

ROI DIALOG

ROI Consulting's Customer Magazine



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HOW A STANDARD PAPER FORMAT HELPS INCREASE PRODUCTIVITY

HOERBIGER's Production Masterplan is Making Good Progress



The Swiss-based HOERBIGER group manufactures key components for the oil, gas, and process industries, as well as the engineering and automotive sectors. A world market leader in several segments, the company has

enjoyed steady growth and, with nearly 6,800 employees, hit the EUR 1 billion sales mark in 2011. Since October 2010, ROI has been helping the Compression Technology division to launch its 'Production Masterplan' – a forward-looking strategy to lay the foundation for continued global growth. The plan has started to produce tangible results: At the lead factory in Vienna, Austria, three departments have already achieved best-practice status.

Analyses quickly showed that the valve assembly, incoming

goods, and dispatch departments offered attractive potential that could be tapped quickly. "We were dealing with the typical challenges of high-mix/low-volume manufacturing," says ROI project manager Nicolaus Stadler. "For companies in these circumstances, efficient and lean work processes are particularly important." Growth and increasing space requirements added to the pressure. A team of ROI consultants and HOERBIGER staff developed concepts to increase standardization and improve efficiency.

Implementing Standardized, Flexible, and Low-Waste Assembly

Faced with large numbers of small-volume orders, HOERBIGER's valve assembly is required to demonstrate a maximum of flexibility. Only a negligible share of the product range comprises mass-produced items that can be kept in stock; the vast majority are made to order. Needless to say, most customers want them delivered yesterday.

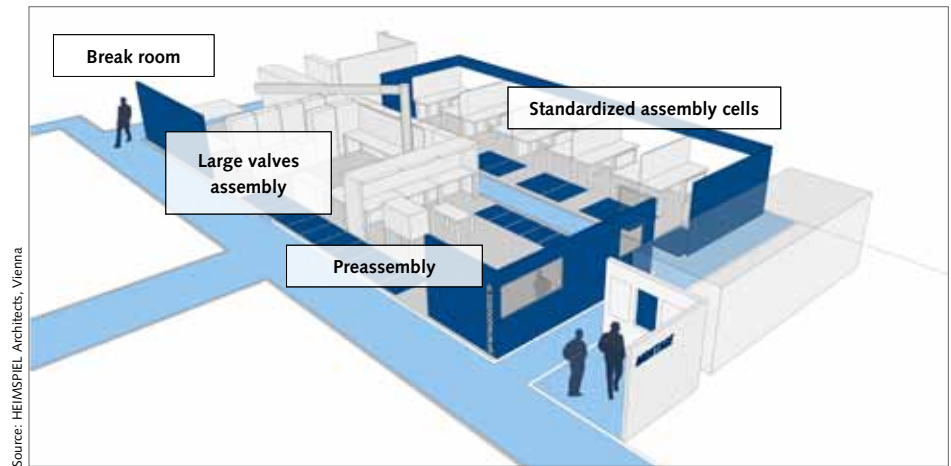
Additional challenges arise from enormous fluctuations in production volume. "Our fitters sometimes have to work extra shifts one week and take time off the next," explains plant manager Dr. Josef Auernig. Flexi time has absorbed these fluctuations to some extent, but maximum flexibility called for a major redesign. It had to be accomplished while leaving floor space requirements unchanged.

Working closely with the employees concerned, the team developed a series of improvement approaches, including the following:

- Separating preassembly from assembly**
 Wherever preassembly stations were integrated in the assembly cells, the machining activities increased the risk of soiling sensitive components. On the other hand, the joint use of dedicated preassembly stations outside the cells led to extra nonpro-

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Draft drawing and color model

ductive times. The new layout features separate preassembly stations (see figure); preassembled parts are supplied to the fitters in their cells.

- Flexible assignment of fitters:**
 Over the years, some of the fitters had developed strong specializations, in that they would only accept specific assignments. In extreme cases, backlogs in one cell would coincide with idle times in another. According to a new ground rule, each of them now has to be able to assemble anything at any station. To put this into practice, off-peak periods were used to provide reciprocal on-the-job training.
- Standardized assembly cells:**
 All cells now have the same layout. Thanks to their ergonomic and functional design, the floor space could even be reduced without compromising on convenience. Also, all assembly steps were integrated in each of the cells.
- Workflow-oriented surface layout:**
 In the new layout, the distribution of cells across the

shop floor is aligned with workflows. As a result, fitters spent less time moving around between stations.

