# Best Practices: FPI Thermoplastic Technologies: A Rebound With an MEP Assist

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**When this New Jersey-based injection suffered a critical loss of business, it turned to its state Manufacturing Extension Partnership program for help. Now the company is a competitor on the world market.**

Culture change can come in many forms. While it’s often driven by the need to improve poor production techniques or simply by new leadership, sometimes it takes place when a company learns the hard way that its business strategy is about to self-destruct. This is what happened to Sebastian Murray, president of FPI Thermoplastic Technologies, a Morristown, NJ-based plastic injection molding company, after a 1999 meeting with a key customer turned his world upside down.


Prior to the fateful meeting, Murray’s privately held, standalone company had evolved from a 100% custom operation making a wide variety of small-lot plastic parts to one that produced a blend of custom and highly successful proprietary products. The proprietary business included the company’s Cosmepak line of molded cosmetic boxes and organizers, sold in retail outlets to girls aged 13 to 21. By the end of the decade, thanks to exceptional sales through one of the nation’s largest mass merchandisers, the Cosmepak line dominated the company’s profits by a wide margin. “It was a glorious time,” says Murray, who estimates that Cosmepak sales made solely through the single mass merchandiser’s chain accounted for a third of the company’s overall volume.

Then came the letdown. When Murray and his brother Sam, a co-owner, were summoned to the retailer’s headquarters in 1999, they assumed the call was to attend a standard update meeting. When they arrived, however, Murray says he had a bad feeling when the group “didn’t meet in the layout room,” referring to the retailer’s store-like setting where product placement is determined for upcoming selling seasons. An executive took them to a cubicle instead, says Murray, “and told us, ‘I’m sorry to inform you we’re eliminating your product from our shelves and will be sourcing everything we buy from you, from China.’”

Even today, Murray struggles to describe the shock of hearing the news and how he and his brother tried to convince the executive to reconsider. He calls the encounter “probably the most undignified moment of my life.” The two headed home, exasperated because they believed they could have beaten the Chinese pricing if given the chance, and scared because, in the blink of an eye, a third of their business disappeared.

As the severity of the blow sunk in, the Murrays realized they were ill-prepared to deal with its consequences. Since taking over the business from their father in 1995, the brothers had experienced only growth. They had never needed to make significant changes in strategy, in their 85,000-sq.-ft., 1940s-era facility or in FPI's tenured workforce. They had also never worked anywhere else. As a result, the loss of income "was a major threat to our business," says Sebastian, and not only because of the brothers' inexperience. In addition, competition from other injection molders, especially from overseas, was intensifying. Now fully responsible for the livelihoods of the plant's workers and extended families, the two agonized over exactly what to do. But their luck had not run out. Help soon appeared, literally on the company's doorstep.

"By happenstance," says Murray, "because we were this supposedly successful company, the director of our county chamber of commerce came here days after our trip with a group of local business people to see how we could work together." Among the bankers, college officials and others in the group was a representative of the New Jersey Manufacturing Extension Partnership (NJMEP), part of the federally funded MEP program run by the Dept of Commerce's National Institute of Standards and Technology that helps states develop and improve their manufacturing bases (see sidebar [1]). The rep happened to have plastics-industry experience, "So of all the people there, I connected with him," says Murray.

The rep outlined how MEP's low-cost, broker model of manufacturer partnership programs could be a win for both FPI and the state of New Jersey. He said NJMEP was prepared to offer direct assistance in as many as six key business areas, using both on-staff experts and pre-approved outside consultants. The state could also help with low-cost refinance packages. And it could step in immediately. Murray was sold. After the meeting he contacted Bob Loderstedt, NJMEP's Newark-based president, and engaged the group to help them prevent an FPI meltdown. When Loderstedt arrived at FPI, he says he saw plenty of good things about the company that the Murrays simply needed help to recognize and develop.

"This is not about incompetent management," says Loderstedt. "And the plant was not archaic. It's about what often happens to manufacturing companies at some point in their evolution, where they forget to continually diversify the customer base. It's about talented people who become tactically involved in the business and don't periodically step back to look at it and take measurements. When we came in," he says, "we saw a good manufacturing company with good products, that had the ability to innovate, but got whacked over the head with a two-by-four (at its customer meeting). So we listened, and we said, 'You need us to help you step back and say, What do we do? Where do we go?"

Loderstedt says the MEP approach worked for FPI and works for other small manufacturers because it costs less than independent consultants, it does not push particular programs or services, and because it takes a holistic approach to solving a manufacturer's problems. "Many times, consultants will focus only on getting cost out of the operation," he says. "We do more than that." NJMEP's strategy, over time, addresses six key areas of operation: strategic and financial; product-succession planning; human resources; manufacturing; IT; and distribution and marketing. Loderstedt determined that FPI's most pressing problems were strategic and financial.

“The first thing we decided to do was generate sales,” says Murray. “We had to immediately replace the lost revenue from our biggest customer.” So NJMEP suggested making acquisitions in order to more rapidly replace sales. It helped FPI find two smaller injection-molding companies in the area that it was able to roll into FPI using long-term buyout financing. “So they immediately diversified their customer base,” says Loderstedt, “but stayed within their niche. It was a win for the other companies, too, because they were struggling.”

At the same time, NJMEP worked with FPI to improve cash flow and cut unnecessary expenses. An outside warehouse operation that was costing the company $40,000 a month was the first to go. “We shut that down and sold our excess inventory,” says Murray. “We then put in place inventory-control methods in this building that further improved cash flow. Right away we improved our inventory turns from once every three months to once every two months.”

