

## Editorial



### Back to the Real World

In our eyes, the term “real economy” is a favourite for “word of the year 2009”. It may sound somewhat conservative, but it is more modern than ever! The interesting thing here is that only the havoc in the virtual world of finances has reminded people of the value-adding industries. Creative and hard working manufacturing companies which had what it takes to become the world market leader were only found to be creditworthy under very strict conditions, since sound business did not agree with the growth and expansion fantasies of the financial institutes. We as a software manufacturer know this situation only too well. During the New Economy boom, banks as well as the competition used to smile at solid and conservative strategies instead of considering them progressive or trendsetting. So when the industry then lay shattered on the ground, when some competitors had bitten off more than they could chew and all of a sudden substantial suppliers with stable customer relations became trendy again, time-honored solution providers like us fitted in again. In particular medium-sized manufacturing companies are strong in this respect.

*Alfred M. Keseberg*  
 Managing director  
 PSIPENTA Software Systems GmbH

## Topics

**2** The Transportation Management System PSITms of PSI Logistics is the IT basis of the “Efficient Load” research project. The focus is on tour planning and freight hold optimization. The development of a new optimization method is intended to cut transport performance (ton-kilometers) by 15 to 20 %.

**3** During the last months, existing PSImes customers were particularly interested in the issues of planning and controlling with integrated feedback of production data. This way the solution was able to show its strengths as a planning module as well.

**5** With support from 4Production AG, PSI is becoming an absolute specialist for consulting and solutions in the metalworking industry: The industry expert from Würselen near Aachen has successfully put its focus on metals supply chain consulting and production management systems.

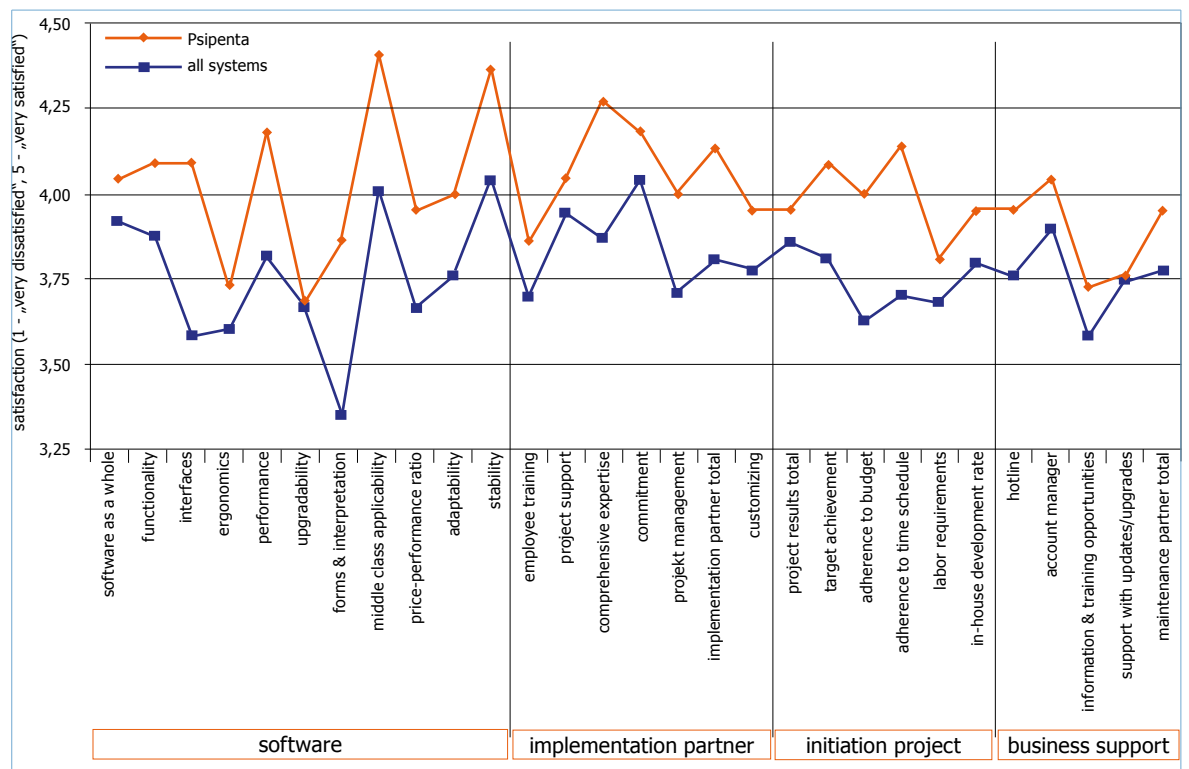
**6** PSI was given the task of delivering and introducing the PSImetals production management system by Thyssen Krupp Stainless USA. PSImetals is to be used as a cross-platform system for optimizing the production sequences at both the steel mill and the cold rolling mill in the future.

