

A BUSINESS-ORIENTED APPROACH TO MAINTENANCE

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MAINTENANCE MANAGERS CAN BE KEYS TO AN ORGANIZATION'S PROFITABILITY.

WORLD-CLASS ORGANIZATIONS ARE ENCOURAGING THEM TO DEVELOP LONG-TERM OUTLOOKS.

THE PULP AND PAPER INDUSTRY IS FACING, AS IT HAS many times in the past, nervous moments and challenges. The depressed market price for pulp products is forcing new trends in the business. In past decades, industry displayed a production-oriented style of management.

The most frequently used language was the technical one. Most indicators of performance at the mill site were completely technical; few could speak the language of money. At mill sites, profitability was a subject for someone at headquarters. Few people were able to talk about their own business.

Today's most frequently heard concepts in the pulp and paper industry are:

- Quality: to strive for it in all operations, from "the crib to the coffin"
- Productivity: to take the most from the resources available, in a sustainable way
- Environment: to guarantee minimum impact
- Survival: to resist and to save energy during the crisis for enhanced performance in steps ahead
- Business sustainability: to keep market and competitive position, not losing ground to competitors
- Availability of resources
- Consolidation: to join efforts to simplify operations
- Economies of scale
- Cost reduction
- High performance human resources
- Excellence in business (business-oriented management), including strategy, innovation, competence, urgency, and profitability.

BEYOND COST REDUCTION

During the last two or three years, the industry discovered many ways to reduce costs. Some of them were painful, involving the downsizing of talented people. Others were creative and innovative. Cost reduction became

a flag to all. However, cost reduction is a restrictive game, and often it can blind the players. Cost reduction is also a short-term management style. It is an essential game to be played, but those who are involved are required to know all the rules. One of these rules, very often forgotten, is the difference between life cycle cost (LCC) and lowest cost. LCC implies making decisions about costs of assets or operations based on their economic life instead of solely on purchased or actual prices and expenditures.

World-class organizations are encouraging their professionals to think long-term, from early in the project stage to the end of the life cycle. At the same time, these professionals are taught to evaluate margins, costs, cash flows, and profits. As a consequence, they become oriented to business results, not only to technical performance.

Several new management tools have been introduced in the last few years: re-engineering, benchmarking, quality systems, just-in-time, and others. In some cases, these tools generated complicated systems and structures. Today, the new rule is simplification, a game we play every day in ordinary life.

The health of organizations is being measured—as never before—by their financial and economic performance. As a consequence of globalization, the share value of an organization gives an indication of its competitive position in the market. This competitive position is now clearly known by everybody: competitors, financing banks, investment funds, employees, and the community. Profit has become essential to every organization. Profitability is the result of sound management performance, no matter how turbulent and chaotic the market. In situations like these, we always have winners. Winning a competitive advantage is not solely a question of luck.

Today, managers accept the fact that the arena is turbulent, dynamic, in a state of continuous change, and moving in different directions. Understanding the sce-

narios to make decisions about allocation of resources is becoming a common rule. Managers are now required to have a wide overall view and a solid knowledge of the specific project or activity they are responsible for, to be flexible and quick to make decisions, and to think continuously about business results. In short, managers are required not only to keep mills running, but to make money acting as entrepreneurs.

MAINTENANCE MANAGERS' ROLE IN PRODUCTIVITY

Organizations are now obliged to prepare their employees to open their minds to the business. They must find ways to introduce people to the values of the organization and orient them to results and profitability. This applies to the maintenance staff as well. Maintenance managers are key people when it comes to performance, operations, and profitability. Their successes are measured by low cost, high performance, and high return on expenditures. They are not only area managers, but whole mill business managers. They have, as few do in the mill, the power to improve profitability. Why? Profitability is a function of market position, competitive position, and production position. These positions are not static, and they interact with each other. Thus, maintenance managers have to be committed to the company's results, to have a clear vision of strategies, to participate in forums related to business opportunities, and to provide reliability to their customers.

We used to say that maintenance was a supplier area to the operations team. That reality is changing fast because maintenance people are also the operations team. Worldwide, many organizations have made the option to promote maintenance managers to top positions—as industrial directors, for example. This trend is simply due to the fact that mills have to run as much as possible. This is a typical situation in process industries, which are production-oriented. The higher the efficiency, the lower the costs and wider the margins. This is not the only rule, but it is one of the commandments. Process industries depend on scale of production and operating efficiency. These industries in general have few products. Production has to be continuous and not disturbed.

In the competitive arena, the efficient use of time and capacity (time availability and operating efficiency) are key points to success. Why? Because they significantly affect costs and margins when quality parameters are kept constant.

