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Inside Story:

Restructuring at Hansa Metallwerke AG:

Combined Therapy Curing Inventory Pains
Restructuring at Hansa Metallwerke AG:

Combined Therapy against Inventory Pains

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When we are talking about inventory pains, this not only refers to the pressure of having to endure high stockholding costs, but also – due to faulty inventory planning and the resulting missing stock – to the symptoms of deficiencies regarding the readiness to deliver. Thanks to the support of Abels & Kemmner, Hansa Metallwerke AG, manufacturers of high-quality designer fittings and innovative shower hose and shower systems, were successful in developing a finely tuned “integrated solution” that consisted of measures and strategies in the areas of process configuration, planning procedures and IT systems. It was thanks to this that Hansa Metallwerke AG was successful in achieving sustainable improvements.

Within the context of restructuring the corporate processes of Hansa Metallwerke AG, one of the most important objectives was to attain a significant and, even more importantly, sustainable reduction of inventory. This was because the existing surplus stock levels were causing enormous pain, when viewed from the cost perspective. However, during the project it quickly became apparent that the business would only accomplish the objective of sustainably reducing inventory using a “holistic” therapy approach. This would need to incorporate various strategic thrusts at the same time and would have to efficiently integrate the respective approaches.

Introducing an improved planning system in a process landscape that had not been closely examined from a zero-base, would only deliver sub-optimal results. Likewise, the idea of item-related planning and scheduling methods, which would be optimised on a monthly basis by means of an automated resource planning system, would also not make any sense if it were to be based on an outdated ERP system that had already gone down running with significantly less complicated demands.

An intensive investigation of the actual planning process, the existing system support and the applied processes, further enriched by concentrated “stock drivers” workshops,
uncovered the existing weaknesses and pointed the way toward a new and holistically integrated supply chain model.

The comparison shows a considerable improvement in the supply chain processes (Basis: Supply Chain Audit by Abels & Kemmner).

**The Project Procedure Model**

An initial scan of the planning and dispositive processes, made clear that there was significant optimisation potential in the fields of forecasting, material planning, procurement and production / order processing. The foundation for the scan was the intensive work carried out using Abels & Kemmner checklists, which could be modularly adapted to the respective companies to be audited. Comparing the present under-developed supply-chain processes to current best practice in the field of system support, planning and scheduling, highlighted many areas for improvement. This analysis offered the first indication that significant logistic improvements could be achievable.

In addition to this, within the framework of a potential study, a first excess stock analysis was conducted for finished goods, merchandise and purchased parts. In the course thereof, the potential for reducing stock by 18 to 40 percent was established and, what is more, this would be possible within the first six months. In some cases, the total stock reduction was estimated at more than 50 percent.
In the first phase of the main project, the planning and scheduling cycles of the various types of materials were recorded in detail; the existing IT support for these processes was studied, and the plant and storage structures in the existing system were recorded. At the same time so called “stock drivers workshops” were held with the different departments. These workshops very soon provided the first important answers to the following questions:

- Where are the process deficiencies to be found?
- Where does the existing system support not meet the required needs?
- Where are methods being used that result in poor quality results?
- What are the causes of surplus stock, which cannot be managed by the processes in planning and scheduling methods, and system support?

Here, for instance, it was established that methods were being used that simply worked counter to a decrease of stock levels. Examples are

- The purchasing department typically optimised the prices by buying larger quantities which as a general principle, can be a good approach. New products were subject to a long design process, which whilst not ideal, is manageable. However, no milestones were set for handing over to the production phase, which often resulted in rather time-critical decision-making processes toward the end of design, with fixed deadlines. The result of this was, among others, that the initial filling of the warehouses with new products was set too high, as there was no more time to carry out the appropriate stock analyses.

- Moreover, the innovative nature of the developers also resulted in frequent changes in the technical specifications. However, this was frequently done without considering possibilities for multiple item usages, which in turn led to an unnecessary increase in the range of product variants, resulting in high stock levels, particularly for the spare parts business.