## Tailor-made suit for engine fitters

**W**ithin the scope of this year’s “ERP user satisfaction” survey, carried out by the Aachen-based company Trovarit AG, more than 400 companies from the field of machine and plant construction delivered their judgements. The basic market judgment was quite a good one. The differences are in the details, but that’s exactly where the wheat is separated from the chaff.

If you take the users’ statements as a basis, then classic providers such as Abas, SAP, PSIPENTA, AMS, Hinrichs & Müller and Proalpha are among the leading companies, having many years of experience, especially in the field of machine construction for medium-sized companies. “Not surprising to us,” says Alfred M. Keseberg, managing director of PSIPENTA, “since these are exactly the names we often have to compete with.”

Companies react in a sensitive way to a change of ownership structures, a fact one can see with different product providers lead by corporations which often reckon without the end user after several takeovers and strategy changes. Poor communication, vague product and maintenance strategies, heavy support service cuts, and many changes regarding custo-



User satisfaction in detail - Peergroup "Medium-sized industrial enterprises" (Source: Trovarit AG - the IT-Matchmaker © 2008)

mer support result in uncertainty on the users’ and IT-managers’ side. In situations like these, ERP users often show quite reserved reactions, e.g. when planning to modernize their ERP infrastructure within the scope of release changes. This in turn has a negative impact on user satisfaction, as Dr. Karsten Sontow, manager of Trovarit AG consulting house and head of the user satisfaction survey in Germany, says. “The more recent the release status of the deployed ERP solution, the more positively the user judges aspects such as user guidance, or the weak spot

of many ERP systems, the ‘Forms & Analyses’ modules.”

The PSIPenta user community gave the PSIPenta system far better marks than average in the 2006-2008 trend in areas such as ‘Forms & Analyses’, ‘Ergonomics’ and ‘Suitability for medium-sized companies’ as well as ‘Functionality’ and ‘Adaptability’, emphasizing the services of ‘Comprehensive expertise’, ‘Customizing’ and ‘Target achievement’. One reason for this positive development is the high circulation of the latest versions, but also the active informati-

on policy and continuous support by a single account manager. The service modules ‘Update and release change’ and ‘Release ability’ received only average marks, however. Both issues were addressed to PSIPENTA within the scope of the IPA user group conference.

General problems in the ERP systems of medium-sized and larger machine construction enterprises include necessary software adjustments. The same applies to the migration of business data into the

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Solutions

## New method for combined tour planning and freight hold optimization

The Transportation Management System PSI $tms$  of PSI Logistics is the IT basis of the “Efficient Load” research project. The development of a new optimization method is intended to cut transport performance (ton-kilometers) by 15 to 20%.

Green logistics has long become more than just a mere ecological creed to loaders and service providers, but an economic necessity. This is not due solely to rising energy prices. Many analyses and recent surveys show that the logistics and transport sector will have to face more environmentally and politically motivated climate-protection measures in the future. This is why PSI Logistics participated in the “Efficient Load” research project. The target of this project is efficiency increase with the disposition of transports. The focus is on tour planning and freight hold optimization. The project target of “Efficient Load” is to cut transport performance (ton-kilometers) by 15 to 20%.

