

## **A strategy for profit**

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**Competition in the paper industry is fierce. New plants opening in the East have been designed with capacities that exceed the domestic markets they are targeting. This will lead to more cheap paper reaching Western markets, whilst less will be required from Western producers. More than ever, an effective strategy for maintaining or increasing profits is not just a tool for increasing shareholder value, but a must for survival.**

There are, however a number of options available for increasing profits in the paper industry. One route is to develop new products & markets. When they are new and expanding, these often give high margins with the opportunity to take a big market share. This can make it a big contribution to the profit stream until the market matures and moves towards commodity status. New products and markets require substantial development before they can be exploited. There is still a big risk that it could fail, or that a competitor's product beats it to market. This route can lead to big investment with a delayed return and although the prize can be big as well, sometimes the risks are too great, and there aren't the resources available for the required development.

Buying newer, more efficient machines & technologies can also assist the profit margin. Machine speeds and levels of automation are improving every year. The more efficient the machine, the more we can make with reduced labour and overhead costs, and hence increase profits through lower cost production. New technology, however, does not come cheaply. Equipment is expensive with installation and commissioning both costly and time consuming. Anyone who has been involved in commissioning knows that it is rarely trouble free and on time. When the benefits are offset by large depreciation costs, the net benefit is often small.

If we can't afford new equipment, and haven't any new market areas to break into, we might look at cost reduction. In the paper industry it is usual for raw materials to be the greatest cost. These costs are governed almost entirely by market forces. Without changing grade, substantial cost reduction is difficult. Labour costs might also come under scrutiny with such an exercise. Some reasonably quick gains can often be had through temporary labour and overtime, but even a headcount reduction of 10, which would be substantial for most mills and converting plants, would only give a saving of somewhere between £500,000 to £1,000,000.

### **More profit from your existing resources is possible**

A strategy that is often overlooked as a major driver on profit is that of improving the performance of existing processes. This improvement work is generally regarded as something which is done on an ongoing basis and which is slow at generating small improvements. Though it is true that most facilities are improving constantly, few are recovering the sort of profit that can be unleashed with a step change in process performance.

Performance improvement is both cheap and quick and can unlock some enormous potential, which is currently lying dormant across the whole industry. By using a measured, scientific approach coupled with an organisation focussed on success, that potential can be converted to profits.

### **Increase outputs by 20% across your company or division.**

Putting aside for the moment the question of whether a step change in performance is possible, take a look at the benefits of performance improvement.

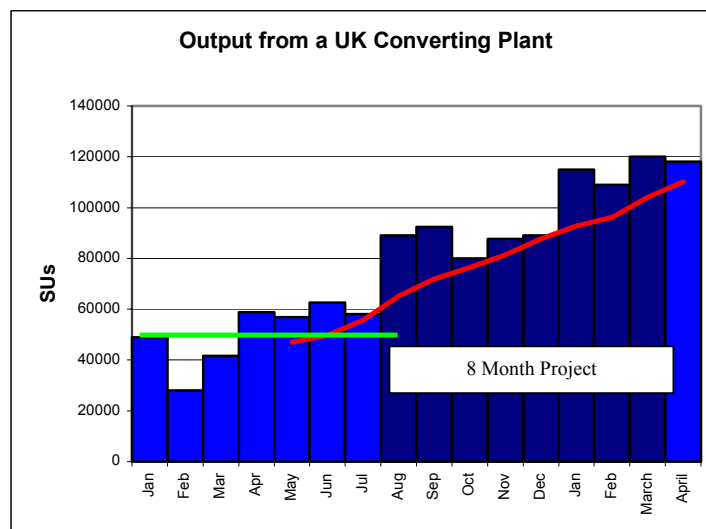
- 1) It requires no capital expenditure
- 2) It can happen quickly
- 3) It has a big impact on the bottom line

Process improvement is worth a lot of money. You are able to make more tons in the same time, with no extra labour costs, no extra rent, lighting, or overheads. In fact the only extra costs are raw materials, energy and shipping costs.

