

Case Study



T Machinery a.s.

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MTO Production Planning:
Systematically, precisely, reliably

LOGIS
PLANNING FOR EFFICIENCY



Make to Order Production Planning: Systematically, precisely, reliably



T Machinery a.s.

The company T Machinery a.s., manufacturer of mining technology realized a project in 2009 focused on essential change of production planning and control. The partner that supplied the tool for advanced planning and managed the project including not only its implementation, but also realization of process changes, was LOGIS. The realized project affected all the key departments – from sales, through technical department, planning as well as purchasing up to production. The changes realized in association with the project not only contributed to improvement of the performance parameters in the company like the stock level or planned length of production lead times, but significantly influenced also the process of creation of production documentation or material purchase.

The extraction technology production in the south of Moravia has almost eighty year tradition; it originated in connection with mechanization of lignite extraction for power-production purposes of companies belonging to Bata group. This



Marek Milde
*Member of the Board,
Director of Division II*

tradition was followed by the company T Machinery a.s. established in 2003. Current production portfolio includes supplies of face shearers, powered support, face flight conveyors and other mining machines and their components. The company is focused on exports, which brings about a necessity to adapt the technology to specific mine-geological conditions of the area, in which the supplied technology will be used. Individual requirements of each of the customers hence result in the fact that almost each piece of final product is original. The increasing production volume and products range with associated demanding creation of production documentation have caused an unbearable increase of operative tasks in management of the job process in recent years.

“We have been realizing the need for change of the management method already for long time,” says Ing. Marek Milde, member of the Board of Directors and Director of Division II of T Machinery and continues: “In selection of planning system we were negotiating with many suppliers of these services.

We were greatly impressed by the list of reference projects realized by LOGIS in the past in the conditions of custom engineering production, and we eventually decided for cooperation only after a detailed analysis, whose purpose was to provide sufficient supporting data for deciding on investment in the Advanced Planning and Scheduling project. The study proved that the project of this type is meaningful in our conditions and the return period of this investment is acceptable, which, by the way, proves to be right after the implementation of the project.”

MTO PRODUCTION PLANNING USING TIPIFYED REPRESENTATIVES

“During realization of the analysis both parties also agreed on the fact that it will definitely not be a project focused purely on application of IT technologies.

“The project was implemented in the agreed extent, within the contractually stipulated period of time and the planned budget was not exceeded.”

Marek Milde

It was clear from the very beginning that their correct function is conditioned by a series of process changes and rules of company departments functioning, which provide inputs for the planning tools. The technical department went through a real revolution, being subject to significant change in creation of production documentation. One of the requirements of T Machinery was the possibility to plan before creation of final production documentation with monitoring of the already approved production documentation, which can be submitted to the production process. Based on this requirement the LOGIS consultants proposed a methodology of use of so-called typified representatives





for gradual creation of material item lists and technological procedures.

This methodology allows us to plan the customer request since the moment of signing the contract. Thus we immediately receive information regarding approximate completion of order, utilization of capacities or terms of need for key purchased materials. The documentation is gradually specified, whereas the planning tool understandably indicates, which production nodes are definitively clarified and can be released for production. If I were to summarize the benefits of this new way of creation of documentation, I would point out the following effects:

- Standardization and better arrangement of gradual creation of documentation for new products,
- Overview of missing supporting documents for production, identification of production nodes that are not technologically clarified and endanger the compliance with deadlines - specification of priorities for technical department,
- Ability to specify key terms of realization of job orders more precisely and to acquire utilization capacities overview even with unclarified product specification,
- Getting of major time frame to purchase key components with long delivery time."