- With reference to the phase-out process, remaining quantities that were still left over from framework agreements were found. These products kept stock levels artificially high, owing to a lack of communication regarding the purchasing obligation of any remaining quantities. What is more, not all discontinued parts were actively managed, so that it was not always possible to achieve sensible processing of the parts in these segments (sale, discounts, scrapping). As a result, situations arose
in which stock levels dropped below minimum levels, which in turn resulted in new orders.

- Insufficient attention was given to poor delivery reliability of suppliers, which was not actively addressed, being easier simply to increase security stock levels.

In the second phase of the main project, a model was developed for sustainably reducing the finished goods and purchasing stocks. In so doing, apart from item structuring in accordance with ABC- and XYZ-classification, a great variety of sensitivity analyses, in the form of simulations, were carried out.

These analyses demonstrated which logistic parameters impacted the stock situation, such as target service levels, replenishment times or batch sizes, and to what extent this was affected. On this basis using dynamic simulation, all parameters for optimisation of the value stream were established.

The detailed analysis of the existing IT support as well as the planning methods and processes highlighted weaknesses in a number of areas, which could be permanently resolved by the planned model.

![Image 2: The production process at Hansa](image)

**System Support**

A key problem was the existing ERP-System BAAN, which had the release status of 1999. As a result of comprehensive adaptation programming, this release could no longer be updated and in this version could only crudely support the demands placed in it regarding efficient planning and distribution. Thus, for instance, the inventory of primary materials could be and also was frequently allocated to different orders, as Baan still classified reserved stocks of items as being available. In addition to this, the retrospective bookings led to delayed orders, which in turn led to delays in re-stocking. Furthermore the transparency regarding
the inventory was also insufficient, and stock-reducing pull-mechanisms could not be implemented adequately with the existing IT-support. The implemented planning and scheduling, as well as production control procedures were only able to provide sub-optimal results:

**Planning and Scheduling**

The planning cycles were simply too long, and a clear separation of the planning levels was also missing. As a result, the planning information was not consistently structured throughout the entire process, nor was there a uniform planning model. Seasonal effects, as well as the specific issues that arose with newly launched products and discontinued lines, were only considered to a limited extent. Although reorder and safety stock levels were used, they were established without system support (ERP).

In particular, when establishing the safety stocks, depending on the areas of responsibility, the levels were determined in different ways or, alternatively, were based on pragmatic values. In part, the method of calculation didn’t do justice to the actual intention of safety stock, as they did not necessarily have anything to do with covering the fluctuations in consumer behaviour. In addition to this, the safety and reorder levels were established entirely independent of one another, whereat the safety stock per definition already formed a part of the reorder levels. In the scheduling of purchase parts, these were not checked with regard to order needs, but only once a week. This led to a situation in which, subsequent to the planning phase, one had one week of “flying blind” and could no longer react to changes in the demand situation. At this point, the entire process was strongly characterised by manual actions, in addition to being extremely elaborate and as such also prone to errors, despite the greatest possible care.

**The Process of Production Control**

In the course of production control it was revealed that there were no integrated, clear business rules for the arrangement of the controlling processes, as already the IT system was not functioning rigorously. Existing rules (e.g. the processing of certain lists) were not adhered to in their entirety, since the input for the sequence planning was too complex. Here for instance, there were up to 5 different lists (sequence lists, priority lists), which, depending on the area of responsibility, were either used to a higher or lesser extent, or not at all. Consolidation of the demands across a planning horizon that was too large had a significant stock-increasing effect. In part, the availability of primary material derived from their own manufacturing facilities, as well as purchase parts, was insufficient. This in turn led to uncertainty in the planning processes regarding the final assembly. In the event of special requirements arising, these were also not always planned as a separate order with an agreed upon delivery time, but rather as a regular stock order, which, although it decreased the delivery time, also filled the warehouse with special items and depleted valuable manufacturing resources much too early.

**Planning, Processes and the System today**
The inadequate system support called for an investigation into the need for external forecast and scheduling optimisation. In future, Hansa Metallwerke AG will utilise the software DISKOVER SCO by SCT (Supply Chain Technologies). DISKOVER receives all planning-relevant data from the ERP-system via a transfer table, which then is processed by DISKOVER by means of simulation, so as to optimise the processes and parameters, as well as for the planning and scheduling, right up to the order proposals or production order proposals. These optimised procurement elements are then again returned to BAAN for the operative implementation.