Let's take the recent example of a 20% increase in output achieved in a US paper mill. The mill was making 11,000 tons per month at an average sales price of \$480 per ton. Raw materials, energy and shipping were \$220 per ton. Even if they have to sell the extra tonnage at \$400 per ton, that still gives \$180 extra profit per ton, or  $20\% \times 11,000 \text{ tons} \times \$180 = \$396,000$  extra profit per month. Given that the average monthly profit was running at approximately \$100,000 per month, this is a huge increase in profits.

**This large step change in performance is possible in a few months.**

A €100M boxboard mill increased profits from €900,000 to €4.9M in 10 months. Another US mill increased profits by \$4.2M in 8 months. Profits from a UK tissue machine were increased by £1.5M in 4 months, and an extra £1.4M was made from a converting line in 8 months. These were achieved on a site with a £40M turnover. Across a large 7 site division a €16M profit increase was achieved on top of a €60M profit the previous year.



These are a few examples of plants who have profited from step changes in their process performance. More important than whether a step change is possible, however, is why it is possible.

### **There is hidden potential at every plant**

If a paper machine is running at 80% efficiency, then we would expect our recorded losses – waste, downtime, slow running etc - to add up to the other 20%. Frequently however, this is a false assumption. There are often a number of unrecorded losses and because they are unrecorded, they go unnoticed. There is the example of a graphics paper machine that makes master reels. Each master reel is then rewound into two reels of 30,000 feet. It would seem logical that the master reel was 60,000 feet. In fact it was 65,000 feet and the extra was put back into the pulper.

This loss went unnoticed because operators simply returned the extra to the pulper. The recorded time-losses had no entry for 'Time spent making master reel too long' and prior to their improvement project, no one had tried to consolidate the recorded losses with the lost performance. Only when they did this did they find this shortfall, and were then driven to find out where it was.

To resolve the problem, they installed a \$100 measuring device, which gave 60,000 feet plus 100 feet extra for the cuts. Hidden losses are often very easy to realise, since by their nature, no one has tried to do so before.

### **Major problems are often viewed as constraints**

When a problem is viewed as a constraint it is seen as a limit on performance and not something that can be solved. Comments such as "We can't go above 1000 m/min because then problem X occurs." And "Problem Y is just the nature of the machine – it has always been like that." are symbolic of these constraints. Problems X and Y are not being seen as problems, which can and should be tackled, but accepted as limits.

A further example is of a European tissue machine that was being run at speeds up to the point where drops of water were 'slinging' and deforming the sheet. This was accepted as the limit by the whole mill team. When asked to view this not as the limit, but as a problem, which they needed to solve, they soon devised a solution, which stopped this effect. This gave another 10% speed. Problems viewed as constraints are not always easy to solve, but by solving one or two problems, you can have a big impact.

### **Unsolved Problems**

There are always one or two problems, which are very difficult or complex and have not yet been solved. At a paper mill in the US, the team found that sheet breaks leaving the dryer were its largest problem. This was not one problem, but a series of different problems, each with a different cause. Because they had focussed on dryer exit breaks grouped together, no sensible pattern could be found to explain the breaks.

Video recording the process helped to help identify the causes. Each individual cause was noted producing a list of specific problems, which were investigated and solved. One identifiable fault was from stock drips creating lumps, which broke the sheet. This was solved by small modifications to the showers. Another was when operators broke the sheet whilst scraping the rolls, solved with a modification to the scraping tool.

### **Problems are often not prioritised correctly**

The way in which we decide what problems to work on and how much resource to allocate to them has a huge impact on success. Those of us who have spent any time in paper-making or converting facilities know that every day there are hundreds of different problems to tackle. Some of these are emergencies that must be dealt with immediately and some are recurring problems that the operators cope with. The challenge is in knowing exactly how much financial impact each one has, and evaluating the resource and effort required to solve

