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FEBRUARY 2008

# APS projects of the LOGIS company bring the benefit of high value to businesses

**LOGIS** makes use

### of the most effective APS technologies



According to the AMR assessment, the most successful APS/SCM projects are most frequently based on products from i2 read on page 8

# Through the eyes of a customer

On the project of APS implementation with the production manager of Třinecké železárny

# **Prestigious recognition**

of the APS project in Třinecké železárny

#### Improvements reached in APS projects

introduced in this issue



#### TŘINECKÉ ŽELEZÁRNY

TŘINECKÉ ŽELEZÁRNY a.s.

Manufacturer of steel long rolled products

#### Results achieved:

- Improved accuracy of supply timing
- Reduction of delayed deliveries by 50%
- Operational excellence improvement
- Improvement of heat sequencing by 70% read on page



TOS VARNSDORF, a.s.

Leading world manufacturer of machine tools

#### Results achieved:

- Reduction of delivery lead times to less than one half
- Precise management of demands of material
- Throughput improvement
- Increased added value per employee
- Increased sales and profits

read on page 5



Manufacturer of aircraft engines and components

#### Results achieved:

- Improved delivery performance (reduction of backlogs by 80%)
- Precise management of demands of
- Improvement of resource utilization
- Throughput improvement by 40%
- Improved balance of production



Engineering-metallurgical grounds

#### Results achieved:

- Reduction of order lead times by several tens of percentage points - Despite significant increase of pro-
- duction, high standard of deadline
- Improvement of resource utilization - Inventory reduction (the inventory from
- orders without demand fell three times) - Increased productivity per employee
- by 20%



#### HAYES LEMMERZ AUTOKOLA a.s.

Manufacturer of wheels for passenger cars and fork lifts

#### Results achieved:

- Permanently improved delivery performance to more than 97%
- Reduced reaction time from 2 days to 10 minutes
- Improvement of resource utilization
- Inventory reduction of approximately 50%

















# TOS VARNSDORF **Makes Use of Expansion Opportunities**

Thanks to its APS System

TOS VARNSDORF a.s., a leading producer of machine tools specialized in the field of horizontal boring machines and horizontal machining centres, has doubled its sales in three years. It would be impossible to achieve this result without the highly effective management of order fulfilment resting on the system of advanced planning, i2 Factory Planner. Today, the company considers investment into the APS system an investment of strategic importance. The partner of the management and planning system development is the LOGIS company.

Ten years ago, TOS VARNSDORF was the first engineering business in Central Europe to decide to make use of advanced planning technologies in order to improve management effectiveness.

Jan Rýdl, Chairman of the Board of Directors of TOS VARNSDORF, says in connection with this decision: "In the mid-nineties when zed, we had many reservations in the management:

the delivery lead times of our product were long, the deadline performance was low, the flow rate was small and the inventory was inadequately high. We kept fighting situations, which were absurd at first sight: most resources of our production base weren't utilized to their full capacity in the long term, still

we were unable to improve the flow rate; we had high material inventory yet some material

was missing in the workshops from time to time. Hence we had to solve many issued by improvisation. This was also the reason why our delivery lead times and the delivery deadline performance counted for little and why our economic parameters were behind our western competitors to a great extent.



our business was privati-Chairman of the Board of Jan Rýdl Directors

"In the course of time, we consider the investments connected with the system of advanced planning investments of strategic importance." Jan Rýdl

It was clear that our problem, or rather our opportunity, was the effectiveness of management of the main company process. It was also clear that if we didn't try anything in this respect, we could not expect anything to change for the better.

"Certain improvements emerged after implementation of the ERP system. The effect was, however, an improvement of the business administration rather than a better performance of management. The actual management, i.e. the decision-making on whom should

do what and when, was affected significantly only by the system of advanced planning (the APS system), i2 Factory Planner. We decided to apply it at the end of 1997. Our primary objective then was shortening the delivery lead times, improved flow rates of production and improved inventory turnover.

The results we achieved mean a clear improvement. As soon as the turn of the millennium,

worked with a significantly shorter inventory turnover, the delivery deadline performance had improved, we gradually managed to reduce delivery lead times to approximately one half. All this upon roughly a triple growth of sales as compared to our beginnings in 1995, i.e. under markedly higher complexity, continued on page 5

# APS Projects – Driving Force of **Business Effectiveness Growth**

As always, we have prepared this issue of LOGIS NEWS for those readers who are interested in learning something more about the possibilities of applying advanced planning methods and technologies in manufacturing concerns. The content of the paper is intended in particular for businessmen, business managers and all others concerned about the successful development of business and those who believe that a high flow rate and operating effectiveness as well as the rapidity, deadline performance and flexibility of supplies to customers are indispensable for the growth of the competitive advantage of a business.

Approximately ten years ago, the term of advanced planning and the abbreviation APS (Advanced Planning and Scheduling) connected with it emerged in our country for first time. It was just ten years ago that the first Czech business decided to apply advanced planning technologies in order to increase its competitive advantage. These days, advanced planning is firmly established in our country. There are increasingly more businesses, including the flagship firms of our industry, for which the topic of advanced planning technologies is a current and hot one. This is caused in particular by the fact that

# **WALTER ENGINES** Fly on the Wings of APS

WALTER ENGINES, a traditional manufacturer of aircraft engines, implemented a project in the course of 2006, the objective of which was to increase the delivery performance and throughput improvement. In the course of the project, a quality change of the process of production planning and management was experienced, and only a few months after the project completion, this change was reflected by substantial improvement of the production flow rate with simultaneous marked improvement of deadline performance. Within the project, the i2 Factory Planner advanced planning system from i2 Technologies was implemented. LOGIS was a partner of this project implementation.

Václav Havlan, Vice-chairman of the Board of Directors of WALTER ENGINES, states in connection with the project:

"In the course of recent years, our company has undergone a number of changes with only one objective - to increase its competitive advantage. Competitive advantage was also one of the main reasons for our participation in the project of advanced planning. In the environment of the aircraft industry, in which we operate, demands continue to increase on quality, delivery performance, reduction of de-

livery lead ti-

mes and ove-

rall flexibility

of reaction to

changing

conditions.

As concerns

the quality of

our producti-

on, we belong

among the

top producers

worldwide.

Vice-chairman of the Board of Directors."



vaciav Havian

Vice-chairman of the Board of For that matit not be the case, we couldn't be the supplier for compa-

nies like Rolls-Royce or SNECMA. We knew, however, that if we had learnt to be a faster, more reliable and flexible supplier, it would have opened the way to further expansion. We had a clear idea what activities advanced planning implementation would help us to develop, and this

wasn't an expansion plan only in percentage units. As of the beginning, this fact determined the

importance of this project, this also determined our approach to the selection of a supplier Libor Veverka, Member of the Board of Direc-

tors, adds: "Production at WALTER ENGINES

ponents for aircraft engines. In all these fields, a number of demands emerge on the production and completion of components, supplies of materials from subcontractors or components from cooperating companies. All inputs have to be prepared in time for assembly or dispatch. The problem, however, is not solved by coping with coordination of the production activities. Production is only one component of the logistics chain. It's immediately followed by the activities of the purchase and sales department. In all these fields, small and big surprises keep emerging: the customer changes the requirement, a subdelivery from the supplier is available on a different

is divided into two programmes: (1) the produ-

ction, repairs and service of aircraft engines

and (2) order cooperation - production of com-

date than we expected, or there's a problem in the production department Although the situations keep changing, the pace and deadline delivery performance



Libor Veverka Member of the Board of

remain the primary requirements of our customers. In WALTER ENGINES, we have set a target to cope with these situations much better than in the

"The chief motive with which we approached the project past. The objectiof advanced planning was the competitive advantage." ve is to react to

Václav Havlan

any change of the situation by quickly finding the best solution, which is

reflected in an updated plan. A plan, which will be prepared quickly, and a plan, which will allow consistent coping with unexpected events and making the most of the situation."

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# **ŽĎAS** Increases Operating Effectiveness

# by application of APS technologies



At the beginning of 2006, in the engineering - metallurgical complex of ŽĎAS, a.s., with its registered office in Žďár nad Sázavou, the project of implementing an advanced planning system and production scheduling commenced. The supplier of this project was IBM Czech Republic and its alliance partner, LOGIS. The product i2 Factory Planner from i2 Technologies was being implemented. The objective of the project was in particular to improve the operating parameters of production and logistics, which include not just the reduction of lead times and improved production plan performance, but also a reduction of inventory of semi-finished products and material. In addition, the project shall have a positive effect on the improvement of delivery performance in relation to the customer and the economic parameters of production such as the assessment of the production plan and planned business transactions.