“Efficient Load” is supported by the Federal Ministry of Economics and Technology within the scope of the innovation offensive “Intelligent logistics in freight and commercial transport”. Project partners are the paper manufacturers of M-real Corporation Transport & Distribution, Bergisch-Gladbach, Gefco Deutschland GmbH logistics service providers, Mörfelden Walldorf, VCE Verkehrslogistik Consulting & Engineering GmbH underwriters, Dortmund, the traffic logistics department at the Fraunhofer Institute for Material flow and Logistics (IML), Dortmund, and – as an IT supplier – PSI Logistics. Since the beginning of the year, practice partners, scientists and the IT specialist on the project have been working together to find an efficient solution for a higher vehicle workload



Maximum vehicle workload through intelligent tour planning algorithms

and reduction of transport performance (ton-kilometers).

To achieve this, the consortium is breaking totally new ground, since in real-life methods for freight hold optimization and tour planning are used separately. Through their uncoupled and sequential usage they are only able to produce local optimums at the moment. The result is that optimization of compiled orders distributed on tours and vehicles are usually ineffective, since the vehicle workload is then planned differently. With “Efficient Load” both optimization parameters are coordinated and carried out in a single step. The intelligent coupling of freight hold optimization and tour planning algorithms is supposed to achieve a maximum vehicle workload.

After all, a total optimum can only be used through the integrated usage of freight hold and tour optimization. “Efficient Load” is just such a method. It will result in significant cost reductions in the field of procurement and distribution logistics.

The basis for this new method is the PSI $tms$  Transportation Management System. With functions regarding location-spanning and item-precise production supply, as well as the supply of sales points in shops, multi-site PSI $tms$  is particularly focused on applying contract logistics and in acting within the loader environment. Apart from this, the system is able to productively consider the new driving personnel regulations, valid since January, with its expansion of general regulations concerning driving and rest periods in compliance with European law. That way, freight costs can be reduced by more than 10% using the PSI $tms$  Transportation Management System, as the results of reference projects with well-known market leaders suggest.

“Efficient Load” is going to be another optimization tool. The first trial algorithms are scheduled to be running by the end of the year. An executable version of this method is going to be available and ready for marketing by the end of

2009. Here, the integrated freight hold and tour optimization is designed for multiple sectors, so that loaders as well as service providers from very different fields are able to optimize their processes.

The requirements of different transport vehicles and means of transport such as heavy goods vehicles, containers, trains, ships and airplanes are integrated. PSI Logistics is going to integrate the optimization tool into the product range and release it after the research project has been completed.

“Efficient Load” cuts transport performance costs (ton-kilometers) and reduces energy consumption and environmental pollution, lowers toll and personnel costs, and increases overall competitiveness. With this new method, PSI Logistics will be able to make another state-of-the-art logistics solution available to the market.

Dr. Bernd Freitag  
b.freitag@psilogistics.com

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perfection in  
production

new ERP solution, as well as its maintenance during running business operations. As a result, user companies complain about severe delays during the introduction phase, costs increasing beyond budget, and a heavy workload for project teams. This way some users point out the negative side of continuous IT support: “ERP systems which cover all areas of a business organization have become so complex that clear management can become impossible.” Those ERP providers which focus on the needs of one specific industry are able to collect brownie points, on the other hand. While smaller machine constructors prefer solutions such as Abas or ams.erp, the IT department heads of larger medium-sized companies praise the advantages of low adjustment requirements with industry specific solutions such as PSI $penta$  industry, which cover a wide range already with the standard software.



Peter Dibbern  
pdibbern@psipenta.de



## Solutions

## New: The PSI-control center even displays material availability

PSI customers are still as interested in issues of production planning and control as ever. Thus, together with active customers from the user group, the MES performance range was once more expanded in the field of visualization. The planning module especially now provides strong new functions which, apart from optimization rules, also display current production data at shop floor level.

These customer projects have led to many new functions. The focus of development was on expanding functions dealing with material resources in the PSIleitstand the Finite Capacity Scheduler.