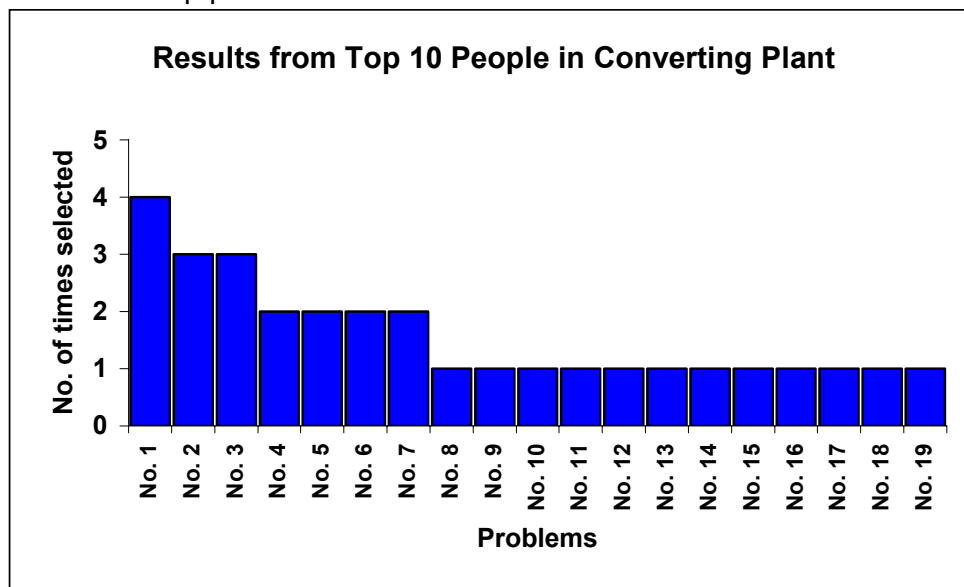
them. If this is not done well, then we cannot expect to get the best value from our efforts.

A useful test as to how well this is done is to independently ask the top 10 people in your company or division, the following 3 questions:

- 1) What is the total potential that can be achieved without capital expenditure if we ran perfectly, 100% of the time?
- 2) What are the top 3 specific problems on site?
- 3) What are these top 3 problems worth?

The result from the top 10 people in a paper converting plant is shown below:

- The top problem was selected 4 times with estimated values from



€50,000 to €750,000

- There are not 3, but 19 different problems mentioned
- The estimates of total potential varied from €1.5M to €17M (it was actually €24M)

A result like this means there is no clear picture of either the total potential within operations or the value of problems. There are likely to be some quick-wins from hidden potential and there will be relatively little progress made in

solving the known problems. Individuals will tend to have different motivations and objectives, since there is no priority list to which everyone adheres. In short it means there will be lots of potential for improvement.

### **How do we go about realising some of this potential?**

There are two things required to realise this potential:

- 1) An organisation, which is focussed on successful improvement
- 2) A measured, scientific methodology to drive it

### **Getting the whole team on board is essential**

An important aspect of the approach is to focus hard on the biggest problems and solve them in a short period of time. If the whole organisation is not behind this, then efforts can easily be hijacked or led astray by those who haven't been involved. This is not usually intentional, but the old priorities continue to get in the way. It will pay great dividends to start the project with all the key people together, understanding it, buying into it and giving their support.

### **A measured, scientific approach is necessary to get big results**

There are essentially three steps to improvement. Firstly you must calculate the total financial potential of your business, by understanding what could be achieved with no downtime and waste at full speed, and what it would be worth to recapture those losses. The next step is to calculate the financial impact of each individual problem, and rank them in order of value. Finally, the biggest problems, along with any quick & easy ones, must be solved.

At the start of a project it is worth having a dedicated team, including operators, fitters and management to go through these steps and make some significant wins. This creates the belief that these things are possible and highlights what the organisation needs to do to change to be able to deliver these big results by going forward. In the long term a dedicated team is not feasible or desirable,

and so these three steps must be integrated into everyday operations to ensure continued, maximised improvement. There should be a measurement system, which on a daily and weekly basis shows the total financial opportunity, and breaks it down into individually valued problems. This report should be reviewed regularly and the right decisions made in terms of what resources to allocate to which problems. Those people are then assigned to tackling problems, with the methods and skills to solve them quickly and permanently. The duration of the project might be anywhere from three months to over a year depending on the size of the plant, but the extra profits you will reap will more than make your efforts worthwhile.

### **Look at the potential**

When planning strategy for the coming months and years, the Paper industry must not ignore the potential that lies within existing processes. While there are many routes to improved profits, none have as few risks with such large benefits as systematically solving the problems, which unleash this potential. It will not necessarily be easy, and will require a strong, disciplined and open minded approach. But, in today's climate, the decision of whether or not to take it on might well make the difference between failure and resounding success.

THE END