Miroslav Šabart, Vice-chairman of the Board of Directors and General Manager of ŽĎAS, states on the project: "For a certain period of time, ŽĎAS has been profiled as a customer-focused company. In today's highly competitive environment, this is a condition of success. Though in the last few years we've achieved significant improvements in these areas, which were positively Miroslav Šabart reflected in the results of our management, among Directors and General Manager other things, some reserva-



Vice-chairman of the Board of

tions still exist. One of the fields where we can see the improvement potential is better coordination along the whole supplier-customer chain, starting with purchase and ending with sales. Therefore we decided on the APS project for the project of advanced production planning. We selected IBM and LOGIS as our partners for its implementation, as these companies offered top solutions verified in many foreign as well as domestic projects."

Igor Kliment, assistant to the production manager, was in charge of coordination of the project implementation on behalf of ŽĎAS. "We devoted close attention to the preparation of the project team. The project affected a number of activities, which had been performed in our company without changes for many years and therefore when setting up the team, we had to consider not just the expertise of the individual members but also their ability to adopt and enforce change. I'm glad we managed to set up the team so that it managed to cope with the demanding tasks raised by the project.

"Right at the beginning we realized that the APS project was not primarily an informative project but due to its range and complexity of related changes, it went across all decisive departments of the company. Thanks to this, the key users entered the process - representative of expert departments - who were at first made familiar with experience from implementation of the proposed solution in similar manufacturing companies and then, together with the supplier's experts, prepared a draft process of a business transaction realization making use of APS and evaluating its effects.

"The schedule of the project was prepared for the special current situation of the bu-

Pavel Kantor, Head of the Informatics Department of ŽĎAS, comments on this: "A long-term project identified as IS Unification Project has been running in our company in the field of IT, the target of which is, among other things, the technological and functional restoration of our information system. APS is becoming one of the key components integrated in the business information system of ŽĎAS. The coordination with the IS Unification Project affected the definition of the scope of individual stages of the APS project as well as its overall duration."

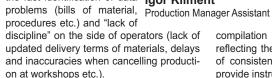
#### Comments on the project

· At the very beginning of the project, a planning group was appointed, the activities of which supported by the APS system

contributed significantly to the improved quality of planning.

 Improved quality of data The management, through advanced planning allows setting up very accurate plans, reacting very sensitively to changes of situation. In order for the system to work however, it is important for the data we provide to the system to be as high-quality as possible. Therefore the improvement of data quality was one of the decisive tasks at the be-

ginning of the project. We were pleasantly surprised by the strong support provided by the APS system. When reading the data, APS checks the consistency of the data read and generates reports on which we can rely when removing the ascertained defects. Hence by the APS i2 Factory Planner system, ŽĎAS acquired not just a strong planning tool but also an effective tool for the fast identification of data Igor Kliment



The diagram of error frequency development illustrates how we managed to reduce the number of problems with our data in the course of the project. From the very beginning, we understood the APS system as a tool through which we would use more effectively the data resources filed in our company information system for the benefit of our business. Thanks to the effective purposes of operative management. The project meant a transfer from work with gross recourse needs to detailed specifications of resource needs (from technological procedures) related to individual resource units. During planning, more data are processed (APS being able to cope with this easily) but the result of the planning is then very well usable for the usual management of production.

· Following the detailed specification of resource needs, a substantial specification of timing of material needs and the purchase needs following them could be effected.

• In the course of the project, the environment for the creation and updating of the plan was unified at all levels. The result is the possibility to plan and manage narrow

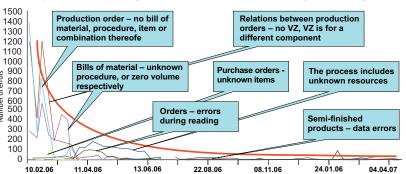
points with relation to the whole business transaction.

• Fast reflection of changes. At all levels of production realization, there might be continuous changes (change of requirements, change of material availability, resources etc.). All these have a larger or smaller effect on the advantage and feasibility of the currently effective plan. Thanks to the APS system, we are able to react rapidly to changes of situation by the

compilation of a new version of the plan reflecting the changes. Even in the course of consistent changes, we're still able to provide instructions for the purposes of management, which are well applicable (they are not prevented by lack of sources) and the observance of which is highly effective in terms of company objectives.



The results of the project were assessed in the final report. Following a successful opposition, the report was approved by the



assistance upon assurance of high quality of data, the APS system helped us to significantly increase the value of this data

- The information from various parts of the company IS (ISŘ as well as DŘV) was combined in one model. Thereby we acquired a comprehensive view of orders and their fulfilment.
- · Specification of resource needs. Formerly, we used to wor rce needs above the joint workplaces for management purposes. These gross data could actually be used only to consider gross balances and they could not be used for

company management. The final report states that the lead times were shortened, inventory reduced, a high level of deadline delivery performance has been achieved and the productivity per employee has been increasing. On the basis of economic calculations, the return of the project was determined at two years

#### **Shorter lead times**

According to the results of our measuring, the lead times shortened by several tens of percentage points. This result was achieved in a situation when the number of processed orders as well as the volume of produ-

Czech crowns that were thereby absolutely, unnecessarily "dead" and could not be used for other, more urgent needs. The following chart shows how we've managed to reduce Development of frequency of errors identified in the data by the APS system the volume of this inventory. The chart records a reduction by approximately 80% in the course of several months. **Delivery performance** 

120 %

In the period before commencement of the APS project and at its beginning, we were fulfilling approximately 500 orders simultaneously. When starting the routine operation of APS, this was as much as 700 orders. This growing trend has continued and these

tory, i.e. inventory, which is not actually re-

guired by the production department, could

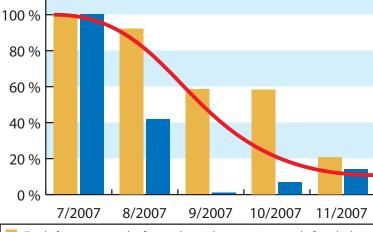
reach a volume of up to tens of millions of

cteristics of the planning group activities follows:

- · Continuous (daily) activities include:
- continuous updates of the plan (following the initial planning, the system provides information on ascertained dangers, they are solved through the system tools);
- control of deadlines of delivery and current supplies of material, initiating necessary measures:
- solution of delivery delays;
- work on security of orders in the long-term horizon.
- · On a weekly basis, production plans are released to the workshops.
- On an annual basis, we create an annual plan with identification of narrow points, forecast of needs of cooperation etc.

The planning group is also continuously





Total of inventory surplus from orders without requirements before the horizon Total of inventory surplus from orders without requirements after the horizon

days, we are simultaneously fulfilling approximately 850 orders. In this situation, with the growing complexity and load, we achieve a high delivery performance, which is close to 100%

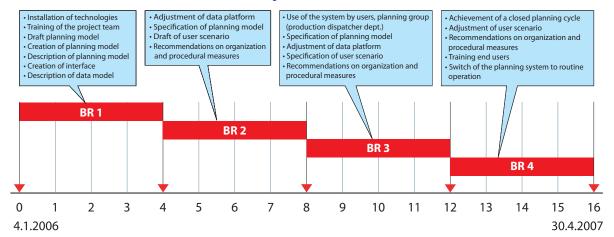
#### **Productivity growth**

We cope with a growing volume of production with the same number of employees, As a result of this, the productivity per employee is growing. If we compare the volume of performed production in financial figures at the beginning of the project (Q1-06) and after

concerned about data quality and initiates measures for improvement. But works focused on data quality do not end with completion of the implementation. The care for high quality of data has to be one of the permanently applicable tasks we have to meet. The care for data quality is connected also with care for their up-to-date nature. The less current the data, the worse is the information on which the planning system is based; the plan therefore corresponds less to the reality and it is more difficult to use it for management. For this reason, we in-

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#### **Project Schedule**



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# **APS in Hayes Lemmerz Autokola**

### Swiftness, reliability and flexibility of supplies within the automotive industry HAYES LEMMERZ

Hayes Lemmerz Autokola has implemented and has been using the APS i2 Factory Planner system. It authorized LOGIS to perform the implementation. The project was implemented quickly and it brought very goods results in the form of reduction of inventory and improved customer satisfaction.

