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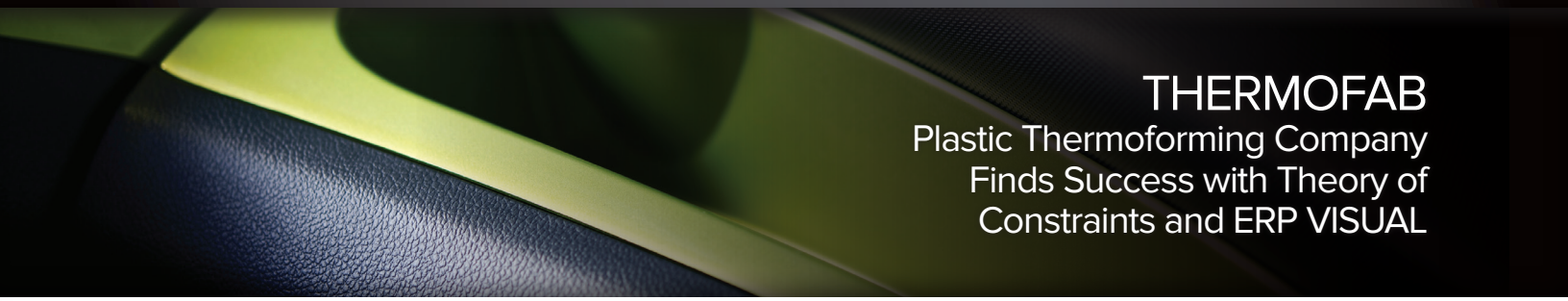
CASE STUDY



THERMOFAB
Plastic Thermoforming Company Finds Success with Theory of Constraints and ERP VISUAL

"Only 39 days to transform ThermoFab into a company that can manufacture at warp speed, faster than any of our competitors. We have exceeded all of our plans and expectations."

TOM KING, PRESIDENT, THERMOFAB

About the company

ThermoFab specializes in the thermoforming of high-quality plastic enclosures for a variety of products in various industries. While looking to improve profitability and operational throughput, ThermoFab turned to the Theory of Constraints (TOC) management strategy and VISUAL DBR, the TOC production scheduling software within Infor ERP VISUAL.

Results were impressive and immediate. Average lead-times decreased by 50%, sales are up, and on-time performance is close to 90%

Company: **ThermoFab**

Address: **76 Walker Street, Shirley, MA 01464**

Website: **www.thermofab.com**

Number of Employees: **35**

Products & Services: **Plastic thermoforming**

Challenges

ThermoFab specializes in the thermoforming of high-quality plastic enclosures for a wide range of medical, industrial, and computer products. Located in Shirley, Massachusetts, the company believes in achieving perfection and strives to be a leader in the thermoforming industry through its use of innovative and award-winning design and manufacturing techniques.

Concerned over increasing competition from Chinese manufacturers and the shrinking available market, ThermoFab realized it needed to make dramatic changes to solidify its leadership. ThermoFab president, Tom King, researched various business strategies and became interested in the Theory of Constraints (TOC), a management strategy developed by Dr. Eliyahu Goldratt. King realized that TOC was a solution that could help differentiate the company and began implementing the strategy. The changes he saw were significant.

"By incorporating TOC, we were able to perform some fast turnaround times," explains King. "We started receiving our raw materials once a month and ordering materials more efficiently. We also made ourselves a complete thermoforming solution for our customers by creating an in-house painting facility and employing cell manufacturing techniques."

Even with these improvements, ThermoFab was still well below the 100% on-time delivery rate that it hoped to achieve. It was also still expediting more than it wanted. With a company culture based on continuous improvement, ThermoFab sought ways to improve its efficiency.

The Solution

ThermoFab had been a ERP VISUAL user since 1998, when it purchased the software solution to help streamline operations. In May 2003, King decided to attend a seminar where Eli Goldratt and Richard Lilly, then CEO of Lilly Software Associates, discussed the Theory of Constraints and talked about how VISUAL's DBR software could help make a dramatic difference in plant throughput. King

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recognized that TOC and the corresponding production scheduling techniques known as Drum-Buffer-Rope (DBR) worked successfully in a job shop environment. He had already seen great results on his own and wanted professional assistance to receive higher returns. King brought the message back to his staff in June and signed on for a 'Fast Track' implementation with Lilly Software early in August.

"Our goals were to improve on-time delivery, improve customer service, increase sales, and reduce our lead-time to a level our competitors could not match. I knew TOC and DBR would take us there and position us ahead," says King. "Our competition had just started talking about Lean. We have been using Lean principles for ten years. We wanted to take our operations to the next level."

ThermoFab went "live" with the software on September 16th, only 39 days after it signed the contract with Lilly Software. "Only 39 days to transform ThermoFab into a company that can manufacture at warp speed, faster than any of our competitors," reports King. "We exceeded all of our plans and expectations." The original „go-live' date was set at the end of October. It beat that date by 50 days.

The company's transformation has been due entirely to the hard work and dedication of the employees and the support of the VISUAL implementation team, including valuable contributions from Synergy Resources professional. "They really had their act together," King says, referring to the VISUAL implementation team, which trained ThermoFab employees on DBR concepts and worked with them to inject the DBR process into their everyday procedures. "They approach DBR from a „real world' manufacturing background"

The Results

ThermoFab saw significant benefits from applying TOC and implementing Infor VISUAL DBR® immediately after the implementation, and its continues to see the benefits years later. In an effort to adapt to the new principles, ThermoFab changed the way it assigns and controls work in the plant. With these changes, the average lead-times for the high-quality pressure-formed plastic enclosures that the company makes have decreased roughly 50%, from 6 to 8 weeks down to 2 to 3. With one particularly difficult part, ThermoFab reduced the manufacturing time from 4,5 to 5 days.

"We produce thermoformed plastic parts and assemblies where the volume doesn't justify injection molding and other high-volume techniques," says King. "Typically, we'll produce 50 to100 units per month for a customer but we have some products that we do in lots of as few as 5 units. Our lead time was 6 to 8 weeks, and up until we started using DBR, we had a very difficult time making good on those promises. All of a sudden, with DBR, we're shipping everything on time—even the „rush' orders."

When ThermoFab first started using the techniques, it believed the biggest constraint was in the paint prepping area. After working through late orders, it quickly realized that it was producing parts faster than sales and that the real constraint was the market. In the first month of TOC consulting and through re-evaluating its business using throughput measurements, ThermoFab was able to recognize hidden profit and take on new business. With old cost accounting methods, ThermoFab had been turning away orders that appeared to offer low margins. With more accurate business metrics and improved delivery, the company realized these jobs could be profitable and added10% revenue in the first three months of using DBR.

With shorter lead-times and more scheduling flexibility, ThermoFab offers its customers what Goldratt refers to as the "unrefusable offer." "If we don't ship on-time, we offer to pay a penalty," says King. "This shows our commitment to quality and service. With one of our most strict customers, we offered them a contract to ship twice-a-month instead of once-a-month. We put the unrefusable offer on the table and got a one-year contract and a price increase."

With the software is in place to support the DBR way of managing production, ThermoFab is enjoying the results of its efforts. "Sales are up 100%," states King. "Our on-time performance averages 97.5%. And we're years ahead of our competition. But King continues to strive for more. "We can always improve more. After operating one way for 25 years and then using DBR for only 3 years, we find it hard to believe the dramatic improvements we continue to see. I recommend TOC for every-one but my competitors!"

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