

Case Study



WALTER AIRCRAFT ENGINES

Fly on the Wings of APS

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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



Václav Havlan
Vice-chairman of the Board of Directors

in the project of advanced planning. In the environment of the aircraft industry, in which we operate, demands continue to increase on quality, delivery

among the top producers worldwide. For that matter, should it not be the case, we couldn't be the supplier for

The chief motive with which we approached the project of advanced planning was the competitive advantage.

Václav Havlan

companies like Rolls-Royce or SNEC-MA. 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 and solution.”

and service of aircraft engines and (2) order cooperation – production of components 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 date than we expected, or there's a problem in the production department. Although the situations keep changing, the pace and deadline delivery performance remain the primary requirements of our customers. In WALTER ENGINES, we have set a target to cope with



Libor Veverka
Member of the Board of Directors

these situations much better than in the past. The objective is to react to 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.”



performance, reduction of delivery lead times and overall flexibility of reaction to changing conditions. As concerns the quality of our production, we belong

Libor Veverka, Member of the Board of Directors, adds: “Production at WALTER ENGINES is divided into two programmes: (1) the production, repairs



Petr Kocián
head of logistics

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, some-

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

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

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 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 category.

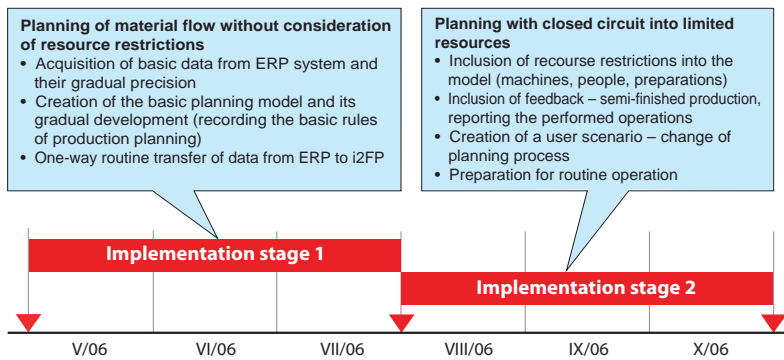
IMPROVED BALANCE OF PRODUCTION

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

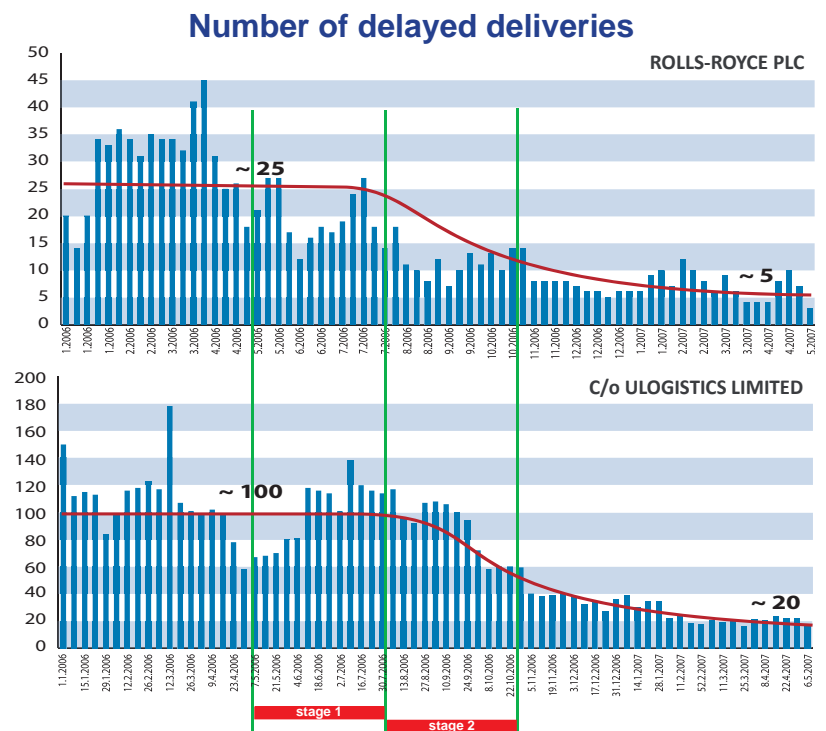
Project Schedule



times 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 comparison of some of its features (see the table 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

cases, the original usual level of the number of delayed orders fell by approximately 80%. The third diagram further proves that

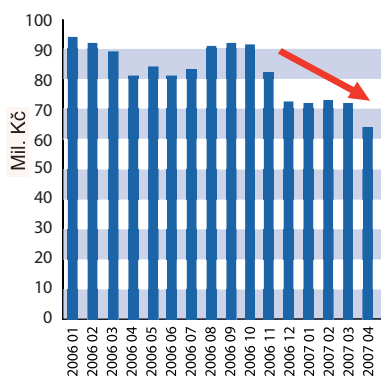




expectation was confirmed as we have recorded a reduction of semi-finished production by approximately 30% (both in the field of engine production and the production of components to order).

Development of inventory and semi-finished production

Production of aircraft engines

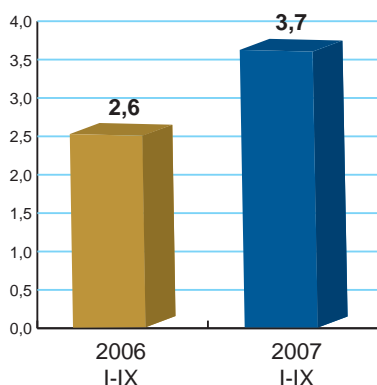


These days, however, this trend can no longer be assessed because as concerns inventory, circumstances affecting their level have changed significantly. It was decided to move the manufacturing premises of our company and we had to take measures in order to prevent the effect of this move on our clients 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 semi-finished production, which can't be affected at all by the APS system at the moment.