Hayes Lemmerz Autokola, a.s. is a part of a supranational concerns Hayes Lemmerz International, Inc., a global producer of aluminium and steel wheels for passen-

steel

in



Jiří Adámek

pment and General Manager production of steel car vehicles for passenger cars and fork lifts. Its biggest customers include General Motors, Volkswagen, KIA, Ford, Suzuki. Toyota and PSA. Within the segment of wheels for fork lifts, these are for example

NACCO, Still, Daewoo, Trelleborg

#### **Grounds of the investment**

At the end of 2002, Hayes Lemmerz Autokola decided to implement the i2 Factory Planner system for advanced planning and scheduling. Ing. Jiří Adámek, General Manager and Member of the Board of Directors of Hayes Lemmerz Autokola, states the following on the grounds of project implementation: "The automotive industry is a very demanding environment without compromise. Its supplier chains continue to increase their demands on each of their segments. Companies wishing to succeed can't rely on being able to manufacture products with excellent technical parameters and high quality - these are considered a matter of course these days, a necessary but not a sufficient precondition. Today, companies in the automotive industry have to be able to offer more. The imperative these days is the standard of customer service. The requirements on flexibility, swiftness, accuracy and reliability of supplies are growing fast. These parameters are strongly affected by how precisely, smoothly and with what performance the process of order implementation is realized.

"There are many activities behind order ful-

filment, the companies having only limited sources for these activities. It is a matter of fact is to be able to arrange activities any time in such a way that the company is able to make the best use of the opportunities it has, this meaning to be able to fulfil as many orders as possible to the maximum satisfaction of the customer - i.e. swiftly, reliably and flexibly – but with the lowest costs possible. This task is not easy at all as there are many activities, relations and restrictions in the dynamically developing system and traditional solutions like a pencil and a piece of paper or planning in ERP or Excel quickly hit the limits of their possibilities.

"In order to support the fulfilment of our targets, we decided to implement advanced planning technologies and use them for the benefit of more effective management of our business. These days, from a distance, I can state that it was a decision, which certainly had a positive effective on the development of our company."

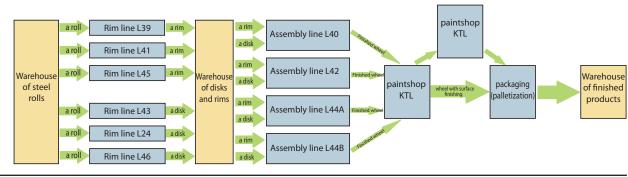
#### Characteristics of production and objectives of the APS project

Production is performed on a line with fixed intervals. The production is realized in batches; when the batches are compiled, one looks for a compromise between the effort to minimize the time of line adjustment (economic view, operating effectiveness) and the requirement of deadline delivery performance (customer satisfaction).

In terms of the company targets, the following targets of implementing the APS system were determined (quotation from project documentation):

- Improved delivery performance.
- Reduction of inventory finished products, semi-finished products, material.
- Throughput improvement better use of resources and increased turnover.
- · Ability of quick response upon change of requirements.

#### Production capacities and flow of material



Ing. Vít Lednický, Manager for Informatics and a member of the project teams, comments on the course of the project: "For the



Vít Lednický Manager for Informatics

tation of the APS i2 Factory Planner system, we prepared quite a demanding schedutogether with LOGIS We're pleased it has been confirmed that our plans weren't too optimis-

implemen-

tic. We ap-

plied the implementation method of LOGIS, which provided us with precise guidance; it didn't allow us to go down a blind allev. to do too much at once or to get nowhere fast. This allowed us to reach the important

-month implementation stage, we managed to meet the plan of the project – both in terms of time and in terms of the achieved results. Following the completion of the implementation, we could regularly make use of the following abilities:

- · Globally optimise the plan
- · Quick reaction to customer demand
- What-if simulation of the plan creation of plan variants
- Assessment of plan variants from the financial point of view
- Quick updating of the plan in reaction to a change of situation

#### Process of plan creation, daily routine in planning

The planning process works with a daily cycle, meaning that every day, we have a plan available, which reflects the current situation of the company. Hence if a more significant event occurs, which might affect the order fulfilment, the relevant information is provided to the planning system immediacompany system resulted in a change of management quality. These days, the management is more effective, accurate and sensitive. We're glad we managed to meet all the targets of our company connected with implementation of the project (see above). The achieved improvements are demonstrated in the attached charts.

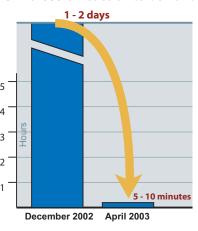
#### Delivery performance

The effects of the advanced planning were most obvious in the period of the system commencement, i.e. in the first months of its routine operation. Upon the application of more effective management, in a few months, the monitored parameters went from the original levels, around which they had ranged until then, to new ones where the figures of parameters settled in the long term. It is highly visible, for example in the diagram reflecting the development of deadline delivery performance for our customers where in the period of commencement, the performance improved from 87% to 97%. Since then the delivery performance has not fallen below 97% and very often, it reaches up to 100%

#### · Swiftness of demand response

In the event that a new request appeared formerly (cancellation, order) or if a request changed, it was necessary to assess the effects of such an event on the possibilities of realization (to determine a reliable deadline of performance, to allocate necessary resources), the possibilities of assessment were guite limited. The relevant works lasted on average for two days and despite this, they provided quite inaccurate results as our people were unable to consider all the relevant effects upon the assessment. The use of the APS system in this field resulted in a stri-

#### Swiftness of reaction to demand



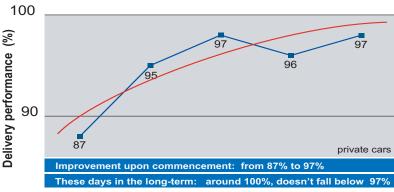
king change. The assessment of a request is now a matter of a few minutes while the result is highly reliable information. Hence we're able to confirm the terms of delivery to our customers, which we're usually able to keep later with high reliability (as shown in the diagram of development of deadline delivery performance).

#### Reduction of inventory

In order to illustrate the improvement in the

our system of management based on the use of the APS i2 Factory Planner system."

#### Growth of deadline delivery performance



field of inventory, we decided to compare the volume of stock in relation to the volume of production (number of produced wheels as well as sales) for 2002 (immediately before implementation of the APS system) and for 2006. It's clear from the comparison in the diagram of inventory reduction and production growth that while the volume of production grew by approximately one fourth, the volume of inventory fell approximately to one half. "The application of technologies of advanced planning increased the effectiveness of the process sale - production - purchase. In the same time, the project reinforced some of our

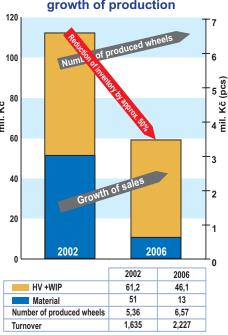
important skills - for example to identify potential narrow points within order fulfilment before they actually emerge and to adopt relevant measures in time, or the ability to plan the request for material with greater accuracy and in a longer time horizon. It also allowed us to react more quickly and accurately to changes of the situation like the entry of a new order, exceptional outage of resources etc. "Sometimes we face the question whether 🖫 the achieved improvements can be assigned only to the APS system. Of course we can't say of the achieved results that they were produced exclusively by the APS system. The APS system is a very strong tool supporting the management but it's ,just a tool'. It's important for this tool to be applied effectively and this is up to our managerial employees. Without them, the APS system would only be a toy in the hands of a few fans in the company. On the other hand, without an executive tool, the utmost effort of the managers could not bring the coveted fruit. In terms of achieved results, the APS system isn't a sufficient condition, still

it was a necessary one. "Planning and operative management through a plan has become a routine in our company, which we no longer consider anything special. We don't have any doubts that the basis of high effectiveness and good operation of our order fulfilment is

#### Final assessment

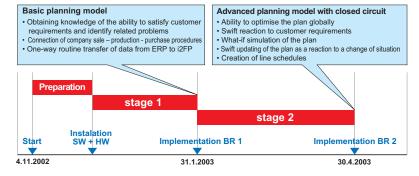
The final assessment is to be provided once again by the general manager, Jiří Adámek: "It would be great if every project we implement were as successful as this one. The results of the project met our expectations positively. Today, we work more effectively and with greater knowledge. Now we're able to identify many problems, which we had to face in the past, in advance, find a solution in time and thereby avoid them. We're able to react to any changes concerning order fulfilment more quickly and accurately. Our

#### Reduction of inventory vs. growth of production



cooperation with LOGIS helps us to develop our skills and improve ourselves. It allows us not just to reduce costs but in particular to strengthen our position as a flexible and reliable segment of a number of chains in the automotive industry."