- Assembly lot size standardized according to DIN A3 rule:**
 Building on the basic insight that processing efficiency – and thus the optimal lot size – depends on the size of the component, the team developed a surprisingly simple yet highly effective rule: One lot is now defined by the quantity that will fit on a DIN A3-sized surface. (DIN A3 is a German standard paper size roughly twice the 'letter' format).

Lot sizes were a frequent subject of debate in the past. Previously, fitters had simply gone by the size of their worktables and a lot could comprise up to 50 parts. This increased throughput times, space requirements, and also handling effort, since at any given time there would be sizeable numbers of semi-finished valves sitting in the cells.

Management had therefore considered switching to one-piece flow, but tests revealed that this would not work for such a heterogeneous pro-

duct range. With the new DIN A3 rule, fitters have all components and materials within easy reach: a highly ergonomic solution which has significantly improved efficiency and throughput times.

All in all, the assembly optimization increased productivity by 15 percent. It also helped clear some floor space which was urgently needed for other purposes. The redesigned valve assembly now boasts two additional cells: one for the assembly of new products still in the pipeline, one for Kanban-controlled production of the company's own packaging material.

Halving Processing Times in Receiving

Receiving/incoming goods is another department where standardized workflows helped eliminate unnecessary distances and duplicate effort. In addition, the test station was moved to a spot within easy reach for everyone. Last but not least, a new transport trolley concept and a scissors lift table at the ramp save employees from having to carry heavy loads.

Effects of the optimization materialized promptly, and they were enormous: In 82 percent of cases, throughput

times for incoming goods were cut in half. Suppliers have also benefitted from the project: thanks to a newly widened driveway, drivers no longer have to deal with difficult turn maneuvers. The attractive overall picture is topped off with a fresh color scheme and new furniture for all areas, as well as a redesigned façade and factory gateway.

Creating Lean Workplaces in Dispatch

What in the world can we do to free up some work space? We're bursting at the seams!" The Vienna plant's dispatch area was urgently looking for ways to accommodate two additional packaging stations for bulk order and spare parts. In just one week, the project team developed a custom-fit solution based on Lean principles.

What were previously two types of workstation became four identical workplaces, dramatically reducing duplicate effort, search times, intermediate stock, and space requirements. The workplaces were ergonomically designed, and equipped with all the hardware needed for booking and labeling. A new, optimized

warehouse layout permits optimum material flows and floor space utilization.

Once these foundations had been laid, the team was able to optimize the department's entire work organization. Thanks to their optimal layout and equipment, workstations can now be assigned flexibly, based on current utilization, enabling the unit to better cope with dispatch peaks. Not surprisingly, everyone involved is happy with the results.

Employee Involvement as a Key Factor of Success

The project at HOERBIGER's Vienna plant is a textbook example of quick, convincing results. As often happens, they are due to employees' hands-on involvement in the problem-solving process: the team worked with them to identify weaknesses, search for effective solutions, and drive implementation. Close cooperation with people on the shop floor is a valuable approach when it comes to developing truly feasible solutions. Above all, it ensures that workers will identify with the project and put its results into practice on a long-term basis.

Statement

"The valve assembly at our Vienna plant had performed quite well in the plant audits – yet some potential for improvement had been revealed and we wanted to tap that quickly. In the course of this project, ROI demonstrated impressive skill in dealing with the issues of order-specific, small-volume manufacturing. Project management did an outstanding job of capturing and incorporating our people's ideas without losing sight of the overall solution."

Dr. Josef Auernig

Plant Manager,
HOERBIGER Ventilwerke
Vienna



→ GERMAN ARTICLE IN OUR CHINA SPECIAL

PROUDLY PRESENTING: NEW ROI OFFICE IN CHINA



Quite a number of companies have made their way to China and, with ROI's help, managed to successfully set up local manufacturing operations. Now many of them are looking for ways to consolidate and expand their success. A key theme here is supplier development: developing and qualifying local suppliers in terms of quality, technology, processes and manufacturing capacity. Other items on the agenda include employee development, productivity improvement, quality management, supply security, and supply chain optimization.

