI Pent E2</td>
</tr>
<tr>
<td>1710–19/10</td>
<td>29th International Supply Chain Conference</td>
<td>InterContinental und Pullman Berlin Schweizerhof, Berlin</td>
<td><a href="http://www.bvl.de/dlk/29-deutscher-logistik-kongress">www.bvl.de/dlk/29-deutscher-logistik-kongress</a></td>
<td>PSI Logistics</td>
</tr>
<tr>
<td>23/10–25/10</td>
<td>IT &amp; Business</td>
<td>Stuttgart</td>
<td><a href="http://www.itandbusiness.de">www.itandbusiness.de</a></td>
<td>PSI Pent Hall 3, Stand E11</td>
</tr>
<tr>
<td>08/11–09/11</td>
<td>STAHL 2012</td>
<td>CCD. Süd Congress Center Düsseldorf</td>
<td><a href="http://www.stahl-online.de/Deutsch/Stahltag">http://www.stahl-online.de/Deutsch/Stahltag</a></td>
<td>PSI Metals</td>
</tr>
<tr>
<td>08/11–10/11</td>
<td>IPA — PSI Pent Customer Conference</td>
<td>Salzburg, Austria</td>
<td><a href="http://www.psipenta.de/de/veranstaltungen">www.psipenta.de/de/veranstaltungen</a></td>
<td>PSI Pent</td>
</tr>
<tr>
<td>22/11/2012</td>
<td>PLUG — PSI Logistics Customer Conference</td>
<td>Berlin, Germany</td>
<td><a href="http://www.psilogistics.com/de/log-news-events">www.psilogistics.com/de/log-news-events</a></td>
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</tbody>
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