#### **Project Schedule**



targets of the project in a very short time. We were pleasantly surprised by the results of the very first implementation stage, which lasted for two months. By its implementation, we obtained the following results:

Better knowledge of the ability to meet customer requirements and to identify the related problems in advance and with gre-



- · Improvement of overall transparency (visibility) by connection of company processes sale - production - purchase
- · Improved ability to plan requirements for
- · Improved ability to plan resources "As of completion of the first stage, we therefore commenced routine operation of the APS system. Also in the next, this time a three-

tely, which reflects it very quickly. In this way the opportunities as well as dangers are identified with maximum advance time and on the basis of the compiled plan, it's possible to adjust the activities in the company to the situation in the most advantageous way. The activities of the planning process

- Reading orders, cancellations, forecasts and other data into the planning system
- Inclusion of requirements on final products. into the plan, considering the inventory of individual semi-finished products and inventory in warehouses
- Generating production orders and requirements on material
- Optimising the resources in a longer time horizon Specification of timing of pur-
- · Creation of a ,floating' schedule of lines in a time horizon of 7 days

The results of planning (and scheduling) are recorded into ERP (company information system) and distributed as a basis for the management of a workshop, purchase.

#### Achieved improvements

The implementation of the APS in our

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# WALTER ENGINES Fly on the Wings of APS



continued from page 1

On behalf of WALTER ENGINES, Petr Kocián, Head of Logistics, was in charge of

the implementation project. "The implementation was executed in two immediately following stages, each lasting three months. The objectives of the stages were achieved completely, sometimes we even managed to achieve something more. We illustrate the course of implementation by the schedule. Changes of the quality planning process are shown by the Petr Kocián comparison of some of Head of Logistics its features (see the table



Number of delayed deliveries

marked Planning "before i2" and "with i2").

The plan became a real management tool in WALTER ENGINES. The planning of

limited capacities is under way, reflecting the availability of material and alternative sources - both internal and cooperative.

> The feasible work queue is updated for all workplaces on a daily basis. The application of the plan under operative management has a very positive effect on the parameters important for us, which are connected with order fulfilment. In addition to being able to react faster and more precisely to the demands of our customers. we have achieved an increased production flow rate of 40% with the

simultaneous optimization of inventory of material and semi-finished products. This is a result we appreciate very much similarly to the significant reduction of delays (backlogs), which we managed to reduce by approximately 80%. Just one year after completion of the

implementation, we can say that the achieved results meet our expectations. Detailed information on the achieved improvements is shown in the attached diagrams.



#### Improved deadline delivery performance

50

45

40

35

30

25

20

15

10

5

200

180

160

140

120

100

80

60

40

20

50

45

40

35

30

25

Our primary target was to improve the deadline delivery performance; we focused on this preferentially. The diagrams show the number of delayed orders, namely in relation to Rolls Royce and Ulogistics. In both diagrams, in which the period of the APS system implementation is highlighted, a noticeable change can be observed as in both cases, the original usual level of the number of delayed orders fell by approximately 80%. The third diagram further proves that the average delay has been markedly reduced, namely from 20 to 40 days down to 5 to 15 days, i.e. to less than one half. The reliability of our

**ROLLS-ROYCE PLC** 

C/o ULOGISTICS LIMITED

deadline performance is in a number of cases appreciated by our customers themselves. These assessments have changed radically too, as after the implementation of APS, we manage to move from average assessments to the best suppliers in our

#### Improved balance of production

After we managed to achieve the necessary improvement of deadline delivery performance, we focused on other parameters, which included the improvement of the production balance. In this area, we have also noticed significant improvements. The achievement of better results depends on observance of advanced discipline of production departments in particular in terms of continuous depreciation of production and strict respecting of the times of operations determined by the plan (work queues).

#### Reduction of inventory and semi-finished production

We expected that more precise management would also be reflected in an improved situation in the field of inventory. This expectation was confirmed as we have recorded a reduction of semi-finished production by approximately 30% (both in the field of engine production and the production of components to order).

These days, however, this trend can no longer be assessed because as concerns inventory, circumstances affecting their level have changed significantly. It was decided to move the manufacturing premises of our company and we had to take measures in order to prevent the effect of this move on our clients to be connected with a suspension of supplies. Therefore we proceeded to gradual forward buying, which would allow us to meet our liabilities even in the course of moving - and this can't avoid a significant increase of semifinished production, which can't be affected at all by the APS system at the moment.

#### Improved flow rate

Under the former method of order fulfilment management, we were unable to increase the production flow rate, which prevented us from achieving sales growth and more significant improvement of the profit/loss. Also from this point of view, the effects of more effective management have been proved quite convincingly. We can illustrate them for example by development of the sales per production worker where for a comparable period (1 - 9/2006 and 1 - 9/2007), we have recorded a growth of more than 40%.

#### Effect on the business, growing sales, better prices for timely supplies

In the course of this year, we have recorded a year-on-year growth of sales by almost 25% (1 - 9/2007). We can feel clearly that one of the causes is the higher delivery performance, which results in an increased number of orders from our customers. We have also noticed that our customers appreciate the supplier's reliability also by being willing to pay a better price of deliveries, reliable in terms of deadlines. We consider the said results far from final. It's a matter of gradual and consistent improvement to enforce the plan as a management tool. Whether it's the process itself, within which people gradually get used to the fact that improvisation, which used to be a common attribute of their work and without which we actually couldn't do in that part, ceases to be the way to reach targets; on the contrary, today's priority is the strict observance of the plan and quality feedback. Our current planning model is far from having used all the possibilities; thanks to improved discipline during performance, improved feedback and the improved quality of data, we have further possibilities to improve the parameters of our main company process.

As an example of what we're involved in at the moment, I'll state for example the intro-

modelling, it's been included in the company directives. Another example is order fulfilment management in consideration of the company moving as mentioned above. Formerly, this move would be pure improvisation in terms of order fulfilment; our clients would experience it strongy and we would experience the effects of it thereafter. However, now we're able to model the whole period of moving in i2 Factory Planner: we adjust calendars of resources availability according to the moving plan, we move the deadline requirements to earlier dates in cases where we identify problems (Demand Offset), we model ex-

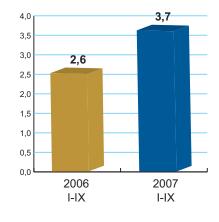
#### **Development of semi-finished production**

Production of aircraft engines

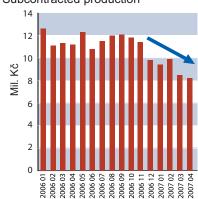


duction of new components into production (Inload). The issues there aren't simple at all, for example at the beginning, you don't have any data in the ERP but you want

#### Increased flow rate expressed in sales per production worker



to allocate resources and material and determine the possible terms of delivery. But we've practically completed this - we created a standardized process of Inload Subcontracted production



ternal resources, realize forward buying but only to the extent necessary in order to provide continuity of supplies in the critical period of moving. This proves that i2 is really an effective and practical planning tool not just for operative management, but also for long-term and strategic planning. Despite the fact that when we selected APS, we couldn't anticipate certain requirements and situations, we're successful in their planning and management using i2 without significant problems these days. As we acquired the planning system, we didn't know what a powerful tool we had bought and under what circumstances we would appreciate its services.'

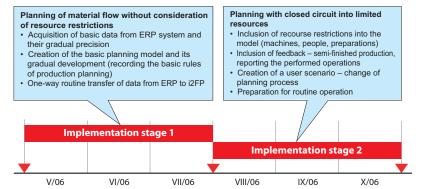
Libor Veverka, Member of the Board of Directors, says on the project:

Unsatisfactory deadline performance used to make ,an endangered species' of us in the past. It was increasingly difficult to retain our current customers, we were unsuccessful in obtaining new ones days, however, we're one of the best assessed suppliers in our category and we even have new customers (ITP, Smith Aero etc.), who in addition to the technical standard of products need high deadline delivery performance and who are even willing to pay more continued on page 8

#### **Project Schedule**

23.7.06
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Average delay of deliveries



#### Planning "before i2"

very limited perception of resources unrealistic, non-synchronized work

long, manually performed replanning with limited time effectiveness and limited scope (several sources)

minimum ability to identify future

no possibility to simulate or create

#### Planning "with i2"

transparent, detailed planning of resources work queues following synchronically

very fast planning with high comprehensiveness, possibility of fast reaction to any change of situation

high ability to identify danger timely, strong support for solution of problems

easy simulations and "what if" analyses and their archiving

LOGIS NEWS, FEBRUARY 2008

# TOS VARNSDORF Makes Use of Expansion Opportunities Thanks to its ABS Systems

Schedule of order fulfilment - traditional, insufficiently

synchronized and unoptimized order fulfilment

Schedule of order fulfilment -

synchronized and unoptimized order fulfilment

Order

TPV

Purchase

Production of components

Production of components

**Delivery time** 

Purchase

continued form page 1

Order

TPV

which had to be handled by the management system.