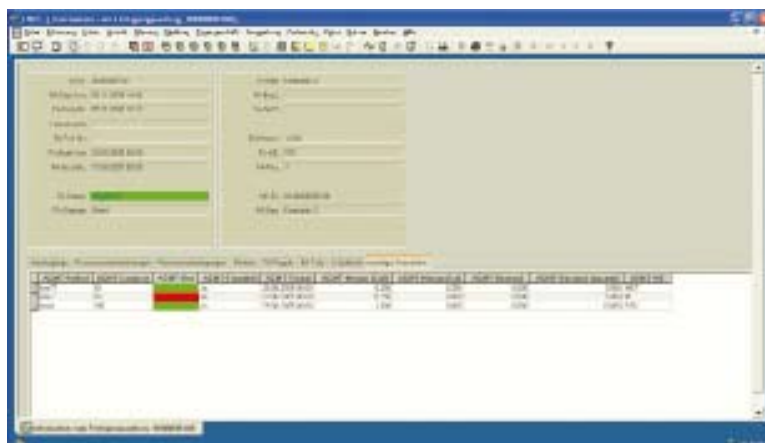
For the user, the system provides the option to display overviews of material bill positions in the single view of a production task based on real data from the PPS system. For each material list item, the required material's current stocks are displayed. Where not otherwise specified by the PPS system, all material list items are required for the first process step in the production task, thus also displayed in its separate view. If there is a special "reference process step" specified with the material list item, this material list item is only required for this specific process step. The user can have the inputs and outputs of a specific item displayed in the separate views in a capacity chart. The user now has the option to consider these inputs and outputs with the automatic planning, so that material availability, specified through the current item inputs and outputs, is always guaranteed.

A second option would be to not use this restriction with the automatic planning and to use the capacity chart as a source of information, in order to take countermeasures due to a lack of material



Overview of current stocks in the material warehouse using the PSI control center

availability. The available day order rules or the bicolored depiction of process steps can be chosen to be displayed in the Gantt view to attract the user's attention to problems with material availability by using "traffic lights", so that the user may take countermeasures manually.



Traffic light logic displays material availability.

These new functions enable to visualize the dependencies of material availabilities and to incorporate them into the planning process. This is how the resource and process optimization can be directly connected with the ERP business models.

The PSI control center allows for quick and flexible just-in-time production – and all this with sepa-

rate and/or continuous batch production. PSI<sub>mes</sub> provides answers to everyday questions such as:

- To what extent are the resources being used?
- Are all orders able to meet their specific deadlines?
- How can an order delay be prevented?

- How can changeover times be reduced?
- How can a disruption or breakdown be compensated for?
- Can a (rush) order be dispatched by the desired deadline, and what consequences might this have?

The PSIleitstand detail planning and enforcement tool is the executive unit for an ERP system. The

production tasks cleared by the ERP are taken over and incorporated in the planning of the process step/follow-up process level due to their processing time under consideration of the actual availability of resources as well as the current process states in due time, place and with the right quantity.

Lars Pischke  
lpischke@psi.de

## Loading luggage efficiently

Luggage loading errors are annoying. Both for the passenger and for the airline. While the first has to do without his or her personal luggage at the target destination, at least for a while, the airlines suffer from a dramatic increase in transportation costs for a passenger if this kind of error needs to be corrected.

Although most large airports have automated systems for luggage transport and sorting, recording the separate suitcases usually ends as soon as the suitcase leaves the system. Still, errors while loading the luggage in the containers or during transport to the aircraft might still occur on the tarmac.

The "Baggage Reconciliation System" PS<sub>lairport</sub>/BRS, installed by PSI at several German airports, now also in Hamburg, closes this gap. The loading of all relevant objects is controlled and documented in detail through mobile handheld units without slowing down the work process in this time-critical environment. After a successful trial run lasting several weeks, Hamburg airport is going to monitor its dispatch processes with PS<sub>lairport</sub>/BRS from December 1, 2008 onwards. The system supports the employee through clear visual and audio signals, and loading errors are thus spotted and prevented at an early stage. At the same time, the emerging data are transmitted to the airline online, so the latter is able to promptly inform its flight passenger of the status of his or her luggage, e.g. by SMS.

