

Maximizing cost savings with system analyses and simulation tools

Leaner but Stronger

This is not the first time that the steel industry has been in a recession. And steel markets will certainly rebound as the economic climate improves. Those companies that are able to optimize their cost structure systematically in the lean times will be stronger and better able to reap higher profits in the good times. This article describes how.

Experts in the steel arena are generally unanimous in their forecasts that the current steel crises can be managed and overcome during the next years. This is because in the mid- to long-term outlook, steel demand will continue to grow in most market segments and for most products. The key issue for producers now is to maintain a sufficient cash flow despite shrinking sales, and to get ready for the inevitable upswing in the steel market. Steps to exploit all cost-saving potential to improve cash flow from ongoing operations are therefore decisive. During the recent economic euphoria up until the end of 2008, reduced competitive pressure may have allowed some steel manufacturers to “slack off” in their continuous efforts to improve performance. Now is the right time to get back into shape for the next market recovery.

Analyses and simulation tools

A number of steps can be undertaken along the entire manufacturing process to maintain cash flow at an acceptable level. However, “across-the-board” cost-cutting programs may endanger the strategic position of a company as a consequence of diminished service and performance capability. What is needed is a systematic approach applying specific tools to identify savings potential in addition to strict management and adherence to recognized improvements. This is the basis for a flexible and short-term adjustment of costs to fluctuating order volumes, but without losing core competence needed when demand resumes.

The complexity of interlinked operative processes within the total business cycle requires the use of spe-



cial tools to analyze and better define the best cost-optimization approach under prevailing conditions (Figure 1). Improvement recommendations, which may involve both technological and organizational processes, take into consideration the business environment of a particular steel manufacturer. Implementation assistance is also offered by Siemens VAI to help producers overcome the typical “resistance-to-change” mentality that generally increases in an unfavorable business climate.

Measures and improvements

As shown on the basis of project experience, the application of advanced analysis and simulation tools allows areas to be identified where the cash flow from oper-

ations can be improved and the operating costs and working capital decreased. This begins with the proper definition of the requirements placed on finished products at every step of the production route. Measures to streamline production logistics are identified, which shorten order-to-delivery times, allow smaller order lots to be accepted, and more frequent product changes to be carried out at lower product prices.

Variable/direct costs can be reduced by, for example, improving material yields and product quality, i.e., minimizing rejects. Residual fixed costs can be lowered, for example, by introducing suitable measures to enable an efficient and flexible production characterized by the lowest possible machine-preparation times.

Cost-effective production, especially at lower production levels, is vital for reaching the break-even point to assure continued profitable business (Figure 2). A systematic analysis of production processes must be ongoing to reveal additional savings potential with respect to consumables and stock keeping. Low stock levels of intermediate and finished products will help to downsize working-capital requirements and financial obligations.

Maintenance costs should be adapted to fluctuating production orders – which amount to about 40 percent – on the basis of a maintenance review. This prioritizes production facilities, classifies faults, shortens repair times, and allows the quantity of spare and wear parts to be optimized. Identified cost-saving potential that can be achieved in maintenance work is seen in Figure 3.

Concluding remarks

With optimized production logistics, the residual (fixed) costs are adjusted to the capacity utilization. This enables producers to reach the break-even point even at reduced output, which fluctuates according to changing demands. In this way, a sufficient cash flow can be maintained even during a market recession. Reduced pressure for production also provides manufacturers with a golden opportunity to enhance operational processes to allow new and higher-value steel products to be introduced in a company's product portfolio.

The improvements described above have been demonstrated in services projects implemented by Siemens VAI. Benefits for producers could be achieved within a short period of time. ■

Authors

Wolfgang Fimberger, Ernst Köhl, Manfred Vielhaber

Contact

service.metals@siemens.com

Fig. 1:
Evaluation of plant layout and material flow using simulation tools



Fig. 2:
Break-even point achieved at lower capacity utilization

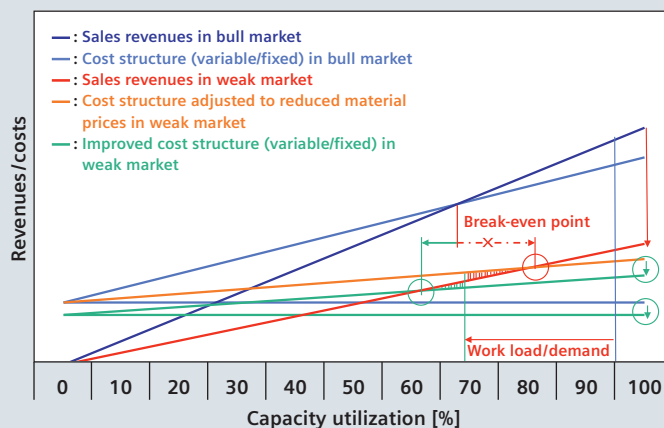


Fig. 3:
Identified cost-saving potential in various maintenance areas