"Simultaneously with the achieved success. we could see that there were many more possibilities offered by the APS system than we had realized at the beginning. Therefore we decided to keep gradually developing the use of the tools of advanced planning in our business. In the course of time, the originally one-shot project of APS implementation became a project of permanent improvement developed in the long term. Also these days, i.e. ten years after installation of the APS system, we have a number of topics ahead of us, in relation to which we are going to make use of the APS system in order to solve them. If we manage to cope with them, and we believe we will succeed. it will mean further improvement of the management in our business and further increase of our competitive advantage. Even a number of years after its installation, the APS system helps us to develop our work

(2008), we have the opportunity to achieve sales in the volume of more than CZK 3 billion. This means that our sales for the last three years will approximately double. The growth of profit for the comparable period is even more striking.

"This was, of course connected with exceptional demands on the quality of management in order to cope with this opportunity - both our management and the management of our subcontractors. I can say resolutely that without a highly effectively functioning order fulfilment equipped with a system of advanced management and planning, we would not be able to make use of this growth opportunity. We would not even have reached the results of the past two vears without a highly effective management system. This result is the reason why in the course of time, we consider the investments connected with the advanced planning system investments of strategic importance. "When I talk about the APS system, I don't mean only the software from i2 Technolo-

# Thanks to its APS System

Delivery

Delivery

**Delivery time** 

within these stages used to be coordinated at a very general standard whereas as concerns detailed coordination, nobody was able to coordinate activities throughout the process due to the excessive demands of this activity. With slight overstatement, one can say then as the order entered the business, we waited for the technical department to say that they had everything ready and it was clear what it would be necessary for the purchaser - then we waited for the purchase department to say the purchase had been completed and it was possible to commence production without the danger of anything missing - and in the end, we waited for the production department to say all the components were ready and the assembly could be done. This situation is displayed in the diagram above. The planning of the whole order fulfilment through APS, however, allows us to control all the detailed activities, including their mutual relations. Hence as we have available an adequately quality planning system, which is able to effectively control all activities resting within order fulfilment, not only can we reduce unnecessary delays or reserves in this process but when we manage through the plan, we can focus on the achievement of targets, which we weren't able to influence much under the previously applied methods of management. The other diagram shows the schedule of order fulfilment when activities are coordinated (managed) by a plan (following the implementation of the APS system). It's clear directly from the picture why the application of such management tools can result in the reduction of

Hynek Vojtěch, Member of the Supervisory Board, has been engaged in the long term in the issues of management of the main company process and he participated in the development of the management system through a plan in TOS VARNSDORF.



delivery lead times."

Hynek Vojtěch Member of the Supervisory

On the issue of advanced planning and fulfilorder ment, he observes: "We've ascer-

tained that in order to be able to use the power of the implemented APS system in the most effective way for the benefit of

our business it's not enough just to change the planning, i.e. how we plan and how quality plans are the output of the planning process. It's very important also to change the management of the main company process; to actually observe and work according to the plan, the base synchronization of all the activities necessary for order fulfilment on the plan, hence learning to use the plan for actual management - management through a plan. This is not a trivial measure. In the business, order fulfilment goes across the organization structure (production, purchase department, TPV etc.) and the structure is actually broken into pieces

der fulfilment, we've designated the owner of the process and his powers. Therefore the issue of management of order fulfilment as a whole ceases to be an unowned mat-



what costs

"The higher the demand, however, the firmer the position of the producer. The resources being increasingly utilized, they prove ever



ter, which used to be connected with terms such as improvisation, volunteerism, enthusiasm or anonymity but has become a systematically developed area of business activities.

"In connection with the development of order fulfilment, the need emerges to assess the performance of this process and this isn't very easy. The fact is, a look at the above-mentioned parameters isn't static but changes depending on the market si-

"In a period of lower demand, the resour-

more intensively as a restriction to utilising other market opportunities, as a restriction of the further possible growth of sales and profits. In this situation, the producers focus on rather achievement of the maximum flow rate, which will allow making use of maximum market opportunities, namely even to the prejudice of the final figures of customer service parameters (for that matter, if the resources are heavily utilized, the producers cannot reach in particular the same pace of deliveries - delivery lead times - as before and it of course it's also more diffi-



ces aren't utilized to full capacity. Hence the function of the order fulfilment isn't seriously limited by the availability of resources, which are no serious restriction to the eventual growth of sales. In this period, the business focuses on the best possible

cult to keep up the other parameters such as the deadline delivery performance). The weakening of these parameters, however. has to be only minimum in order to prevent reduction of demand. If we want to assess the performance of order fulfilment under



delivery lead times, delivery performance under the lowest possible costs. When assessing the order fulfilment in a situation of low demand, we assess in particular what sort of fast, reliable and flexible deliveries the process enables us to achieve and at

the situation of high demand, we're actually interested in particular in the fact of what results in terms of profit/loss it allows us to achieve. But the parameters of customers service can't be ignored in this situation ei-

#### effectiveness and increase the rapidity, performance and flexibility of our supplies. "Today, the quality planning allows us to

synchronize much more effectively the in-

dividual activities necessary for order fulfilment. The feasibility of plans is higher now as the restrictions burdening the order fulfilment are now taken into account by the plans in much more comprehensive manner. The planning period has been reduced from the original quarterly to the the later monthly and the current weekly one, which allows us to react to events affecting order fulfilment in a more sensitive way. Our objective is to switch to the method of sliding planning, within which our plan will react continuously to the development of the situation.

"The system allows us to achieve a higher flow rate, a shorter continuous period and lower costs. Hence we can make use of our sources in a more effective way than ever before. Thanks to this, we are also able to achieve shorter delivery lead times and a higher deadline performance than we would have through the management methods we applied originally. In this way, our overall competitive advantage has been growing. We are able to make use of opportunities we would not have had in the past. With the added value per employee amounting to approximately CZK 1.3 million, we are slowly arriving among the successful businesses operating in our field in the environment of developed economies.

Our current demand shows that this year

gies, but also the way it is implemented under the conditions of our business, how it's used within the planning and management process. Our APS system helps us reach results, which just a few years ago would have been a dream rather than a reality for us. The basis of success is actually the in-

	Privatisation (1995)	Turn of millennium	Yesterday (2006)	Today (2007)	Tomorrow (2008)
Planning period	1 quarter	1 month	1 week	1 week	1 week
Number of employees	920	510	520	560	600
Sales	400 mil.	1.000 mil.	1.800 mil.	2.200 mil.	>3.000 mil.
Profit	-100 mil.	+	+120 mil.	+350 mil.	~500 mil.

creased effectiveness of the management of order fulfilment. I've provided specific results we've achieved. If I had to explain simply what the change of the process is, I would have to say the fundamental change is that all activities connected with order fulfilment are managed from one place in detail and on an optimum basis. The order fulfilment goes through various stages: from TPV, through purchase, production of components and finally to assembly. Activity

thereby. Order fulfilment isn't usually defined in businesses, it doesn't have its own manager (the owner of the process) equipped with adequate powers, a manager responsible for the usual business and consistent development of this process. Hence in the businesses, there is nobody actually authorized and liable for the development of this key company process. Together with LOGIS, we've prepared a solution, which we have been launching. We've defined or-

**WWW.LOGIS.CZ** 

# Speed, reliability and flexibility of the deliveries of Třinecké železárny due to APS technologies

TŘINECKÉ ŽELEZÁRNY, a.s. produce more than one third of the total steel production in the Czech Republic. It is a metallurgic company with an enclosed metallurgic production cycle, the main production programme of which is formed of long rolled products. In 2005 and 2006 Třinecké železárny implemented a project of advanced planning of metallurgic production. The objectives of the project were defined in such a manner that the project results support the strategy of the Company to increase the proportion of production with a higher added value. This extremely demanding project was implemented successfully. Its extraordinary results are supported not just by the prestigious awards obtained (see Page 8) but especially by the particular improvements which have been achieved as a result of the system operation as early as the first half of the year after completion of implementation (read on Page 7).



#### **OBJECTIVES OF THE PROJECT**

Look back at the project beginnings (august 2005)

In connection with commencement of the project of advanced planning of metallurgical production, Třinecké železárny released press news in August 2005. In order to explain the expectations of Třinecké železárny in time they entered the project to our readers, we look back at the project beginnings and we include the opening extract of the press news where we quote Jan Lasota, member of the Board of Directors and sponsor of the project.