IMPROVED FLOW RATE

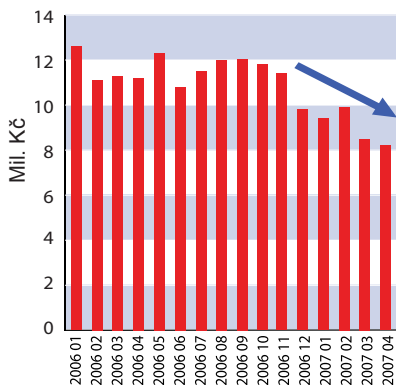
Under the former method of order fulfilment management, we were unable to increase the production flow rate,

Increased flow rate expressed in sales per production worker



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 pro-

Subcontracted production



ved 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%.

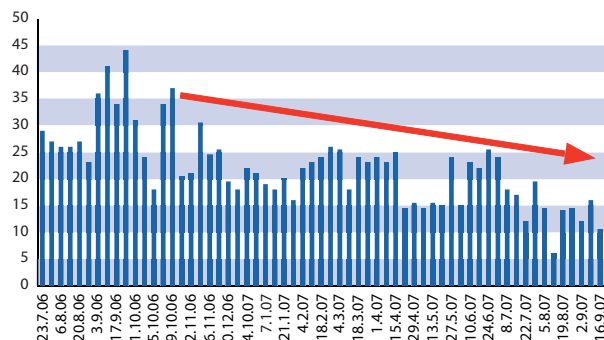
EFFECT ON THE BUSINESS, GROWING SALES, BETTER PRICES FOR TIMELY SUPPLIES

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 introduction 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 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 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 strongly 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 external 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,

Average delay of deliveries





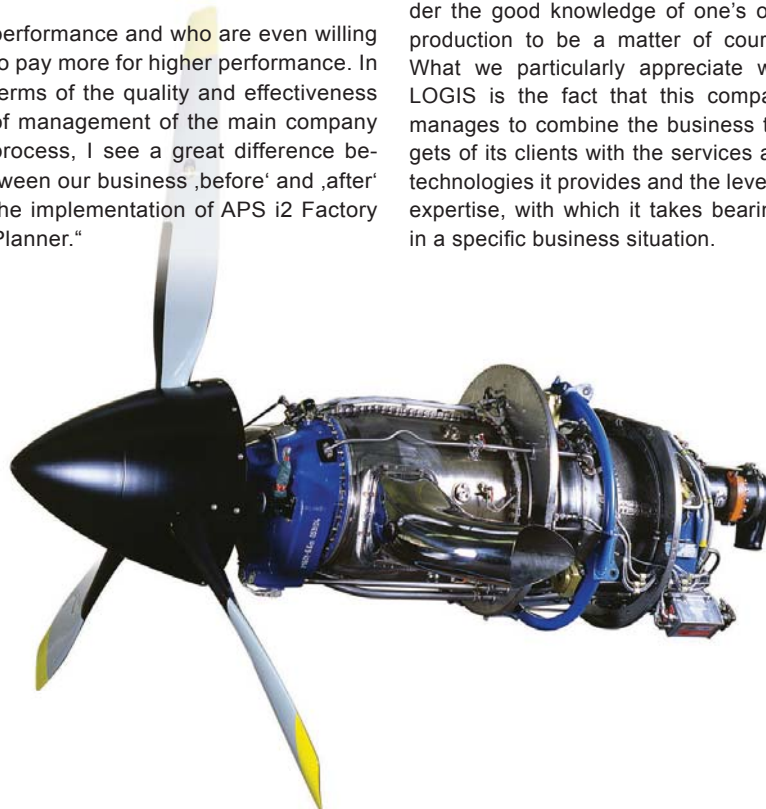
Planning „before i2“	Planning „with i2“
very limited perception for resources	transparent, detailed planning of resources
unrealistic, non-synchronized work queues	work queues following synchronically
long, manually performed replanning with limited time effectiveness and limited scope (several sources)	very fast planning with high comprehensiveness, possibility of fast reaction to any change of situation
minimum ability to identify future danger	high ability to identify danger timely, strong support for solution of problems
no possibility to simulate or create scenarios	easy simulations and „what-if“ analyses and their archiving

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. These 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 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 expertise, with which it takes bearings in a specific business situation.



WALTER AIRCRAFT ENGINES

WALTER ENGINES is a traditional manufacturer of aircraft turboprop engines and aircraft parts bespoke for leaders of world aircraft producers. Customers comprehend companies such as Rolls-Royce, SNECMA and Turboméca. WALTER ENGINES develop, produce and support turboprop engines. We are integrated in developing programs supported by European Union and Czech government. WALTER ENGINES is part of dynamic aircraft environment, where constantly grow requirements for quality, shortening of delivery and time performance and total response elasticity in changing specification..

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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 (LOGIS is an authorized distributor of i2). The company has over 60 clients in more than 25 countries worldwide. Learn more at www.logis.cz

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i2 TECHNOLOGIES

The leading supplier of solutions for the management of complex supplier chains. i2 develops and supplies software that helps customers optimize and synchronize their activities in management of supplies and inquiries. i2 was selected for solving critical and complicated problems in supplier chains in more than 1000 leading companies worldwide, including seven of the top ten on the Fortune Global ladder. Since it was established in 1988 it has focused on the success of clients and maintains its orientation towards delivery of value by applying solutions developed for ensuring a fast rate of return of investments. You can find more about i2 at www.i2.com.

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