



Case Study



BAST s.r.o.

APS Project Improves Corporate Resource
Control and Planning Quality

LOGIS
PLANNING FOR EFFICIENCY



APS Project Improves Corporate Resource Management and Planning



BAST s.r.o., a company processing and producing sheetmetal components, weldments and casings for rail vehicles carried out Advanced Planning and Scheduling (APS) implementation project in 2010. The project focused not only on delivery and implementation of information technologies but also on introduction of process changes was facilitated by LOGIS as a partner. After a year and a half of routine operation of JDA Factory Planner planning system BAST harvest the fruits of new planning and management opportunities in the form of remarkable improvement of operational efficiency and customer service.

Founded on green field in Moravské Budějovice in 1991, BAST s.r.o. manufactures components predominantly for railway industry. Apart from high requirements for production quality, specific for this sector, the environment of deliveries for railway industry is characterized by unconditional necessity to cover the production by wide range of certificates relating to materials, manufacturing processes and equipment as well as certificates applying to particular members of the production staff.

Ing. Miroslav Bazala, Executive Director and co-owner of the company regards this specific as one of the causes of relatively low capability to meet the delivery dates faced by the company in 2009 and 2010: "In recent years we could see a trend of slightly decreasing capability of BAST to meet the delivery dates. Before the project commen-

decided to thoroughly analyze the causes of this unsatisfactory condition. We identified that the most frequent point of origin of the delays was our welding shop. It was not because its capacity was insufficient, the problem was rooted rather in lack of our ability to reflect all limitations which had to be reflected in planning -- such as material, welding set, welder and welding fixture availability taking into account the particular authorizations of the different workers to make components for the customer in question. Since the planning tool used by us at that time obviously could not take account of all the aforementioned limitations its output was unfeasible at the workshop and the plan had to be modified at site by the foreman. This practice resulted in a number of delays which could not be made up for by us in the subsequent production stages.

"If I am to compare the situation before the project and now, then I have to admit we were not planning before."

*Miroslav Bazala,
Executive Director, BAST*

we were seeking for a partner for a project of this type, we were addressed by the representatives of LOGIS specializing in advanced production planning projects."

AN APS NOT LIKE ONE ANOTHER

Ing. Miroslav Bazala talks about the beginning of 2010 when the investment in this project was considered: "Because we have been ranking among successful suppliers of large groups such as SIEMENS, ALSTOM or BOMBARDIER for many years it is imperative to us to continuously improve the efficiency of corporate process control in order to maintain this position. For the last five years we have tried lots of tools and systems characterized as APS by their providers. Unfortunately, we have always arrived at an opinion that the tools were not affording higher benefit than our company-wide ERP system. We acted as a kind of co-investor in the development and were tired by perpetual notices saying that some or other missing functionality is about to be added or put into operation. Nevertheless, knowing that the company-wide ERP systems were unable to efficiently support the order execution planning and control process we kept searching for a solution fit for our company."

"In February 2010 we met the people from LOGIS for the first time and I have to state that their references and experience in the execution of advanced production planning implementation projects attracted our interest.

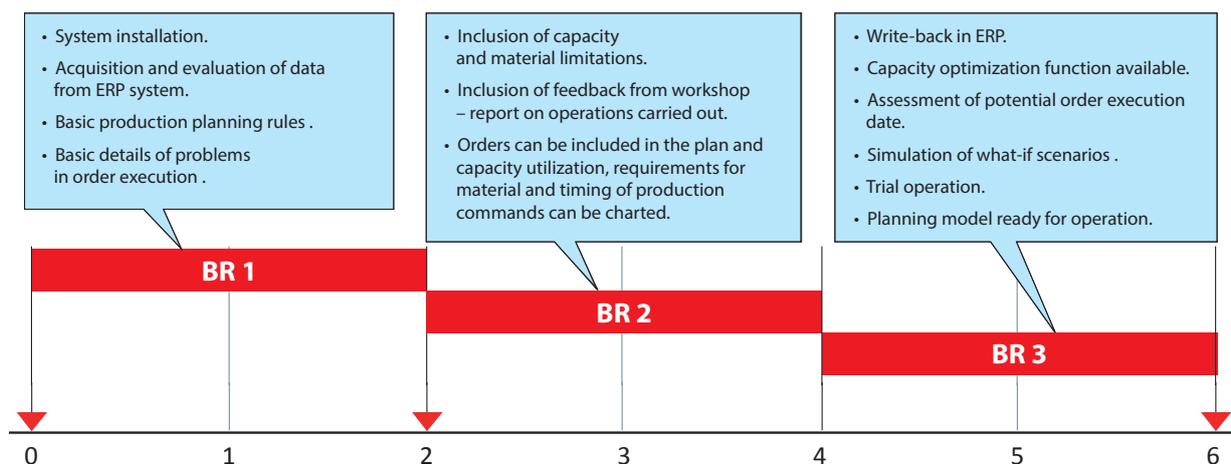


ment we were unable to provide more than a quarter of our deliverables within the date promised by us to our customers. This trend started to affect our relations with key accounts and in some cases we found themselves in a danger of losing them which had to be prevented by us. For that reason we