Thorsten Gäßner  
t.gassner@psilogistics.com



Solutions

## Combining production planning and business objectives

### New PSImetals APS release with holistic stock management

The current financial crisis and its impact on the steel industry show the importance of the ability to coordinate business objectives flexibly and on short notice. No matter whether the objectives are for less/more throughput, better customer service or cost optimization, within the PSImetals product family the Advanced Planning & Scheduling (APS) functions support our customers in optimizing the supply chain.

As you know, companies' sub-goals to be optimized (and especially those of the different production areas) often contradict each other. A typical example would be the conflict between meeting deadlines as accurately as possible and aiming at maximizing the throughput ratio. A single optimization of the job order regarding the agreed deadlines results in a large product variation within the day's program. This product variation can be produced on time through frequent re-equipping (e.g. reducing the sequence lengths at the steel mill), provided the negative consequences of a reduced facility workload and the impact

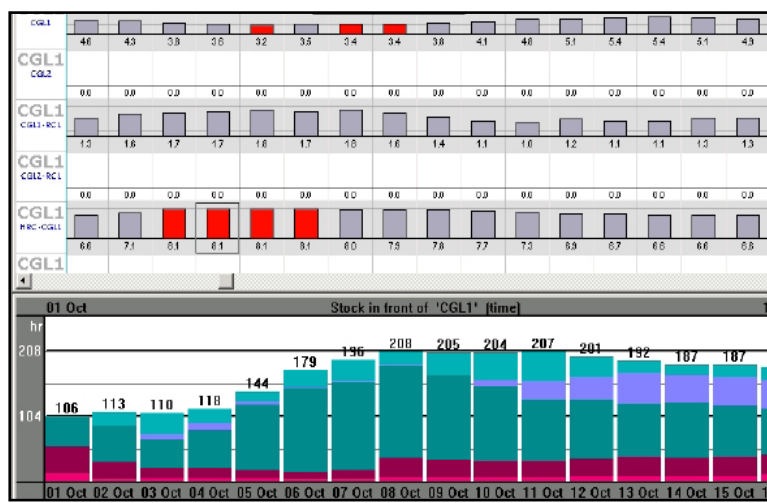
on the whole supply chain in form of a reduced added value are accepted. This way, missing throughput at the beginning of the process chain (e.g. at the continuous casting facilities) can lead to follow-up problems in the form of a gap in the supply with primary material or poorly implementation of stock structures for the downstream facilities.

This clearly shows that targets and KPIs for production planning need to be subject to a holistic approach. Stock management plays a key role in the steel and aluminum producing industries, which are known for their complexity.

#### Stocks: Result or precondition?

Stock levels and structures are the proved key figures for coordinating the cross-sequence material flow in nearly all planning offices within the metal primary material industry.

Apart from minimizing stocks as an objective, especially the demand-driven range control of stocks plays a crucial role here in order to guarantee deadline-orient-



PSImetals APS: Planning adhering to minimum and maximum target stocks

ted material flow across the whole supply chain.

Hence, stocks must not only be the result of optimization processes, but stock specifications need to be definable as side conditions in the form of quantities and structures. The workload can then be optimized regarding deadlines and throughput ratios within the "tolerance" specified here.

#### New release closes market gap

Looking at the market for metal-specific planning software, the topic described here has only been taken into consideration quite

poorly. PSI BT closes this gap by releasing the new PSImetals APS, and provides all the benefits of optimized planning, along with additional parallel specification of structured stocks objectives.

The cross-sequence rejection of orders is now possible, adhering to minimum and maximum target stocks.

This way scheduling results are avoided which are not based on practice-oriented stocks levels and structures. The new stocks management is an integrated component of the PSImetals APS optimization model, and combines com-

plex algorithmic methods with the planners' practical experience in controlling their production facilities.

The new KPI board can also check whether the operative main business objectives have been realized or not. Indicators forecast future stock development (stock/per product), adherence to deadlines and workload. Deviances from the objectives are indicated via alert messages. Objectives and their limits can be freely configured and thus enable flexible decision support, able to gear the arrangement of production plans towards current business objectives at any time.