#### WHAT IS THE GOAL OF THE PROJECT

Through achievement of high operational excellence to improvement of complex customer service

We're experiencing ever-growing pressure applied to steelmaking companies to provide their customers with high-quality products at still greater promptness, reliability and flexibility.

What was enough yesterday, is on the verge of

being too little today and will not suffice tomorrow. A great deal has been done in the department of quality enhancement and we have a lot to be proud of. Now, we've decided to concentrate more intensively on how the needs of our clients may be accommodated by providing them with attractive and reliable delivery dates.

And it's here that the company still leaves a lot to be desired.

We can hardly expectto be prompt and reliable with regard to our customers without mak-

ing promptitude and reliability the essential attributes upon which the corporate processes within the company rest. And what we must not forget in so doing is that improvement in this domain must

be achieved with high efficiency—in other words, high speed, reliability and flexibility must not cost us 'all the funds'. We must learn to achieve it at low costs. We know this is a formidably difficult task that, in a way, reminds me of the attempt of major automotive companies to develop engines displaying the highest possible power with the lowest possible consumption. Similarly, we have to tune our company-wide process of order fulfillment in a manner as to ensure that it

yields high performance while keeping the costs low. This is the goal of the project we're about to launch.

When implementing the project we won't dispense with highly efficient management methods. Advanced planning methods will have a key role to play as well as the ability on our part to employ the technologies in the management system introduced at our plant. How much importance we ascribe to the project is clearly shown by our choice of the best avail-

able technologies and suppliers. We believe that the advanced planning project is an important step that will lead to further improvements in the competitiveness of our company results in



performing our orders. As a result, we will be able to perform in a faster, more reliable manner while retaining a better overview of the process than is the case now.

## WHAT WE WILL IMPROVE THROUGH THIS PROJECT

Through the high-quality planning, we shall increase the management effectiveness

Order performance is a rather complex and complicated process at our plant. A number of time-dependent effects and limitations factor in it. The existing management tools did not make

coke plant

sinter plant

BOF

it possible for us to reflect these limitations to the necessary extent when making decisions on what operations should be done at the individual workstations and when. Our existing tools did not possess the capacity to evaluate the state of affairs in a short time and determine the optimal procedure translated into a plan defining who shall do what and when. We were often forced to make decisions without having the opportunity to provide support for the decisions in the form of comprehensive and amply detailed evaluation of all factors, and, similarly, we were not always able to foresee the effects that the

PROJECT SCOPE - production flow coverage

i2 Factory Planner; i2 Material Allocator

reversing

decision would have upon each of the links in the logistics chain.

The solution will allow us to reveal pending threats in time and adopt measures to eliminate them. We're convinced that a more precise and sensitive management resting upon optimised plans and schedules will help us to yield favourable conditions to achieve better operational results in performing our orders. As a result, we will be able to perform in a faster, more reliable manner while retaining a better overview of the process than is the case now.

medium section

wire rod mill

billet mill

Kladno

finalization

heat

treatment

#### FEATURES OF THE SOLUTION

We shall explain the features of the solution through the information on requirements made on the planning process, through the inclusion of basic information on the main solution modules and through the information on the scope of solution in relation to the coverage of the whole production flow with the solution. More detailed information is available in LOGIS News IV/2007.

## REQUIREMENTS ON THE PLANNING PROCESS

The requirements on the potential, which has to be supported by software within the planning and scheduling process, were expressed at the very beginning of the project. In particular the following requirements were concerned:

 Ability to produce a quality plan in a short time and use it for production management

- Ability to develop a quality schedule for steel plant in a short time and apply it to the production management
- Ability to re-plan and optimally adapt to situation changes situation in a short time
- 4. Ability to monitor the course of orders fulfillment
- To identify a potential problem in advance (delay of orders, overloaded capacities, missing material etc.)
- To provide information about status of order planning over all resources

#### SOLUTION

In order to cover the above-mentioned requirements on the planning process, the solution consists of three basic modules, which are: Metallurgical Production Planning, Material Allocation and Steel Plant Scheduling.

# A. Metallurgic production planning

The planning module allows to create a plan of metallurgic production. When creating the plan, one considers for example the following criteria:

- required due date and volume of orders
- production capacity constraints
- use of the key production capacities should be maximized
- production of half-finished items should be minimized
- order lead times should be
- financial effectiveness of the production should be increased

decreased

i2 Factory Planner is used as the software module for

Metallurgic Production Planning.

#### B. Material Allocation

The purpose of the module is to allocate material for the planned orders. The material allocation process takes into account a number of criteria, for example:

- Search for optimum allocation of material within the technological procedure – prefered semifinished product, alternative semi-finished product
- Level of the semi-finished product completion
- Age of material
- Place of storage
- Level of compliance (perfect / imperfect)

#### LOGIS Caster Scheduler

CCM

ingot teeming

ladle

metallurgy

IR-UT

- preferred quality and similarities
- Criteria to be defined by customers
   i2 Material Allocator was chosen as the
- software module for the Material Allocation process.

#### C. Steel Plant Scheduling

The module is intended for generation of a detailed schedule of the steel plant. When generating the schedule, the following tasks are performed amondst others:

- Group orders to heats group heats with similar qualities
- Eventually use alternative qualities and alternative technological procedures to enhance production efficiency
- Consider order priority and due-date to guarantee high delivery performance

   OGIS Caster Scheduler is used as the

**LOGIS Caster Scheduler** is used as the software module for Steel Plant Scheduling proces.



#### TŘINECKÉ ŽELEZÁRNY - Project Schedule Installation of technologies User training Analysis of key processes Development of the scope of Reflecting production capacities in the plan Allocation of stock based on assessment of material attributes reloping a model of material flow of fined products iic model of planning duction ting the steel plant schedule solution Definition of requirements on the data Assessment of data readiness Reaching a feasible plan of production Setting a realistic time of delivery Transfer of the planning system into the routine operation BR1 BR4 15 12 13 14 16 Production planning Reflecting the required recrinological russ Fetching the complete input data for the steel plant scheduling Harmonization of the plan of metallurgical production with the steel plant schedule Transfer of the solution of steel plant scheduling into metallurgical operation Steel plant scheduling

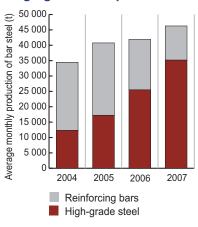
LOGIS NEWS, FEBRUARY 2008

# Improvement of the delivery performance and operational excellence by use of the APS system in TŘINECKÉ ŽELEZÁRNY

#### **Bohuslav Sikora, Production Manager**

The first half of 2007 was an initial period of routine operation for the APS system; it was a phase of debugging and stabilization of the plan. The second half of the year, which we consider as a period of full-scope operation was running with the

#### Growth of the proportion of the high-grade steel production



goal to optimize the whole solution. Needless to say, we were interested to see whether our presumptions and expectations with which we implemented the APS project would become true, and whether it was possible to observe the changes already within several months.

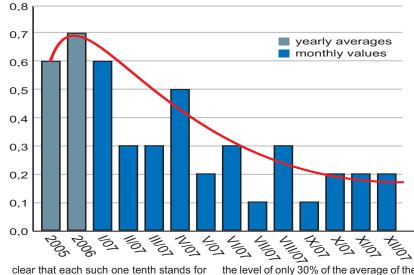
#### **GROWTH OF COMPLEXITY**

Before I mention several parameters documenting the improvements achieved thanks to operation of our APS system. I find it important to mention a few facts, especially some trends typical for our company in recent years. The first is that the total volume of orders is increasing, however the average volume of each order is decreasing - thus the quantity of various orders for smaller volumes increases and thereby the complexity and difficulty also increases. The second trend is that the proportion of high-grade steel production on the total production is growing significantly. Thus the proportion of technologically more demanding production is increasing. Both the trends mentioned above mean an increase of the complexity in controlling the job order implementation process. If we had continued to apply our previous system in this situation, such changes of the product mix would inevitably have reflected in worsening of the reliability of our deliveries from the point of view of their lateness and lower production efficiency. This fact can be also seen in the diagrams, which show that prior to implementation of the APS system, both the due-date reliability of deliveries (see the comparison of the average volume of late deliveries) and the production efficiency was worsening year-on-year; the worsening of the production efficiency is shown in the yearly worsening of the sequential rate of heats at the steel plant.