We have known for some time that tools of so-called Advanced Planning and Scheduling (APS) category, which were capable of reflecting the limitations above thereby creating a feasible and optimized plan to secure a timely meeting of our delivery dates, were available at the market. Just in time, when



Project Schedule



In the following two months when discussions were held our interest was transformed into a conviction of LOGIS abilities to bring a significant and long-term benefit to our company. Although the discussions took relatively a short time – we embarked on the project as early as in April – it was not easy to make the decision to invest funds substantially exceeding the value of our “APS” projects implemented up to that time. However, in hindsight, I can state it was a good decision; now, only a year and a half after the implementation completion, I reckon the investment has paid back.”

As concerns the project execution Ing. Bazala adds: “Based on our experience in the execution of projects of similar nature we regarded ourselves as a proficient customer which could complete the APS project within 3 - 4 months. From the very beginning LOGIS proposed that the project should be timed for 6 months which seemed too much to us.

It is to be pointed out that the elaborated implementation guidelines followed under LOGIS leadership required us to work hard for 6 months not only on the deployment of new technology but also on changes in approach to the planning process, data discipline and staff discipline in entire production/logistics chain. The fact we succeeded in completing the project in the agreed scope, by the agreed date and at the fixed price – which is not commonplace in IT environment – is looked upon me as our great satisfaction and appreciation of LOGIS value.”

DETAILED HUMAN RESOURCE PLANNING: A SPECIFIC OF PLANNING AT BAST

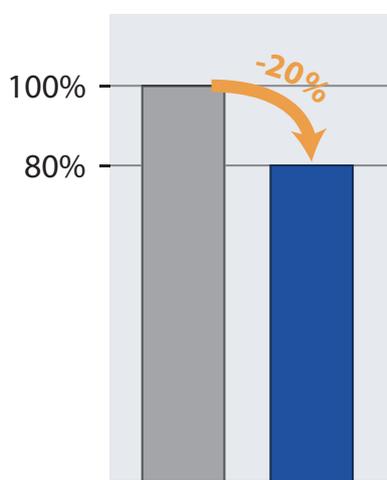
Each advanced planning and scheduling (APS) implementation project is unique because the planning model developed for a specific company is original in substance, although some companies can be similar in production nature and technique. This was also the case of the project execution at BAST.

“One of the key planning model objectives was to properly cover the human resource planning in an application and extent far exceeding all other planning models for our customers”, says Ing. Jiří Podzemný, Senior Consultant and Project Leader of LOGIS to describe the status at the project outset. “The customer’s requirements included dynamic allocation of human resource (operators) capacities to specific operations performed for the customers from railway industry. The planning algorithm was more difficult than normally due to the necessity

to reflect the qualification (welder’s qualifications) of each operator. This solution was to replace the former system of allocating specific operators to the complete order which was very rough and did not enable accurate capacity planning as to the selected specialists. Following numerous discussions and changes in the process setting and planning tool parameters relating particularly to functionality of alternative and simultaneous resources we arrived at a solution meeting another BAST requirement: it does not call for substantial increase in the labour content of source data acquisition and updating. The planning system thus ensures that any operation is included in the plan based on selection of appropriate operator who is properly qualified and available in the respective time period and, moreover, also the priorities for operators’ use for certain operations are taken into account. The capacity optimization algorithm can reallocate the operation due to overloading to another operator who is also adequately qualified.”

Another specific feature of the planning model at BAST is the ability of JDA Factory Planner system functionality to contribute to optimum preparation of data for both bar and flat metallurgical material splitting. The tool enables to pick up splitting operations with the same materials from different orders for selected period in advance. This is then used to prepare flame cutting programmes which are respected by the planning system in the following planning stages and based on which work queues for laser and saws are prepared.