Jörg Hackmann  
j.hackmann@psi-bt.de

## Talking with PSImetals customers from all over the world

The focus of this year's UserGroup is our customer Rasselstein GmbH with its headquarters in Andernach.

CIO Ralf Damitz reports about Rasselstein's IT strategy. In addition, Winfried Vomland showed the deployment possibilities of PSImetals with Rasselstein, starting off with cross-section planning down to specific issues such as coil remainder optimization. The management of the Andernach plant wrapped up the report about and by Rasselstein. The direction PSImetals takes in the future was

shown in a speech about the next-generation of PSImetals APS (see article above), as well as Felix König from the Technical University Berlin talking about the potential of complex re-equipment time optimization.

The real-life report from other PSImetals customers attracted a lot of attention as well. Joachim Lehner from voestalpine Stahl talked about the very positive experiences using PSImetals as a quality control system in the field of melting metallurgy. Günter Sube gave insights into how production

is controlled with online key figures at Thyssen-Krupp Steel's plant in Bochum.

Interesting conversations and speeches, an impressive plant tour and a great atmosphere in beautiful surroundings - this is, summed up, the feedback given by participants. Our Thanks go out to Rasselstein for supporting the organization and staging of the event.

Annett Pöhl  
a.poehl@psi-bt.de



We were allowed to welcome more than 60 participants from Germany, Austria, France, Brazil, Russia and China at the 6th PSImetals UserGroup, staged with our customer Rasselstein in Andernach as well as at the nearby Maria Laach lake hotel.

## Projects

**Clearly structured processes pay out in full:****Manufacturing Execution System from 4Production reduces dead capital in the field of metal production**

With support from 4ProductionAG, PSI is becoming an absolute specialist for consulting and solutions in the metal-working industry. The industry expert from Würselen near Aachen has successfully focused on metals supply chain consulting and production management systems, especially in the aluminum and copper industries. The global players from this industry are among their customers, just like Schwermetall Halbzeugwerk GmbH in Stolberg. The manufacturing execution system integrated by 4Production is convincing, particularly thanks to significantly increased transparency, response ability and decreased throughput times. All this results in top-class supplier reviews.

Increased raw material prices are going to make the processing industries optimize their processes even further, so that the pre-financed materials can be kept as briefly as possible within the company. This is something Schwermetall in Stolberg has realized, too, and has made their production control more efficient with the help of specialists at 4Production. In order to be able to respond more quickly to the requirements of the markets and to realize a performance increase and a deeper processing at the same time, the 4P MES manufacturing execution system from 4Production was incorporated into the company.

Schwermetall belongs to the worldwide leading manufacturers of pre-roll strips made of copper and brass. A great deal of the primary material required within the EU for producing Euro coins comes from Stolberg, for instance. Apart from coin manufacturers, companies from the automotive and electronics industries, as well as from the field of telecommunications, are among the main customers. Up to 1,000 tons of strips in

a variety of basic alloys leave the plant every day, ownership of the plant being shared between Norddeutsche Affinerie/Prymetall and Wieland-Werke with 50% each.

The primary material manufacturer's IT structure has only been partly used throughout the company up to now. Delays with feedback and transfer errors could hardly be avoided, since the production planning used to work mainly with manually prepared lists on paper. The new system was supposed to automate these processes and thus to increase transparency and reliability. Dr. Karsten Neumann, project manager at Schwermetall, explains: "Our focus while choosing a product was to make sure that the ba-



Dr. Karsten Neumann, Projektleiter

sic software was already very close to our specific processes." The solution provided by 4Production was therefore their first choice. One of the advantages the IT specialist had was the fact that the company founders come from the aluminum-working industry, and thus tailored their products to meet the requirements of the metal-working industry. This way, they are able to integrate production and process know-how from the very beginning. "The simple representation of our processes confirmed our selection strategy. Order-related documents are a thing of the past now," Neumann declares, loo-



In order to keep prefinanced materials within the company for a minimum amount of time, processes need to be optimized.

king back. Since the implementation of the MES by 4Production, the deadline is now the standard reference variable for all organizational departments. In order to be able to plan and respond on short notice and more quickly, all machinery and facilities are equipped with at least one computer and a control monitor for a visual display of the current state. Transparency of processes is the most significant change. This also is reflected in our response times.