IMPROVEMENT OF DISCIPLINE DURING WIP REPORTING

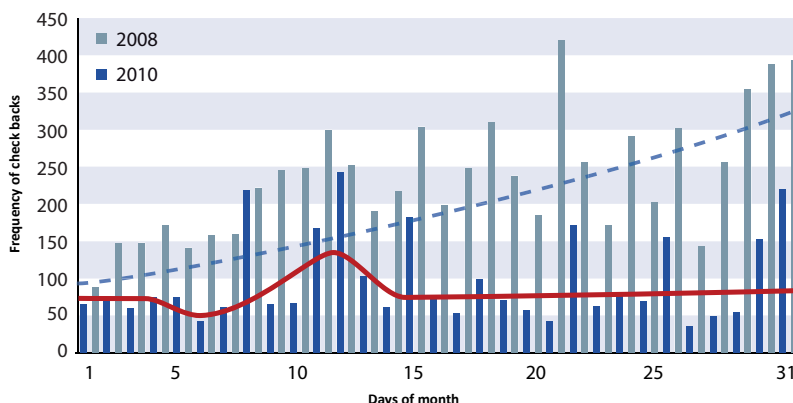
Quality support data for describing product structure and technological procedures are not the only condition for creation of feasible and optimized plan.

Equally important is the feedback providing information about how the plan is being accomplished in the workshops. Though the production is balanced within the month, before the APS was applied the company was experiencing significant increase in frequency of check back reports at the end of each calendar month. The low discipline in delivery of production was identified as one of the risks in the initial project stage. The reaction of management to risk analysis was a more intense check in this area. This led to gradual improvement of discipline up to current level (half of 2010), when the distribution of check back report frequency within the month is balanced, as shown by the below chart.

The specified examples of improvement in the areas not directly associated with information technologies prove that APS projects must complexly cover the entire process of job order realizations in the company - the well-known TOC rule applies here as well, saying that the chain is as solid as its weakest link, in other words: The quality of plan can only match the quality of the input data.

A decent supplier of planning tool should not however limit himself to stating of this premise, but should include measures and suggestions in his project that would lead to an increase of quality of input data.

Average daily number of WIP reports

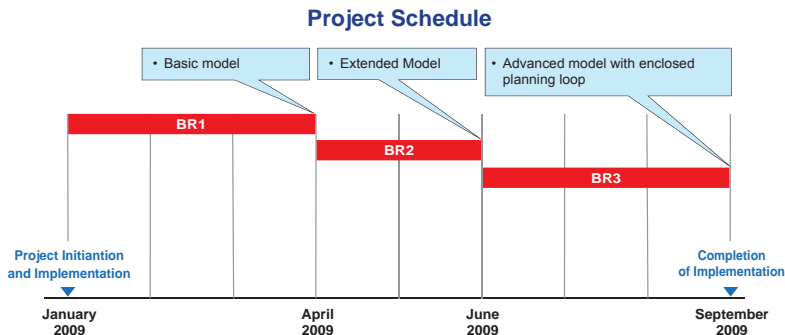


PERFORMANCE PARAMETERS IMPROVEMENT

The development of performance parameters before and after the realization of the project is commented by Patrik Čajka, head of production management department: "Statistically very important improvement is definitely the significant reduction of average planned production lead time. Thanks to program adjustments that LOGIS implemented beyond the frame of its contractual obligations we succeeded in shortening average planned production lead time in selected businesses of certain nature up to five times. This applies to products like for example conveyors containing higher number of identical components within one business order. Supporting data and formerly used planning tools did not allow us to plan the production of these products in the way, in which they are actually manufactured, in batches. The plan of these businesses in the past did not correspond to reality; furthermore it significantly distorted information regarding available capacities for realization of other businesses. The value of such imprecise, laboriously compiled production plan was more than questionable for the company management. The proposed solution brought the plan significantly closer to reality, without necessity to interfere with the input data.

The parameters that are monitored probably in any production plant include stock level. Also in our company we evaluate this indicator regularly, therefore we can state, viewing our statistics, that in comparison of ten-month average stock level and after application of APS project in routine operation the material stock was decreased by 16%, whereas the most significant drop (by 32%) was noted in metallurgical material.