Operating efficiencies vary from 80% to 95% in mills. World-class mills have few stops, short time losses, and short maintenance shutdowns.

Let's look at a comparison between two mills of the same capacity and product, but running at two different efficiencies.

CASE STUDY I

Mill A

- Daily capacity: 2000 tons/day (maximum sustainable production)
- Average operating efficiency: 90% (running with pulp bale production)
- Average daily production: 1800 tons/day
- Total achievable yearly production: 655,000 tons/year

Mill B

- Daily capacity: 2000 tons/day (maximum sustainable production)
- Average operating efficiency: 80% (running with pulp bale production)
- Average daily production: 1600 tons/day
- Total achievable yearly production: 565,000 tons/year

Let's imagine both mills have the same variable cost, equal to US\$ 200/ton, and they sell pulp at the same net market price of US\$ 550/ton. The sales margin is US\$ 350/ton, but Mill B underproduces Mill A by US\$ 31.5 million. All specific costs are affected by production (depreciation, financial, logistics, raw material consumption, etc.). Imagine that mills A and B spend the same amount per year in fixed costs, for example, US\$ 80 million. The specific fixed cost/ton is US\$ 122/ton for Mill A and US\$ 142/ton for Mill B, a difference of US\$ 20/ton. Thus, efficiency in production really does make a difference in business results.

Raw materials (wood, chemicals, electricity, steam) are very much related to production efficiency. Losses and stops are sources of waste and generate extra costs in cleaning, quality, pollution abatement, etc.

Maintenance managers should know how much high maintenance costs affect the business. However, most of them know only how many dollars per ton are applied to repair maintenance problems. This is important knowledge, but it is not the most important.

A number of indices of maintenance performance have been developed over the years. Many are essentially administrative and technical, involving the measurement of performance and productivity (labor, lubricants, hours, machinery, inspections, downtime). Some are cost related: breakdowns; yearly shutdown; maintenance, both direct and indirect; manufacturing cost, as affected by maintenance cost; idle workers or machinery; overhead; inventory; and others.

Few companies give responsibility to the maintenance manager to judge whether poor business performance is due to poor equipment performance. This is supposed to be a job of production and accounting. However, for some reason, production people seem to

accept as inevitable "not so good performance" of equipment.

Let's look at some additional case studies.

CASE STUDY 2

Mill A has a vacuum drum washer that delivers pulp to the bleaching line with a consistency of 14%. Mill B has the same equipment, but due to vacuum problems, the pulp is delivered with 11% consistency. The filtrate following the pulp is considered to be similar, and the COD concentration is 1500 ppm. This means that both mills are delivering different carryover charges to the bleaching line. Mill A delivers 9.2 kg COD/ton and Mill B delivers 12.1 kg COD/ton. The difference in active chlorine consumption is roughly 1.5 kg/ton favoring Mill A. At the end of the year, with a production of 600,000 tons in both mills, the active chlorine consumption in Mill A is 900 tons less.

CASE STUDY 3

Mill A has wood chippers that generate 0.8% sawdust (based on dry wood) after screening. Mill B has some problems in the chippers (knives and blocks), and the sawdust removed is 1.5%. Both mills have consumptions of 1.2 million tons of dry wood per year. Mill A discards 9600 tons/year of sawdust and Mill B 18,000 tons/year. The difference of 8400 tons of wood is enough to make 4200 tons of pulp per year.

CONCLUSION

Due to high production rates in the pulp and paper industry, saved cents turn into huge dollar savings in the yearly figures. Are you sure that in your mill everybody knows and acts on this?

World-class maintenance requires open-minded and wide-view people. Learning experiences and different focuses are required. The management team must pay attention not only to traditional indices of maintenance performance but also how to improve business results (margins, returns on investment, cost savings, long-term costs, performances).

The management team must include, at a minimum, operation, engineering, maintenance, R&D, sales, purchasing, and accounting. An organization, to be a winner, has to focus on business performance, not on cutting costs until it sees what results it gets (or what lasts!).

Be simple. Don't waste time controlling everything. Do it cleverly and focus your attention on key points as an entrepreneurial team. A good entrepreneur needs to know how to invest money. All money has a cost, and the production team has to be aware of this. Money is not a gift provided by top management to buy a new "toy" (that is, equipment). Money is spent to have a return at least better than the interest rate the banks charge for it.

Maintenance management focused on business results may be the difference between being or not being competitive in today's global arena. But this is not the only game to play. Issues related to human welfare and motivation cannot be forgotten. Tj

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