#### **IMPROVEMENT OF THE OPERATIONAL EXCELLENCE**

The parameter of the heat seguential rate is one of the key indicators which reflect the level of our operational excellence with which we are able to guarantee our delivery performance. In other words, this means whether we pay a lot for our improved delivery performance or we can accomplish it without increase of our costs. Reducing the parameter of the sequential rate has a positive impact on the utilization of the production plant - the steel continuous caster - and on the increase of the economical efficiency of the steel production. In the diagram we can see that also in this case the progress during the year shows a clear trend of improvement when the values at the end of 2007 are lower by 70% on average, compared to the previous year. Since each tenth of the reduction of this value means many tons of steel for which the steel plant work utilization percentage is increased, it is

#### Difference in the sequential rate of continuous casting heat



clear that each such one tenth stands for a significant financial value in savings of the operational costs. Thus the financial value would be high enough that if this was to be the only benefit of the project its ROI would be approximately 2 years.

#### **IMPROVEMENT OF DUE DATE PERFORMANCE**

Improvement of the due date performance was one of the main objectives of the APS project. For illustration we will use a diagram showing the volume of deliveries that were delayed by us in individual months. The diagram shows a significant improvement in the key rolling mill: while the average volume of deliveries delayed in 2006 was 3,400 tons, the progress during this year shows a clear trend of improvement when the values at the end of the year are already at the level of less than half the average of the previous vear. Note: we were even well on the way to achieve, by the end of 2007, values on

Due to our APS system we are able to specify

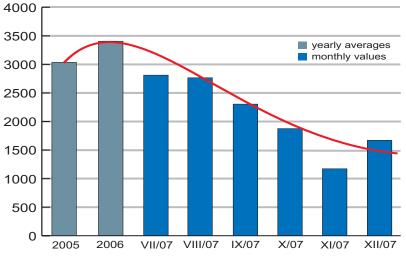
comprehensible instructions on a daily basis, the

fulfillment of which results in high operating efficiency

of the process of fulfillment of orders in production.

the level of only 30% of the average of the previous year, but the failure of our blast furnace made the situation rather complicated for us, which adversely influenced the December values. We consider the development of the above mentioned parameters as a convincing proof of the efficiency of our work with the APS system. It must be clear even to non-specialists that such values cannot be an accidental phenomenon, which could be explained as a result of statistical deviation. We are glad that our delivery performance in times of increasing complexity the use of APS system has not decreased but we also have achieved very interesting improvements. We also consider it important that the economy is improving; in other words we can say that improvement of customer satisfaction is not accomplished at the cost of increasing costs. On the contrary the costs are decreasing. The accomplished improvements are a result of the growing efficiency of order fulfillment.

### Default orders at the end of the month



# **APS Project from the Perspective of Production Manager**

The project coordinator and the head of the project team on behalf of Třinecké železárny was Mr. Bohuslav Sikora, who, in addition to his obligations related to the project, was performing also his basic job of a manager of the operative production management for the whole period of time. We asked Mr. Sikora a few questions on the project theme.

#### 1. How was the idea to use APS technology in our company born? What preceded this project?

We belong to companies that work hard on themselves. We want to get a stronger position on the markets, which are more demanding in terms of supply qualification. Hence we develop a strategy that simply cannot do without investments into technologies, management or people.

The idea of increasing the supply qualification through the use of results achieved by improvement of the operation excellence is very close to us. If we manage to react fluently to changes of requirements by fast finding of the best solution, then we may supply our products to our ever more demanding customers faster, more reliably, flexibly and also for the good price. The high supply qualification, however, must not be connected with growth of costs, and this may be achieved only by those, who develop the ability to manage their process of order realization more effectively than their rivals.

It naturally occurs to you that you have efficient and skilled employees so why to spend money and buy software and consultations, why not to try it on your own. The fact is that we know the best what limits we encounter during the realization of orders and what is their importance, we dispose of **Bohuslav Sikora** a quite strong information system, it would be certainly nice Production Manager to have the relevant software only for ourselves and be able to outrun our competitors. However, the advanced planning

technologies can not be developed through the same developing tools as usual transaction corporate applications. Also the required skills of developers are different. You encounter words like optimisation, constraint programming and likewise and you do not know, which way to take. In the past, for example a number of teams, both internal and external ones, tried to solve the problem of the steel works schedule setting; none of the attempts was successful. We realized that what we needed was to feature the process, not the ability to set up the software of APS class. And as we arrived at the conclusion that it was impossible to reach any more significant improvements of the process of order fulfilment without application of APS/SCM software, it was clear that we could not do without investments into this area. For that matter, so far I do not know anyone, who would be able to achieve anything valuable in this field quite independently.

#### 2. How was the solution selected?

Our effort for improvement of the system of metallurgical production management through technologies of advances planning and scheduling dates a number of years back. As early as at the turn of millennium, we decided to implement such a project as we were offered the implementation of SAP APO as a part of migration to SAP R/3. It was supposed to be a pilot project,

the offer was very advantageous also in terms of price. However, we did not manage to implement the project. We had been working hard for approx. 4 year before we came to the conclusion that it was not possible to complete this project in such an extent. The combination of qualities of implemented software and the abilities of supplier was far from sufficient to achieve a result usable for us.

We were frankly trying hard the whole time. We devoted really considerable effort to our first at-

tempt. If you are concerned with something and the things are not going well, you try to find out why. Therefore we visited other steel works in the whole Europe to find out, where they had got, how they

had reached that and where we were making mistakes. We learnt in this way that the solution we had "dreamt about", the integrated solution of planning and scheduling of metallurgical production that would allow us to compile plans and schedules of such quality that we would be able to take advantage of them within the real management of the company, is far from being a usual software even of the strongest steel works.

At some places they have a certain support of scheduling, in

particular as concerns final mills, at others, they have a more detailed planning process, but we could not find a fully integrated planning and scheduling as a real tool of effective management, of which we would say "ves. that's it, we'll try this too", actually with

When we terminated the APO project as a not feasible, it did not mean we gave up our vision of

improving the operation excellence through technologies of advanced planning and scheduling. We organized a new tender, went through new reference visits and our selection this time was strictly subject to the highest quality and certainty of the result. We were looking for a supplier where we could see physical results, where we would feel that realization our requirements would be connected with the least possible level of improvisation for him.

3. How was the assignment of such a complex project developed?

With the experience from the first attempt, we were able, together with the implementation supplier, to define the assignment as early as at the project commencement, with great accuracy of the target requirements. Even though we had actually experienced an unsuccessful project, we did not allow to forgive our demands for this reason. We were preparing the assignment together with our supplier. The assignment prepared in this way then became a part of the contract and I believe it was of a good quality - none of its essential

points had to be revised in the course of the proiect. Also thanks to this fact, our relationships with the supplier could be transparent, which certainly positively affected the success of the project.

The assignment was corrected and specified later

on during implementation, but definitely not in its essential features, rather certain modifications and amendments to the assignment were concerned. The supplier of the

solution was very open to changes, which allowed us to achieve really very valuable results.

#### 4. What would you mention on the project schedule (timetable)?

It is exceptionally demanding to prepare a quality schedule of such a project. If the schedule is too optimistic, people are not successful in meeting the



Bohuslav Sikora

provisional objectives. They know that even if they work very hard, they will still not manage to keep the terms. In such a situation, the team performance is not optimal. This will be necessarily reflected in the achieved results. The similar danger rests in a too loose schedule. The project becomes not only more expensive as the time necessary for intensive support by the supplier is getting longer, but when it is obvious that there is "enough time" for meeting the tasks, a problem emerges how to heat the team up to the working temperature and keep it, how to reach permanently

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# **ŽĎAS Increases Operating Effectiveness**by application of APS technologies

continued from page 2

sist for example on the continuous reporting of operations and we explain to the people how important is current information for the company management.

We asked the General Manager, Ing. Miroslav Šabart, to provide us with a short sum-

mary of the APS project: "Using the system APS i2 Factory Planner, we're able to cope better with order fulfilment as their volume grows without impairing our deadline delivery performance. We're able to work more effectively and react more sensitively to changes of situation by rapidly finding the optimum solution. i2 Factory Planner is a tool, which allows us to permanently improve the parameters

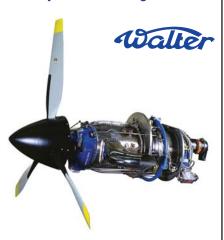
of our own operating effectiveness and to rely on the achieved results when improving the satisfaction of our customers. The APS i2 Factory Planner system is a very stable one. There are no problems with the reliability of its operation."



