

# Graphicast<sup>INC</sup>

## Case Study

### Graphicast Reduces Order Backlog, Improves Customer Service and Expedites More Orders Using Protected Flow Manufacturing™

#### Facts at a Glance

**Challenge:** Scheduling

**Solution:** Protected Flow Manufacturing™

**Industry:** Industrial Casting



***“We started out with the jobs being four weeks late. Right now, the jobs are within a week. It’s a very consistent, continual flow with no wasted time at all. We can actually see the system improving!” - Val Zanchuk, President.***

#### Challenges:

According to Graphicast President Val Zanchuk, there were three major challenges facing the business in 2017:

The first challenge was created when Graphicast was flooded with an unexpected surge in customer orders. Although the company welcomed the new business, the ensuing backlog created a problem. *“We started hiring people which in today’s market is difficult to do,”* recalled Mr. Zanchuk. *“It took some time to do that. We added overtime and boosted capacity but it was not nearly enough to meet that demand.”* Added capacity was insufficient: Graphicast also needed to find a way to improve throughput if the company wanted to reduce the order backlog.

The second challenge was to improve customer service. Graphicast needed to more confidently answer the customer’s question, *‘When is my job going to be done?’*

The problem was that Graphicast’s legacy ERP system featured a scheduler that did not account for variability. Disruptions such as employee sick days or machine downtime could easily throw the entire production schedule out of control; in turn, making it difficult to say with precision when its customer’s orders might be completed. Graphicast understood that it needed a scheduling solution that could dynamically adjust to changing real-world conditions.

The third challenge was to offer better lead times. Mr. Zanchuk knew that some customers might be willing to pay premiums to have their orders expedited from time to time. To harvest the opportunity, Graphicast needed a solution that could prioritize customer orders without causing other jobs in the production schedule to be late.



After carefully weighing its options, Graphicast decided to implement Protected Flow Manufacturing™ (PFM) by LillyWorks, a software developer with 55+ years of innovation in the manufacturing industry. PFM is a revolutionary Cloud-based manufacturing execution and planning system that displays real-time production priorities to minimize wait times and maximize on-time deliveries. In fact, since Graphicast's implementation of PFM in 2017, the company has made significant progress in solving all three of its critical business challenges.

## Results:

### *PFM Quickly Reduces Unexpected Backlog*

PFM was implemented at a time when Graphicast had booked three-month's worth of orders in a single month. Adding to labor capacity had proved insufficient. Mr. Zanchuk hoped that PFM's scheduling methodology could help the plant prioritize jobs, deliver more orders on-time and reduce backlog. *"It's not that we didn't love having the orders. We just didn't love having to do them all at once!"* recalled Mr. Zanchuk.

In fact, PFM's integration with Graphicast's legacy ERP empowered the company to quickly take decisive action. Although Graphicast knew it would take time to reduce the backlog (because the number of pending orders exceeded capacity), PFM showed how to prioritize those specific jobs that were most threatened by late delivery. In this way, PFM helped Graphicast methodically reduce its backlog with the least impact to its valuable customers.

*"The results were immediate,"* said Mr. Zanchuk. *"We went from four weeks late to three weeks late to two weeks late to one week late,"* he marveled. *"And now I can look out one month and see that we're going to be one day, two days late on this job; but on time for that job."*

Mr. Zanchuk plots on-time shipments for every day of the month. Using PFM, on-time deliveries have gone from 45 percent the first month to 75 percent the following month. The goal is to get to 95 percent on-time delivery with no backlog. *"By the end of the year we should be back on track,"* stated Mr. Zanchuk.

### *PFM's Predictor Solves the Riddle When a Customer Asks, 'When is My Job Going to be Done?'*

PFM features an application known as the 'Predictor' which highlights specific issues with jobs that may cause them to be late. The Predictor takes Graphicast on a walk through its shop into the future, simulating what jobs will be worked on when; and what, if any, obstacles each job will encounter along the way (such as not having enough material or machine capacity).

Mr. Zanchuk said, *"We run the Predictor, which only takes a few minutes. We have a very detailed description of how every job is going to run."* Graphicast uses the Predictor to see how and when each job will be run through each resource based on what each individual job's priority will be in that future moment in time. That shows where bottlenecks will be, and shows at what point each job is predicted to complete all their operations. The predicted completion date/time of the last operation is when the job is most likely to finish: *"That solved the customer's question, 'When is my job going to be done?'"* said Mr. Zanchuk.





### **Graphicast Uses PFM to Offer Better Lead Times**

Mr. Zanchuk explained that PFM has empowered Graphicast to more intelligently schedule jobs. As a result, plant throughput has accelerated. *“PFM has put everything in the right order; to get in and out as fast as possible,”* said Mr. Zanchuk.

In fact, Graphicast has witnessed a drastic reduction in the number of late orders leaving the plant since using Protected Flow Manufacturing. The benefits were achieved without adding significantly to Graphicast’s plant, equipment and labor resources.

*“We started out with the jobs being four weeks late. Right now, the jobs are within a week,”* said Mr. Zanchuk. *“It’s a very consistent, continual flow with no wasted time at all. We can actually see the system improving!”* enthused Mr. Zanchuk.

With its order backlog virtually eliminated, Graphicast has turned its focus to ever-shorter lead times. *“Now that we’re getting out of being late, we’re getting into shorter lead times. Can we operate more efficiently? How much excess capacity do we want to maintain?”* asked Mr. Zanchuk.

The answers to these questions are important. Many customers are willing to pay more to get their orders filled in less time. With Protected Flow Manufacturing, Graphicast has become well-positioned to earn more in exchange for providing expedited services to customers.

Protected Flow Manufacturing’s Predictor tool shows where other jobs in the queue may be negatively impacted by expedites. Graphicast uses the Predictor to determine if and when the company may be able to process new requests for expedited orders and earn an associated expedite premium.

*“Using the Predictor, we can very easily say, ‘Yeah, we’ve got the capacity to add that in’,”* explained Mr. Zanchuk. *“If the customer asks, ‘Can you pull my job in four weeks?’ then we can test it. The Predictor can tell us if we’re disrupting the rest of the system.”*

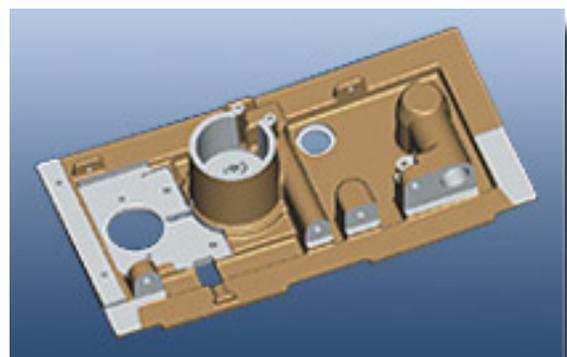
*“When we tell the customer that we can have their job in three weeks [less time, rather than the original four weeks requested], they’re usually happy about that,”* said Mr. Zanchuk.

### **About Graphicast:**

Graphicast Inc. is a single source provider of finished components to OEMs of commercial and industrial products. Located in Jaffrey, New Hampshire, Graphicast offers Zinc/Aluminum alloy (ZA-12) custom parts that are cast in graphite permanent molds using its proprietary LTA™ casting technology. Better materials, better process and better parts are all part of the Graphicast advantage culminating in rapid turnaround and lower total acquisition costs.

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## **Contact Us**

for more information or to schedule your demonstration of how Protected Flow Manufacturing can help improve your company’s bottom-line results today!