

## Re-Thinking It All With 3P Cuts Costs For a New Facility

The best way to save money may be to avoid spending it in the first place. And the way to do that is to re-examine your plans and your processes before production begins, redesigning them from scratch to eliminate waste.

That approach enabled Venture Industries, a Fraser, Mich., automotive supplier of molded plastic parts, to save about \$1.25 million in 2003 off the cost of opening a new facility. The savings were achieved by using a version of 3P, a lean approach in which processes are re-examined from scratch and often completely redesigned to make them better and less wasteful.

“It is the piece of lean that most people don’t understand and most people don’t use,” says Joe Bione, who was chief operating officer of Venture at the time. “It’s getting back to the core roots of a process and changing the process itself.”

This approach can be valuable when applied to any situation that will involve a significant capital expenditure, Bione says — the launch of a new product, an upgrade of an existing product, the opening of a new plant.

“Any time that you launch a new process — because of a new product, or you are moving a product or manufacturing from one site to another — this process seems to make a lot of sense,” says Sarah Muellerleile of Step3 Consulting, which worked with Venture. “What you are doing is taking a quick look to simulate what you are about to do and make sure that it makes sense.”

### Six Steps

Saving costs and improving operations were urgent priorities for Venture, which filed for bankruptcy protection in early 2003. Bione, a turnaround specialist with consulting firm Whitehall Group, was hired as interim COO, serving in that capacity from April to November of that year.

To find savings, the company followed a process developed by Step3 called Capital Investment Optimization — what Muellerleile describes as a variation of 3P (which some experts say stands for pre-production planning, while others say it means production preparation process).

Muellerleile contends that 3P “had a lot of steps that could be condensed or that could be streamlined,” and that the matrices sometimes used for evaluating alternatives under 3P could be complex and cumbersome.

She also comments, “One of the things we’ve incorporat-

ed that I didn’t necessarily see in the 3P process is we set very strict timelines. You decide ahead of time how long it should take. You give the team a goal: ‘In the next three hours, we will do all the brainstorming.’ That forces team creativity during that time. It allows them to know that this will not be one of those never-ending things.”

The Step3 process consists of six steps:

1. Collect data.
2. Brainstorm process alternatives.
3. Evaluate and down-select process alternatives.
4. Simulate.
5. Establish an implementation plan.
6. Present results.

At Venture, the process was being applied to planning for a new facility to manufacture a new door panel. The data col-

lected in the first step led to calculation of takt time. Executives determined that annual volume was expected to be 244,000 units, which must be produced at times matching the customer’s hours. That meant two shifts with a downtime of 40 minutes per shift, which translated into a takt time — the time available to produce one product, based on demand — of 52 seconds per door.

The second step of brainstorming involved coming up with a myriad of cell designs, which — in the third step — were narrowed down to two. Simulations of both of those two were then created (with cardboard, paper and other materials). The results of the simulations were evaluated to determine which plan was the best for producing the panels within the required takt time.

In the fifth step, the team selected a new layout and made some tooling and staffing adjustments immediately. The implementation plan also included a proposal to redesign a parts rack and a request to change the design of the door armrest.

The presentation of results demonstrated that the new cell design:

- changed the original plan of 10 machines and four robots to eight machines and four multi-head sonic welders, saving nearly three-quarters of a million dollars.
- Reduced the number of operators required from 36 to 24, saving more than half a million dollars.
- Trimmed the amount of floor space required by 25 percent.

### Resistance, Always

Both Bione and Muellerleile say the biggest challenge in implementing the process was not any of the steps, but the cultural issues.

That was partly because Bione started applying the process

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**Joe Bione  
Whitehall Group**

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at literally the 11th hour in establishment of the new facility.

“Nothing was standing still,” he explains. “The customer was waiting for product, the banks were trying to approve money, everything was going on at the same time. (The plant) was acquired, it was being retrofitted, equipment was on order, it was all spec’d out. We were ready to launch. When I told the team to stop and bring these folks (Step3) in, I didn’t look like the sanest person in the world.

“There is always resistance due to ownership, pride, the fact that we were out of time. All those reasons.”

In addition, he notes, “all these people (working at the plant) were trained in lean manufacturing. That was one of the negatives — everybody feels capable.”

But in the end, he boasts, the plant was reconfigured and “we ended up making it on time and saving a lot of money — and producing a better product. If there is a message here, it’s that you can cut costs and still improve quality and delivery.” (Venture is still in bankruptcy protection and is working to develop an exit filing.)

Muellerleile believes the factors making the 3P process work include the fact that the people who are actually involved in production were part of the process, including the simulations: “Everybody learns differently. Simulating a new process before it goes in and getting all the key stakeholders involved, you have lots of different eyes looking at things from different points of view.”

However, it is a challenge to get people to recognize that re-examining everything from scratch is important, Bione says.

“If you wonder why people who do turnarounds like I do are successful, we understand that,” he comments. “Coming in from the outside and thinking outside the box, and challenging the way people do things, even if they do them right — that’s the difference between the Japanese and ourselves. They constantly are thinking. We think of the Japanese as always tweaking and leaning, and yes, they do that, but they always think outside the box. We just don’t get that piece of it as Americans. It’s a cultural thing; we just don’t want to listen to it.”

Muellerleile says that while the capacity increase from using the 3P process at Venture has been “phenomenal,” she also believes that what she calls the “soft” benefits are significant.

“One of the soft benefits that I’m personally most pleased with is that you can have people that are in the line, directly involved in setting up the line, and it gives them a lot of pride of ownership,” she states. “It avoids that yo-yo staffing. You avoid staffing a line, then having to take people out of the line, with them wondering ‘is my job in jeopardy?’ There’s a lot of ambiguity and concern that goes away when you staff the line properly in the first place. People are empowered when they are involved from the start. There is much less likelihood of that ambiguity.” ■

## Takeaways

- Re-examining a process from scratch can produce significant savings.
- Simulation is an essential part of evaluating new ideas.
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