



Transparent Production Order Planning with GANTTPLAN

Order Scheduling for the Manufacture of Precision Metrology Instruments at Feingerätebau K. Fischer GmbH



High quality manufacturing with precise planning

Feingerätebau K. Fischer manufactures precision measuring and recording instruments for meteorology and the climate. To maintain high quality levels they required good process repeatability and have achieved this through tight production control based on DUALIS's GANTTPLAN software.

The K. Fischer facility is based in Drebach, Saxony, Germany. The medium sized manufacturer produces classical barometers and hygrometers, weather stations, data-loggers, chart plotters and made to order electronic instrumentation items. Production is characterized by customized small to medium sized production series.

Production difficulties

Fischer relies heavily on production system planning to respond effectively to customer orders. Most tasks were manually scheduled and when plans required reconfiguration due pressure on delivery deadlines the sheer number of processes made the task very difficult. The result was production had longer than expected throughput times and frequent delivery delays. Allocation of resources and utilization was not optimal, and the planning impact on existing production, including the effect on throughput, capacity, and order completion date was not very clear at all. The main problem was that without meaningful information on available capacity for additional orders and means to analyze bottlenecks it was very difficult to understand how best to improve the facilities and make investment decisions for future expansion. Delivery contracts for small low volume batches were also very problematic. When a clear inventory was missing, orders often spent a long time in production waiting for out-of-stock items to arrive, resulting in delivery delays and the increased production congestion, in turn delayed other orders as well.

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“It was not easy to get control of production, it is a very sensitive facility – any machine could be a bottleneck and it seemed every resource was the potential weak link”, informed Frank Gross, production manager at K. Fischer. “We needed a planning system to link customer orders with our inventory and materials management. The tool should connect to our Excel spreadsheet and extract the necessary information for material stock and customer orders and based on this create an order sequence with optimal resource allocation.”



Order and Resource allocation in the Production plan



Detailed GANTT chart for a production order

GANTTPLAN to the rescue

To find a solution, Frank Große met with DUALIS to discuss how GANTTPLAN could meet their needs. Ideally a short term scheduling tool would provide precise information on the current production schedule, resource utilization and bottlenecks, and a quick impact assessment for new orders and any planning reconfiguration – all at the push of a button. GANTTPLAN was offering a reduction in the planning effort, improved schedule quality and overall transparency of the production operation.

“Our aim was to achieve significant reduction in production costs, and to hit deadlines without short-term production re-scheduling while focusing on setup cost optimization based on optimal batch sizes and order sequencing. After an evaluation period and the decision was taken to use the DUALIS solution, I defined the personnel, machine areas and resources in GANTTPLAN”, recalls Frank Große. “The second step was to create work-plans, shift schedules, and define a qualification matrix to associate individual operators to processes and machinery. Once we had selected the important planning parameters we defined the work plans, parts lists, and accessed inventory, materials and customer order information.”

„We now have much greater transparency and responsiveness in our planning and scheduling. We can say quite clearly that GANTTPLAN has helped us optimize inventories and increased our customer satisfaction and competitiveness.”

Frank Große, Production Manager, Feingerätebau K. Fischer GmbH

„This approach meant we could have a single production plan with a 3 month planning horizon that optimized delivery dates and lead times for more than 1,000 job orders and 50 resources. With 360 predefined parts lists and 460 work plans we are currently covering 85% of all products and variants in our production.”

Optimally planned production, lowered costs

Now Frank Große begins his day with a tour of the production facility before sitting down to review the current status of customer orders, material stocks and supplier deliveries. Any updated information is read into GANTTPLAN and a production plan is generated with a proposed plan to optimize the production against the constraint of scheduled order deliveries – all at the push of a button.

Current status updates between the production facility and GANTTPLAN give Frank Große constant knowledge of part and order locations, information on when an order transferred from one area to another and when an order is due to be completed.

GANTTPLAN gives an overview of the current production status, and can even do so remotely. Particularly useful for the production manager are individual reports for machines, orders and facility resources. These can be used to see precisely how

an order is progressing and distributed within the production area, and whether it will be completed on time. When new orders are introduced, the system evaluates the materials required for a specific delivery date based on preset scheduling parameters, safety stock margins, batch size and any congestion dependent delays.

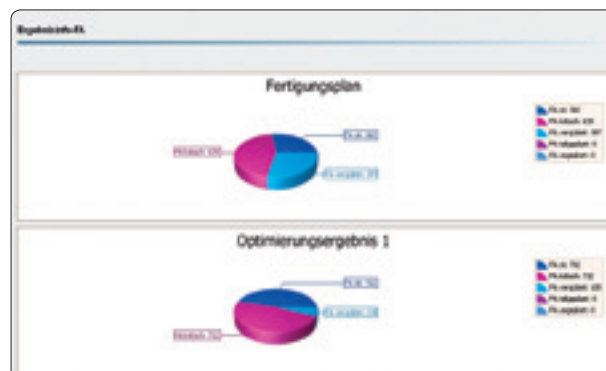
A positive conclusion

“Initially I was a bit sceptical, but my experience has been that GANTTPLAN is very flexible and adaptable to our needs. Most of our production problems are no longer issues today,” says Frank Große. “When you make plans manually based on experience alone, you still need to allow a safety margin and at best you get half of the orders delivered on time, and the main problem is every planning mistake costs the company money. Because GANTTPLAN gives up-to-date information, we know for example, when to order and the right amount of supplies to order so that our inventory costs are minimized and we don’t run out of parts for an order.”

Also Fischer is using GANTTPLAN to give clients a reliable delivery commitments. Most orders are received with a requested delivery date and GANTTPLAN processes a Dummy-Order to check if the requested delivery date is realistic or not. Now when clients are informed of their delivery date and the goods arrive as expected, the result is a much higher level of customer satisfaction.



Inventory level for an individual stock item



Graphical comparison of completed orders for different planning scenarios

Feingerätebau K. Fischer GmbH

The Fischer company has been working in the field of instrumentation for more than 60 years and manufactures measuring and recording instruments for meteorology and the climate. The comprehensive product range consists of quality products that are characterized by durability and excellent precision workmanship. Feingerätebau K. Fischer GmbH maintains their high quality standards through the use of first class materials in combination with modern engineering and manufacturing technologies.

To guarantee high quality and product reliability, special emphasis is given to accurate calibration and testing based on nationally derived standards. The integrated quality and environmental management system is DIN EN ISO 9001 and DIN EN ISO 14001 compliant and has been registered since 1998.

The range of Fischer precision instruments includes electronic devices,



data-loggers, and sensors used for measuring, recording, transmitting and archiving of environmental data and associated equipment for test and calibration services. Support services are provided for configuration, installation, commissioning and maintenance of Fischer based systems.

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The DUALIS GmbH IT Solution

DUALIS GmbH IT Solution specializes in the development of simulation and planning software. The Dresden-based company was founded in 1990 to deliver services and innovative solutions to companies in the manufacturing sector. The company's steady growth is based on successful projects with well-known European enterprises with resulting technology and service refinements that continue to contribute to today's success and widespread use of the product range.

GANTTPLAN and the ISSOP are used for detailed planning and optimization of manufacturing processes. SPEEDSIM and 3DCreate, deliver 2D and 3D planning and optimization of production and logistics facilities. The



user profits in many ways from the application of these tools. Software based planning optimizes material stocks based on customer orders, and order can be more precisely planned for on-time delivery. A plant design supported by simulation technology cuts costs throughout the system's lifecycle, increases confidence, reduces operational costs, and is a very compelling sales tool.