Erwin Bronk, 4Production AG manager, says, "It's not about generating as much data as possible. We provide real-time scheduling, which means controlling via real-time data." This is what makes integration from planning within the management down to the machinery effective in the first place. The preparation phase benefits most from this, since current information about the machine wor-

kload, material management and procurement data (PDA) are always available.

After the IT solution was introduced within around 18 months to the core areas while the production was still running, with the whole company going to be connected to this new infrastructure during the next three years, the measure is proving successful already. Project manager Neumann says, "We already have noticeable improvements regarding the three target variables increase in response ability, reduction of throughput times and stocks." Generated data are able to be transferred directly into organizational processes, since optimization potentials can now be spotted immediately, which allows us to arrange all production processes in an optimal manner.

The fact that 4Production has just received a flawless review from

Schwermetall as an A-supplier emphasizes this even more. Thus there are plans for the future, since even more functions are to be realized. The cooperation with the metal specialist was also here the starting point for a long-lasting strategic partnership.

Authors:

Caren Möhrke, Marketing Services, Düsseldorf

Martin Ciupek, VDI, Düsseldorf

Elisabeth Altenberger

[elisabeth.altenberger@4production.de](mailto:elisabeth.altenberger@4production.de)



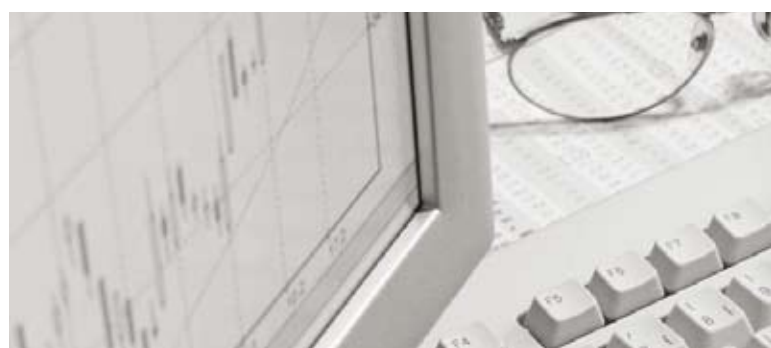
Group

## Group net result increases by 237 percent to 2.8 million euros

The PSI Group increased its EBIT to 4.2 million euros. The pre-tax profit increased to 3.4 million euros, the Group net result to 2.8 million euros. Group sales increased to 92.0 million euros. Adjusted for the sale of the government business in mid-2007 and the acquisition of F/L/S GmbH and the 4Production AG in the second and third quarters of 2008 the sales grew by just under 8 percent compared to the same period for the previous year. The volume of new orders increased by 16 percent to 119 million euros and the order book volume increased by 24 percent to 105 million euros.

The Energy Management segment (electricity, gas, oil, heat) obtained sales of 39.3 million euros. The EBIT was increased by 59 percent to 2.5 million euros. In the German-speaking market PSI was awarded numerous important contracts from large electricity and gas suppliers. In the field of electrical energy an important pilot contract for a Russian high-voltage grid region was obtained. In the coming quarters PSI expects additional important contracts from domestic and export markets in this segment.

Sales in the Production Management segment (industry, logistics) were, with 41.9 million euros, 12 percent above that of the level for the previous year. The EBIT



doubled compared to the previous year by 1.7 million euros. Here, the Metals unit could further expand its market position with important international orders and the integration of the 4Production AG. The areas of logistics and mechanical engineering also profited from increased investments in the efficiency of industrial added-value processes.

In Infrastructure Management (traffic, safety, telecommunications) sales decreased as a result of the lower hardware portion and the sale of the government business to 10.8 million euros. The EBIT was, with 0.2 million euros slightly below the value of the previous year.