Eliminating the warehouse also meant production strategy needed to change. But the Murray’s had no concept of how good or bad their operation really was. They had never measured work processes or results, and didn’t know exactly what could be accomplished by their workers or equipment.

“One of the first questions Bob asked was, ‘What are your sales per employee?’” says Murray. “So we had to figure out what that was. Then he told us there were industry standards for this, so we found the plastics-industry standards and checked them, which we hadn’t before, and found that sales ran from $75,000 per employee to $125,000 per employee. Ours were below $75,000 per employee, which meant our sales were lousy and we had too much labor.”

The solution NJMEP recommended was to phase out the company’s traditional batch-production methods and replace them with lean-based operations.

“Bob and his group brought in some lean consultants, we studied the plant floor and focused on two major operations here,” says Murray. “These were our point-of-purchase [p-o-p] cosmetic displays and our fire safety and security group [smoke-detector assemblies and related products]. We changed product flow and labor for these two operations and quickly cut costs by 15% on the p-o-p line and 10% on the other. Because of these improvements, we were able to expand those customers dramatically,” he says, noting that FPI now makes major new products with both of them.

Murray credits the implementation of lean manufacturing as having the most significant impact on FPI's salvation. It was also the company's great good fortune to have a long-time staff that understood the company's dilemma and was able to make the changes work. "We accomplished lean through our operations group," says Murray, "where we have individuals who have been with us 15 to 20 years in a supervisory capacity. It was just a matter of rolling up our sleeves, going to the floor and implementing change, and managing it on a daily basis with competent people."
Murray also credits the company's union (the International Chemical Workers) for helping smooth the delicate process of transitioning employees to the modern work methods. "They're part of our program and strategy," he says. The union helped its members weather the inevitable cutbacks at the company, when FPI trimmed its 1999 staff level of 180 to under 130. As its improvement efforts began to bear fruit, FPI was able to rehire many of those who were laid off. Now, the employment level is up to 150, and sales per employee at an all-time company high of $133,000.

While the shift to lean was the key factor in FPI's rebirth, another important element was its ability to develop new business. "We knew that in order to survive, we had to compete with China and the Far East," says Murray, meaning it had to be able to quickly deliver high volumes of product at the lowest cost. Murray decided to push the company in three new directions: It took on additional complex work (by performing assembly functions for its fire and safety customers as well as molding product); it increased the fast-turnaround work required by retail chains (and now weekly ships its injection-molded lipstick displays to some 30,000 drug-chain outlets); and sought to serve food-industry customers, a new market for the company. But the products FPI would make for the food industry – plastic trays for a major fast-food chain, paper-towel dispensers, and others – required a significant investment.
"This business required us to automate," says Murray, "and to institute robotics." Thanks to its NJMEP connection, FPI was able to refinance its debt, which allowed the company to invest in automated molding machines and robotic arms that remove molded product from machinery and place it in position for employee finishing and QC. "We used to do this all by hand," says Murray. "But by eliminating this component, we lowered the cost, improved the cycle time and improved quality."

The investment helped put FPI in the world marketplace. It now manufactures 2 million trays per year for the fast-food chain, which is 50% of its worldwide tray requirements. It's business the company has had only since 2000. Murray says he has visited the chain's operations as distant as Israel and seen the familiar brown trays with his company's numeric code on the bottom, "which I found staggering," he says, "because you have low-cost manufacturing in China, Vietnam and India, all of which are closer to Israel than New Jersey."

FPI is now well into product-succession planning, the third of MEP's six-sided strategy. "They've demonstrated the capability to work with clients to develop new products as well as to extend existing product lines," says Loderstedt. "In fact, they are probably as close as they can get right now to leading their clients as opposed to following. No one really gets that far ahead, but they understand continuous improvement and that they have to continue to be low-cost if they're going to keep their large accounts. They sit, they listen, they talk, and they come up with ideas." They also measure.

"The most important thing we weren't doing before was measuring," says Murray. "Now, we measure every aspect of this business: sales, receivables, labor, efficiency, every aspect daily. And it's not just me and Sam. We've spread that concept throughout the operation. All the supervisors and all the managers know to make these daily measurements."

Murray's next goal is to complete FPI's ISO 9001-2000 certification, which he expects will occur in December, then to focus on encouraging FPI's customers and suppliers to make the same kinds of improvements FPI has. Loderstedt says NJMEP also "has some assessment tools that are not that costly that can tweak their thinking about HR, and how they'll want to maintain, motivate and attract employees as the business goes. You're never done," he says, "but we can point to areas where we've had impact, and other areas where we need to start discussions." An issue in the plastics business that will keep him firmly focused on continuous improvement, says Murray, is the volatility of oil prices. "Because plastic resin is tied to the price of oil, rising raw material costs is now our biggest threat." Murray stresses that virtually all of the company's future plans include their relationship with NJMEP. "NJMEP taught Sam and I how to run this business," he says, "and our relationship will be ongoing. We go from one project to the next." He says he speaks regularly with Loderstedt. "If you do it right," says Loderstedt, "you're continually in touch. We believe in transformation. We don't want to be transaction based. We won't go into a company, introduce value-stream mapping, then go away. It may be a project a year or every few months, but we are helping to transform that business."

Loderstedt says the Murrays are a good example of how small manufacturers can benefit from MEP. "The most important transition that occurred here is that they have grown professionally," he says. "I would put Sebastian up against any CEO in small manufacturing. He understands how you have to touch the business and have the systems in place. Now, Sebastian is driving the business," he says, "whereas before, the business drove him."



**Links:**

[1] http://www.impomag.com/scripts/ShowPR.asp?PUBCODE=032&ACCT=0000100&ISSUE=0409&RELTYPE=CS&PRODCODE=0000&PRODLETT=B