

Peregrine: The CNC Machine Decision

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INTRODUCTION

It was another sleepless night for Brian French. As a new father, French had grown accustomed to sleep deprivation, but on this night, it was his business—not his newborn daughter—that had him tossing and turning. French was the president and co-owner of Peregrine, a Vancouver-based manufacturer of custom retail displays that were used in stores, banks, and art galleries (Exhibit 1). Peregrine had been working on a display for Best Buy when one of the company's two computer-numerical-control (CNC) machines broke down (Exhibit 2). When the machine went down, French watched progress on the Best Buy job slow to a halt. Although French had been assured that the CNC machine would be back up and running within 24 hours, the breakdown revealed a deeper problem: the CNC machines represented a major bottleneck for Peregrine, and if this machine was down for more than the promised 24-hour period, the Best Buy job could not be completed on time, and workers would need to be sent home. French was frustrated by this predicament and was determined to make the changes necessary to ensure it would not happen again.

PEREGRINE

In 2012, French left PricewaterhouseCoopers to purchase Peregrine along with two co-investors. The investment team had been looking for an opportunity to purchase a company with a successful track record and a founder who

was ready for retirement; Peregrine had fit the bill. Founded in 1977, Peregrine had been operated profitably for 35 years in downtown Vancouver, British Columbia, Canada. In Peregrine, the investors would be acquiring a company with a history of success and an experienced team that had expertise in manufacturing a wide array of custom plastic products.

When Peregrine was acquired in 2012, it had employed 6 people and had \$600,000 in sales. Under French's management, the company had grown to more than 30 employees and more than \$6 million in sales by 2016.

THE CNC MACHINE DECISION

When the CNC machine broke down, it was a wake-up call for French. The production line was dependent on both CNC machines working full time—if they slowed down or needed repair, the business suffered. French believed the key to relieving this bottleneck would be increasing capacity. It not only would prevent downtime but also would allow the company to take on new business. If capacity increased, French estimated that sales revenues would rise by at least \$50,000 per month due to unmet demand and increased efficiency. The company's margins on the additional revenues were expected to be 35%. French saw three viable options to increase capacity:

1. Purchase an additional CNC machine for cash,
2. Finance the purchase of an additional CNC machine, or
3. Add a third shift (a night shift) to better utilize the two CNC machines Peregrine already owned.

French considered the details of each option, keeping in mind that for long-term projects he would use a discount rate of 7%.

OPTION 1: PURCHASE A NEW CNC MACHINE WITH CASH

Although it would be costly, the idea of adding a third CNC machine appealed to French. It would provide him peace of mind that if there were a breakdown, jobs would continue on schedule. French's preliminary research revealed that the cost of the new equipment would be \$142,000. He also estimated that there would be increased out-of-pocket operating costs of \$10,000 per month if a new machine were brought online. After five years, the machine would have a salvage value of \$40,000. Although Peregrine did not have the cash readily available to make the purchase, French believed that with a small amount of cash budgeting and planning, this option would be feasible.

OPTION 2: FINANCE THE PURCHASE OF A NEW CNC MACHINE

The company selling the CNC machine also offered a leasing option. The terms of the lease included a down payment of \$50,000 and monthly payments of \$2,200 for five years. After five years, the equipment could be purchased for \$1. The operating costs and salvage values would be the same as option 1, the purchasing option. The company had the necessary cash on hand to make the down payment for the lease. With both the leasing and purchasing options, the company had sufficient space to operate the new equipment, and French believed he had almost all of the right employees in place to execute this plan.

OPTION 3: ADD A THIRD SHIFT

French and one of his co-investors had extensive experience in the trucking industry and had seen firsthand the effect of utilizing equipment around the clock. French believed adding a third shift could unlock a lot of value at Peregrine, and it could be done at a low cost. Adding a third shift would involve moving several existing employees to work the night shift and would also mean hiring some new employees. Although French believed that in time he may add a full third shift to increase overall capacity, his initial plan was for the night shift to run as a "skeleton crew" with the primary purpose of keeping the CNC machines operational for 24 hours. He believed that adding a third shift would produce the same increase in revenue as adding a new CNC machine to his existing shifts. He estimated that adding a third shift would create \$12,000 in additional monthly out-of-pocket operating costs, but no new machinery would need to be

purchased. Based on his trucking experience, French knew this option would be difficult to execute, as there were major safety and supervision challenges associated with running a night shift.

MOVING FORWARD

French wanted to get moving on a solution and arranged a conference call with his two co-owners. He knew his co-owners would be eager to learn the numbers behind each option, but he also knew that nonfinancial information would be just as crucial in making a recommendation. Before the call, French sat down at his desk to fully analyze the options.

ASSIGNMENT QUESTIONS

1. Without using any numbers, identify the strengths and weaknesses of the three options identified by French. Are there any other options French should consider?
2. Compute and compare the net present value and payback period of each option.
3. Make a recommendation for French.
4. Rounding to the nearest 1%, at what discount rate does leasing produce a higher net present value than paying cash?

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Exhibit 1. Examples from Peregrine's Portfolio

Vancity Sign



lululemon Storefront



Display Case in the Vancouver Art Gallery



Phone Display Cases and Stands at Telus



Sign and Display Tables for Simply Computing



TED Sign at the Vancouver TED Conference



Source: <http://www.peregrine.build/portfolio/>

Exhibit 2. CNC Machine



One of Peregrine's CNC machines—a flatbed nesting router.

For a video demonstrating the capabilities of this type of machine, visit www.youtube.com/watch?v=NY-nGT8_ZcQ.