The number of employees increased as of 30 Sept. 2008 to 1,109 as a result of the acquisitions and targeted recruitment with an emphasis on export. Liquid funds on 30 Sept. 2008 were, with 21.6 million euros above the value of the previous year. The cash-flow from operating activities improved to 2.7 million euros.

PSI records growing efficiency investments of the heavy industry and the energy sector in Germany and export markets. As a consequence of the continuing concentration on the growing economies in Eastern Europe and Asia, PSI is profiting from the continuing investments in the improvement of national and industrial infrastructure in these countries.

The long-term cost-reduction program for platform convergence and the right-sourcing will continue to improve the margin. With the record order book volume of 105 million euros and the well-filled sales pipeline PSI foresees a continuation of the good business in 2009 and beyond. The management reiterates the annual targets of about 130 million euros in sales and about 6 million euros for the EBIT and the cash-flow from operations.

Karsten Pierschke  
kpierschke@psi.de

## PSI continues successful internationalisation

PSI has been charged by ThyssenKrupp Stainless USA with the delivery and implementation of the production management system PSImetals for the stainless steel plant being built in Alabama, USA. The new plant will consist of, amongst other things, an electro-steel mill and cold rolling mill including the finishing line for the production of high-quality stainless steels. In the future, it is intended that PSImetals, serving as the comprehensive system, will optimise the production processes in the steel mill and cold rolling mill.

The initial phase of the solution consists of the functional segments Advanced Planning and Scheduling (APS) und Advanced Line Sequencing (ALS). "With the introduction of PSImetals at the Alabama site, ThyssenKrupp Stainless is continuing the proven IT strategy", explains Klemens

Bransmüller, CIO ThyssenKrupp Stainless and ThyssenKrupp Niropa in Germany. "PSI solutions have been running successfully for more than five years at the steel and cold rolling mills in our German plants. The PSImetals roll-out for the Shanghai Krupp Stainless cold rolling mill in China reinforces the decision to introduce the solution at ThyssenKrupp Stainless USA as well."

The ThyssenKrupp Stainless USA order is, following orders from France, Brazil, China, Canada and Russia, already the sixth major international order from steel producers this year. With this order, PSI is continuing the growth of its steel software subsidiary PSI BT GmbH on the North American continent and in the global steel industry.

Bozana Matejcek  
bmatejcek@psi.de

### Newsticker

+++ PSI Awarded Important Contracts in the Field of Energy from Germany and Austria - New combined energies control systems for regional and municipal utilities  
+++ PSI Awarded Contract for Energy Trading System from EnBW Gas GmbH - Implementation of the new accounting regulations in the gas industry with PSImarket  
+++ PSI Obtains Major Order from the Russian Energy Sector - Control system for the northwest region of the Federal Grid Company  
+++ PSI Increases Sales Activities in the North American Steel Market - Dr. Harald M. Henning has been representing PSI in the North American steel market since the end of August 2008

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PSI AG  
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Telefon: +49 30 2801-2130  
Telefax: +49 30 2801-1042  
produktionsmanagement@psi.de  
www.psi.de

Editorial Staff:  
Peter Dibbern; Anja Malzer;  
Bozana Matejcek; Karsten Pierschke; Annett Pöhl; Beate Wesenigk, Elisabeth Altenberger  
ConceptS/Production:  
Beate Wesenigk

Pictures:  
M-Real (Seite 2),  
4Production AG (Seite 3),  
Schwermetall Halbzeugwerk GmbH & Co. KG (Seite 5)  
stock exchange (Seite 6).

### Events

ITnT 2009	Wien (A)	27.-29.01.2009
CeBIT 2009	Hannover	03.-08.03.2009
Passenger Terminal Expo	London (UK)	24.-26.03.2009
Digital Factory	Hannover	20.-24.04.2009
transport logistic	München	12.-15.05.2009
Aachener ERP-Days	Aachen	16.-18.06.2009

For more information and events, please click on <http://www.psi.de>.