Challenges and Perspectives

But where to start and how to go about it? Michael Jung, the ROI board member responsible for the firm's China business, knows an old Chinese saying that aptly describes the approach many companies take: 'I went his way, I went that way – then I went my own way.'

With all due reverence for the wisdom of these words – this is doubtlessly an expensive way to success. 'Trial and error is certainly not the answer,' says Michael Jung, 'what companies need is specific and

targeted action, such as improving their productivity and optimizing their supply chains.'

And the Chinese market is worth the extra effort, as a look at the facts reveals: Over the past years, the Chinese economy has grown steadily at rates in the order of 10 percent. China has been the number one export nation since 2009, boasting an enormous market and – despite its unemployment rate of only 4 percent – still moderate labor costs. The issues companies face will be different from those they dealt with at market entry and start-up – but the good prospects remain.

ROI's Beijing office provides companies in China with the whole range of tried and proven services, a particular focus being on:

- Market entry and start-up support
- Factory planning
- Ramp-up management
- Productivity improvement
- Supply chain and supplier management
- Training (5S, Lean Manufacturing, Quality Management, TPM)

The office's staff comprises both Chinese and European consultants with up to 20 years local work experience. Its people-oriented project approach features integrated staff training and mixed teams, in order to ensure both, due consideration of Chinese specifics and sustainable results for clients.

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UNIQUE LOGISTICS CONCEPT PUTS REMMERS IN THE LEAD



Remmers AG is a construction chemicals supplier with some 50,000 customers in over 40 countries. Sales were close to EUR 264 million in 2011. Faced with strong growth and rising customer demands, the company launched a groundbreaking logistics strategy: orders received by 4 PM will be delivered the next day.

This was an ambitious goal, due to the wide product range, custom orders, and remote location, but with ROI's help all logistics processes were streamlined.

Remmers now boasts an optimized warehouse structure, integrated stock management, JIT manufacturing of special shades, and a modular packaging system. Reliable transportation partners help to keep the service standards. Next, the strategy will be rolled out across European locations, the goal being to offer the same service level everywhere.

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RME AUDIT: EXCELLENCE IN MAINTENANCE



Maintenance can be a key success factor in asset-intensive industries. The ROI Maintenance Excellence (RME) audit provides a quick and effective tool to tap existing potentials. Working closely with staff, performance in key areas is compared to best practice, enabling new strategies which often have enormous impact on costs

and plant availability. ROI now plans to establish its own benchmark database for RME based on a company survey. Interviewees will get a free copy of the report and a discount on RME Audit projects.

If you wish to participate, just send an email with "Maintenance Study" to info@roi.de.

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ROI AND FACTON OFFER PRODUCT COSTING SOLUTION

Innovative products can bring competitive advantages – if they are developed and manufactured at reasonable costs. Yet, cost management is often a weak point: data tend to be inconsistent, with off-the-shelf software used for costing.

In collaboration with FACTON, ROI now offers clients a powerful solution: based on an initial diagnostic, necessary steps are defined to implement professional lifecycle cost management, and intelligent Enterprise Product Costing (EPC) is implemented. As a result, all staff concerned

have access to the latest product and cost data, external market and benchmarking data, and a range of analysis and simulation methods. Quick implementation is guaranteed by ROI's extensive project and process know-how.



→ GERMAN ARTICLE IN NEXT DIALOG ISSUE

FIRST ANNIVERSARY FOR STUDY MANUFACTORY



The study manufactory in Cologne, Germany, has successfully completed its first year of comprehensive lean management workshops and training courses in English and German. The study manufactory provides numerous training packages focusing on methods and tools for lean production and assembly – tailored to every skill level.

True to our adage: "Change is touchable", at the study manufactory, we want to make positive changes tangible. In addition to set work-shop packages we also carry out customized training courses with experienced trainers. Our training focuses on areas such as

- Lean Management – getting started
- Value Stream Mapping
- KANBAN – from push to pull
- 5S – identifying and eliminating waste
- Working with standards