Inventory reduction



ADVANCED PLANNING NOT ONLY FOR PLANNERS

For all the time, the project was focused on the implementation of information technology and, more importantly, execution of changes associated with the management process in entire internal sales-manufacture-purchase chain. That APS would not be a mere plaything for planners was indicated by

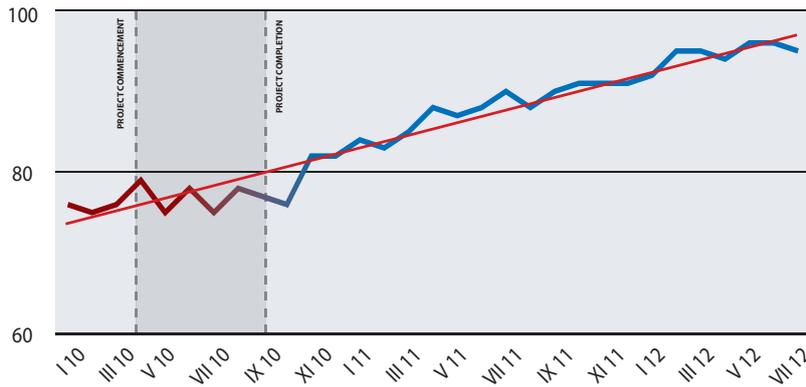
be almost fully guaranteed by us) asking for an earlier date. Then this is a task for the planning team by which any changes in and impacts on other scheduled orders are assessed. This assessment can be made by the planning team using various what-if simulations or priorities immediately reflected in entire order network thereby creating again a real basis for decision making on the promise of an earlier date. We want to provide this

REALIBALE DATA, EFFICIENT CHANGE INITIATION

“Talking only about countless positives and benefits across different departments it should also be noted that both during the project implementation and after the project completion we have been subject to increased demands for data recording in our information system in terms of updating, consistence and quality. And this applies to all, and not only IT staff”, says Ing. Bazala. “It is a never-ending work for should we allow any impairment of data discipline this would lead very quickly to impaired planning quality and bear on the order execution control process. Nevertheless the additional time spent by more careful data acquisition and updating is much more shorter than the time which had to be spent by us for tackling the operational issues, searching for causes of problems and their extinguishing at the last moment. If comparing the situation before the project and now, I can say we were not planning before.

“Before the implementation we had been notified by LOGIS personnel of the necessity to set up and secure an efficient mechanism of initiation and acceptance of changes required to provide high-quality planning inputs. Even if the APS implementation has the form of a teamwork quite often there are situations requiring a directive decision and assignment of clear-cut tasks to the different persons. A proper fulfilment of the tasks is then a precondition for the achievement of the project objectives. For me as a co-owner of the company the project success was among top priorities. Due to the facts outlined above I acted also as a Project Manager on the customer’s part in order to ensure a smooth acceptance of the tasks by the different persons, as far as possible. I nominated a new Production Manager before the implementation, after two months of implementation the Planning Manager was replaced and after six months

Impact of APS technology application on Due Date Performance



the staffing of implementation team which was made up of persons from all the company departments. Thanks to its ability to interlink all the sales-manufacture-purchase value chain the JDA Factory Planner tool is benefited from also by, for instance, the members of purchasing or sales staff.

“The purchasing clerks have access to information clearly showing what is to be purchased, accelerated, postponed or cancelled based on the needs of sales and production in real time and need not, as usually in past, foretell what and when is to be made and wait until a missing part is identified during assembly. This not only reduced the amount of materials in stock but also eliminated the stress and need of daily operational meetings.”

The capability of JDA Factory Planner tool to swiftly reschedule all the order network based on a new requirement or change allows the sales staff efficiently communicate with the customers. The sales staff can virtually instantly promise to the customer a delivery date which can be met using the available materials and capacities with respect to the orders from customers already included in the plan or in progress, purchase orders made and delivery dates of material items, if relevant. “The date is, of course, not always accepted by the customer (though it could

option also to the sales staff in order to enable them to directly incorporate the delivery date required by the customer in the plan and give a prompt response to the customer. Anyway, we have got rid of incessant quarrels between the sales and production personnel about the production’s incapability to make the products earlier and the sales’ promising unreal delivery dates to the customers.

The JDA Factory Planner tool immediately reveals any potential problem in meeting the delivery date including the causes and the planning team can then concentrate on the problem elimination instead of dickerling over who is in blame”, says Ing. Bazala to explain the changes in internal communication.





of trial APS operation also the Procurement Manager was replaced. The changes could be made by me in my capacity more easily than in case the project is managed by a person without the necessary powers and authorities,” summarizes Ing. Bazala focusing on his findings from the implementation.