Particularly this stock category with relatively short delivery time was, in my opinion,



influenced very positively by suggestions provided to our buyers by APS JDA Factory Planner. In the case of average stock level development we are however not able, as



Patrik Čajka
Production Management Head

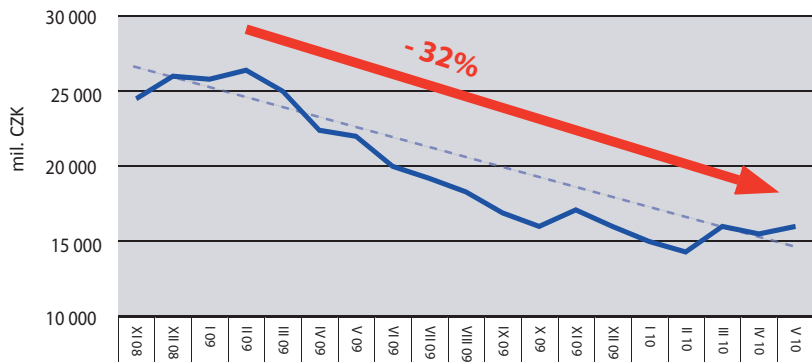
opposed to the previous parameter, to clearly separate influence of the APS project from other factors that definitely influenced this indicator, such as changes in prices of inputs or total volume of realized businesses in the given period.”

OVERALL PROJECT EVALUATION

Ing. Marek Milde comments on the project results as follows: As the member of the company management responsible for production and logistics I personally most appreciate the significant improvement of the job-order status overview in the company. Almost at any time we are able to find out not only the status of our job orders and which job orders are in danger in terms of date of accomplishment, but also what is the cause of the problem and what measures must be adopted in order to prevent the problem.

Ing. Marek Milde further adds the following to the role of supplier, LOGIS: “After the experience from the realized APS project I can state with certainty that the supply of quality and efficient planning tools are not enough to guarantee success of the entire project. Without quality consulting of the experienced LOGIS advisors we would not probably be able to achieve the described

Metal material stock volume development



success within such a short time. Talking about the work of the supplier I also evaluate the open communication and ability to find a compromise acceptable for both parties, furthermore all the concluded agreements, both in the pre-project as well as implementation stage, were always met by our partners.

The fact that we did not make a mistake in selection of the supplier is supported by facts – the project was realized in the agreed extent, within the contractually stipulated time and the planned budget was not exceeded.”

The key role of the customer in the project is commented by Prokop Havlík, director of sale in the sector of discrete production of LOGIS company: “With regard to my position I beg to summarize our cooperation since the first mutual contacts. In case of T Machinery I found out once again that a customer, who imposes high demands on us already in the sales stage, finally appears to be a quality, responsible and hardly working partner. Active approach of top management, interest, expertise and effort to find solutions in complicated situations on the side of the project team were key factors to success of the entire project.”

Total material stock - drop by 16%	
Average 10 months before project completion (11/2008 - 8/2009)	94 358 738
Average 10 months after project completion (9/2009 - 5/2010)	78 960 207







T MACHINERY

The company T Machinery a.s. was established in 2003 as a company producing mining and extraction technology. It follows the manufacturing tradition in this segment, which has been existing in Moravia for more than 75 years, when the mechanization of extraction of lignite for power production purposes of all the companies owned by Bata was initiated.

The company focuses especially on export. The biggest share of export goes to the markets of Ukraine and Russia, the machines and devices however are also sold to Poland, Slovenia, Serbia, Spain. T Machinery cooperated with companies in Germany, to which it supplies parts of technologies.

The company keeps developing new machines meeting global criteria, especially intended to maximum possible increase in efficiency of mining activities with the lowest possible share of physical work and resulting in elimination of negative influence of human factor on operation, which brings about better safety in performance of all activities underground.



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 than 25 countries worldwide. Learn more at www.logis.cz

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