A uniform planning model as well as the clear separation of the different planning levels and respective areas of responsibility or tasks (sales, production planning / scheduling, manufacturing control) was established.

Sales planning, which includes the consideration of trends and seasonal effects, is executed by means of system-supported state-of-the-art planning processes; new and discontinued items are clearly defined and regulated, in addition to being supported by the system. Now the calculation of optimal reorder and safety stock levels is carried out consistently within the system, and it is no longer distributed among different persons using varying methods. Scheduling ensues when there is call for action, such as when re-ordering becomes necessary. Manual planning activities are replaced by optimised and automated processes. Now, every item is automatically adapted with regard to planning aspects and its commonality, and this is done on a rolling monthly basis, in accordance with the consumption characteristics and current life cycle position of the respective items. How this is to be executed, has been lodged in the software in the body of rules of the scheduling, which is administrated by a planner and automatically processed by the system. The stock and supply situation is transparent at all times and the material requirement planners are immediately informed regarding planning deviations by means of alerts and reports. The entire planning process is less elaborate and the error-susceptibility is significantly reduced.

There are clear business rules regarding the mode of work in planning / material planning and production control. The diversity of sequence and priority lists has come to an end, and the consistent approach now is to establish the desired delivery-readiness, and thus eliminate the disparities caused by different guideline lists. This is achieved by ensuring optimal scheduling and quantity planning. Only in the case of competition for material and / or capacity, is priority list is still used.

Unnecessary speculative production no longer occurs, as this establishes superfluous stocks, uses up primary material with multiple-use parts, (which under certain circumstances might be required somewhere else) and uses up production capacity at bottlenecks. The stock levels are transparent, so that multiple allocations can no longer occur, as the available stocks are reduced by placement of a production order by the planner.
Summary

Within the context of this project, Hansa Metallwerke AG successfully implemented integrated planning. In so doing Hansa showed great commitment and succeeded in implementing all requisite changes that support the holistic and sustainable model. The disorder, caused by unbalanced and uncoordinated supply chain processes, insufficient system support and the use of sub-optimal or manual processes, all of which promoted the “inventory pain”, now are a thing of the past. A good supply chain performance that provides the desired level of delivery-readiness with minimal stock levels quickly lets the notion of keeping high inventory stock become a thing of the past. The combination therapy was successful, following the motto “Operation successful, patient now totally fit!”

"About Hansa Metallwerke AG"

Hansa, with its headquarters in Stuttgart, can look back at a long and successful tradition. At its production site in Burglengenfeld the company produces bathroom and kitchen fittings as well as shower hoses and shower systems. The turnover is distributed almost evenly between domestic and foreign markets, with a 50% share on each. The principal customers abroad are especially Austria and the USA. Presently a key share of the turnover (75 %) is generated with the sale of single-lever mixers.

The production process consists of numerous steps. First the fittings are cast, thereafter a number of work steps such as separation, grinding work, polishing and surface/electroplating follow. The thus manufactured parts are then temporarily stored in chrome part storage space, where they are subsequently assembled to finished fittings, with externally procured components such as seals and mixing valves (cartridges).

Hansa Metallwerke AG offers a rich variety of innovative fittings as well as shower hoses and shower systems. These products enjoy a strong standing in the international markets for
premium brands, not least owing to their excellent design. What is more, according to an annual survey in which dealers and plumbers were questioned by the magazine “markt intern”, Hansa has been voted as “Fachhandwerkpartner Nr. 1” (craftsman partner no. 1) every year without fail since 1982, which further underscores the continuity in both service and quality.

For Hansa, apart from the functionality of its products, the motto of “Experiencing Water” is of paramount importance. In so doing, functional aspects are combined with the highest design expectations. In the course hereof, not only are the fittings designed, but also the water itself. This is realised by means of percolators that were specially developed for this purpose, open watercourses, coloured visualisation and staging of the water. By selecting the corresponding fittings in chrome, gold or platinum, the colours can be emphasised even further and thus highlighted.

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