BENEFITS OF THE IMPLEMENTED PROJECT

“If I am to summarize the measurable benefits of the project I must say the new management and planning capabilities and options have already remarkably manifested themselves by reduced inventory, shortened production time and improved compliance with delivery dates.

As early as in the implementation stage, the LOGIS project yielded savings in the form of 20 % reduction of material in stock. This outcome was attained by more efficient use of metallurgical material, especially plates of various dimensions. The inventory reduc-



tion was enabled also by a general process change consisting in a switch from ordering of all material items for the expected production commencement date to ordering for the planned starting date of the respective operation. This change would be impossible without adequately efficient tool planning the capacity utilization based on all requirements and scheduling the use of materials. This action also contributed to the shortening of production time because in past we did not start the first operation before we obtained all the material for the order.

The detailed view of capacity deployment in a long horizon enables us now to timely address any impending problems; we are able to easily transfer the load among the planning periods, flexibly decide on overtimes or extraordinary shifts or to outsource the work.

The sophisticated planning of utilization of capacities of the different welders with re-



spect to their certification mentioned above allows us to draw up work queues based on balanced capacities which was impracticable in our former planning environment. Permanent overloading of the key capacities resulted in delays which could not be made up for by us in the subsequent production stages.

The APS project showed also a positive effect on our productivity. Improved utilization of both machinery and human capacities and overall optimization of the logistic flow were the reasons for which our fulfilment of performance standards after a year and a half of routine operation after the project completion increased to 124 % from 104 % before the project.

Anyhow, the key benefit of this project is seen by us in process changes and APS tool functionalities which allowed us to meet much more delivery dates than before. Expressed in numbers it is absolutely clear: while before the project we met the delivery dates in 74 % of cases after the project implementation we improved to 96 % and the vast majority of delays is now caused by failures of our material suppliers. Problems are encountered particularly in case of materials from abroad required by the customers – mostly special materials and coating compositions for rail vehicles – whose turnover is irregular and generally very low. The good results in this field were achieved by us also because the sales personnel benefiting from the existing solution are able to verify the delivery date in a few seconds through a simulation of the order acceptance with respect to the actual capacity utilization and material availability. With the overview of actual capacity utilization and progress of different orders we can promise delivery dates within a week in case of certain orders, if circumstances are favourable while before the project our delivery date for such products was fixed to 3 weeks.

SUMMARY OF THE COOPERATION

Summarizing the project Ing. Miroslav Bazala notes: “First and foremost I am very pleased to state that after years of searching we have finally found not only a system but a partner for long-standing cooperation and continuous improvement of the ability to manage the order execution process. I am convinced the attained results in the form of reduced inventory, shortened production time and, most importantly, meeting the required delivery dates are only a springboard to long-term improvement of operational efficiency and customer service and believe the changes made under LOGIS leadership will contribute to the strengthening of our position among top-class suppliers not only in the railway sector”.

“Now, only a year and a half after the implementation completion, I reckon the investment has paid back.”

*Miroslav Bazala,
Executive Director, BAST*

The project was also evaluated by Ing. Tomáš Vojtk, Executive Director of LOGIS indicating: “From the very beginning of the project for BAST it was perceived us as a challenging task to achieve success in an environment where our competitors failed. The clear view of BAST personnel of the goal and expected benefits as well as demands to be satisfied and changes to be made during the implementation significantly contributed to the success. I am also glad our expectation that the client’s high requirements and experience based on previous attempts to implement various planning support tools would contribute to very good project outcomes has proved to be right”.



BAST

BAST specializes in all kinds of CNC sheet metal working and production of sheet metal parts. Established in 1991, it employs 190 people. BAST offers its services and capacities to customers from rail vehicle production, general engineering and electrical engineering sectors.

Since its foundation in 1991 BAST has been committed to high product quality, reliability and professional consulting services. Each customer is provided with an individual offer based on requirements in the following fields: sheet metal working, sheet metal products, welded sheet metal parts and assemblies, other products of steel, stainless materials and aluminium.



LOGIS

LOGIS is a supplier of expertise services and information technologies focused on improving of business management and competitiveness.

LOGIS applies advanced managing and planning methods and procedures (so-called best practices), including high-performance information technologies Supply Chain Management (SCM) and Advanced Planning and Scheduling (APS). The projects are aimed to improvement operation excellence and customer satisfaction of LOGIS customers.

The used technologies are either proprietary or from i2 Technologies (currently the part of JDA Software Group).The company has over 60 clients in more then 25 countries worldwide. Learn more at www.logis.cz

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