# WALTER ENGINES Fly on the Wings of APS

continued from page 4

for higher performance. In terms of the quality and effectiveness of management of the main company process, I see a great difference between our business ,before' and ,after' the implementation of APS i2 Factory Planner." As concerns assessment of the suppliers, Vice-chairman of the Board of Directors, Ing. Václav Havlan, takes the floor again: "i2 Factory Planner from i2 Technologies is certainly an excellent product of world standard but without the knowledge and experience of the supplier, it wouldn't have been possible to achieve the said project results. These skills are far from being limited to the knowledge of the APS system, for that matter, we consider the good knowledge of one's own production to be a matter of course. What we particularly appreciate with LOGIS is the fact that this company manages to combine the business targets of its clients with the services and



technologies it provides and the level of sovereignty, with which it takes bearings in a specific business situation."

# LOGIS use highest-rating APS/SCM technology

AMR Research is an independent expert research company. Every year, AMR publish 25 scales of the most valuable SCM projects (TOP 25 Supply Chain). Latest results imply that the most frequently used software technologies are products of i2 Technologies. First 14 companies of 15 evaluated as the best of 2006 are i2 Technologies customers.

source: AMR, i2 Technologies



# **APS Project from the Perspective of Production Manager**

continued from page

good team performance.

As concerns our schedule, it was set up quite optimistically. This does not concern the initial stages of the project that much, in particular BR1 and BR2. In the next stages of the project, the optimism of time assumptions started to show up, mostly in the final stages BR4 and BR5. If somebody plans to follow us with a similar project, I recommend not to stress the time to the supplier too much but rather focus to the results. Remember that this is a type of project, where you will probably sweat more than your supplier. And those suppliers who will tell you something else either do not know what they are talking about or their solution is probably not the right one.

# 5. What are the "critical aspects" of such projects in your opinion?

I have mentioned a few of them above. What I consider worth mentioning is the difference between implementation of the APS/SCM project in comparison with, for example, ERP implementation. If you are selecting an ERP system today, you will probably find several products that may suit you and in addition. most of these products will be connected with several eventual suppliers. The execution of a successful implementation is not considered anything exceptional either. Many suppliers are today able to deliver ERP and hence the companies may concentrate more on looking for the lowest quotation. In the world of advanced planning technologies, it is different. I believe such a project may not be implemented successfully unless the software you wish to implement is not excellent and unless your supplier has a really strong and experienced team. Suppliers, who do not have enough experience, easily offer, in good

faith, too short terms of implementation and a too low work consumption and hence also the price of implementation. For the one selecting the solution, the decision-making is very difficult as the vision of low price and fast result or even low work demand is naturally very tempting. In relation to this, the famous "I am not that rich to afford to buy cheap things" comes back to me — I believe that this saying absolutely fit to projects of this type. The defence of selection a such an offer requires not only good orientation within the problem by also a certain level of personal courage. Perhaps this is why there are still so few really successful APS projects.

When I think about our project, I consider as the most important fact that we managed to establish a real partnership with our supplier. We were demanding on each other but in the same time, we sympathized with each other. It was clear to both sides that the highest value we want to achieve is the result of the project. When we were not doing well on our side, the supplier tried to help us and we were also willing to look for alternative ways to the objective if the direction we had formally followed seemed to be hardly feasible for the supplier. Even under a strong pressure of deadlines and with very hard work of people in the teams, we created an environment of great trust. One does not manage this at all times and I think it very positively affected the very successful result of the project.

6. What does your cooperation with the supplier look like following the routine operation commencement?

I am glad to say that we were lucky when we were selecting the supplier. In the course of the project, we did not mutually excused

anything with the supplier but it was clear on both sides that everything was subject to one thing – successful result of the project. I very appreciate the fact that it was clearly visible how important it was for the supplier to fulfil the assignment in its full extent and complete all the agreed functions. Our supplier never misused any specific situation, any of our hesitations concerning the project in order to make his life simpler.

Even now, after go-live, our cooperation is still very good. The supplier operatively, promptly and in high quality reacts to all non-standards conditions emerged in the course of the operation. He also heads the problems. Simultaneously with adjustment and fixing of functions, we started a process of the solution improvement in terms of implementing the newly emerging requirements initiated by further experience from daily usage of the solution.

## 7. How is the change in planning before the project and after it shown?

Our today's planning allows us to react to development of requirements much more sensitively and in a more complex way than before. Today, we confirm the terms of delivery, which we formally confirm for months, for a specific day. All orders entering the system are verified in terms of their time feasibility. The whole process of order fulfilment is under continuous control and we react to any of its deviations by an update of the plan and schedule. Hence every day, we are able to determine clear instructions, the meeting of which result in high operation excellence of the process of order fulfilment in the production.

These days, the stage of adjustment and improving the quality of the whole solution is

carried out. The initiator of the improvement process is the specific knowledge from the practical use of the solution and requirements of internal customers of subsequent processes. In the same time, the results of the plan are delivered to the ERP system and there they are available to a wide spectrum of users in the whole company.

8. Is your opinion of APS technologies and the option or suitability of their application with steel producers different in anything if you compare your original ideas and expectations with the final experience?

am glad that our second project confirmed that the technology of advanced planning really may be an exceptionally effective tool. However, as with any tool, the use of its potential depends on the people working with the tool. It would be a mistake to anticipate the APS/SCM technologies are powerful to such an extent that they can do without people. Hence if you want to have better results in the filed of operation excellence and better standard of customer services, only the "magical" technologies will not be enough. You cannot do without people who understand the objective and accept reaching of better results as their task. Without such devoted people, who are willing to accept changes in the work and who together change the relevant corporate processes, you will not solve anything. This does not reduce the importance of APS technologies and their suppliers and implementators in my eyes, it's rather the other way round. I can see that good APS technology may definitely be a very good, strong and effective tool, however, everyone has to realize that success is far from being only a matter of quality of these technologies.

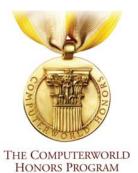
# APS/SCM Alliance of LOGIS and IBM brings the success

Projects realised by IBM and LOGIS alliance cooperation declare very well results. This issue of LOGIS News introduces the projects in TŘINECKÉ ŽELEZÁRNY and ŽĎAS.



#### Prestigious honors of project

Project "Advanced Planning of Metallurgic Production in TRINECKE ZELEZARNY" has became not only the IT Project of year 2006 but was nominated to the world competition "The Computerworld Honors Program" honored the best IT projects worldwide. We are pleased, that this product comes through the international competition very well. The project, as only one European project in category "Manufacturing", was recognized as a "Laureate" (Washington, D.C., 4th June 2007).



# LOGIS NEWS

Occasional news edited by company LOGIS, focused on Advanced Planning Technologies and their practical application at industrial

LOGIS is a supplier of expertise services and information technologies focused on improving of business management and competitiveness. The deliveries are executed in the form of projects aiming at improvement of management effectiveness and development of business success at the customers' businesses.

Within the framework of their solutions, LOGIS applies advanced managing and planning methods and procedures (so-called best practices), including high-performance information technologies in the field of Supply Chain Management (SCM) and Advanced Planning and Scheduling (APS). The ERP category systems are also applied to support the goal achievement. The used technologies are either proprietary or from i2 Technologies (LOGIS is an authorized distributor of i2). The company has over 60 clients in more then 25 countries worldwide.





# **APS Projects – Driving Force of Business Effectiveness Growth**

continued from page

APS/SCM projects have proved a high added value in a number of businesses combined with an attractive investment return. And this is a strong advantage.

The good news is that we no longer have to look abroad, to the environment of top world economies, to find examples of successful APS implementations. We are pleased that, together with a number of our clients, we have proved that high work effectiveness is not just a matter of businesses from the USA, Japan or Western Europe but that also our businesses, businesses of the Central European region working in an environment still coping with the burden of the past, are able, through improvement of managerial effectiveness, to reach results, which take them to the leading positions in their field.

Ten years of effort in the field of advanced planning have not only brought success to our clients but we have gone a long way ourselves in terms of the ability and effectiveness of realization of APS technology implementation. We have built a strong expert team, gained a great deal of experience, developed effective methods and procedures, coped with the necessary technologies, mastered the thinking

aimed at increased performance of the business and we count successfully implemented projects in dozens. Last year, we were very pleased with the recognition we obtained on an international level when the project of APS implementation in Třinecké železárny not only obtained the title of IT Project of the Year in the Czech Republic but was the only European project in the manufacturing category to be granted the title of Laureate in the competition titled Computerworld Honors Program. Our projects regularly bring significant benefit to our clients. We have devoted this issue almost exclusively to articles, which bring information on some of the projects implemented by LOGIS. You can find opinions of the leading personalities of our business sphere and top business managers, information on the course of the projects including the schedule, information on the achieved results and many other interesting facts. We express our thanks to our clients for their willingness to share their own experience as well as opinions with you, our readers, and for their willingness to publish certain information related to these interesting projects.

Dalibor Konvička, General Manager, LOGIS

