**Case Power Train, Ltd.**

We have smashing systems for reporting, tracking, and controlling costs on design projects. Our planning of projects is better than any I have seen at other companies. Our scheduling seemed to serve us well when we were small and we had only a few projects. Now that we have many more projects and schedule using multiproject software, there are too many occasions when the right people are not assigned to the projects deemed important to our success. This situation is costing us big money, headaches, and stress!

*Claude Jones, VP, Design and Operations*

**HISTORY**

Power Train, Ltd. (PT), was founded in 1970 by Daniel Gage, a skilled mechanical engineer and machinist. Prior to founding PT he worked for three years as design engineer for a company that designed and built transmissions for military tanks and trucks. It was a natural transition for Dan to start a company designing and building power trains for farm tractor companies. Today, Dan is no longer active in the management of PT but is still revered as its founder. He and his family still own 25 percent of the company, which went public in 1998. PT has been growing at a 6 percent clip for the last five years but expects industry growth to level off as supply exceeds demand.

Today, PT continues its proud tradition of designing and building the best-quality power trains for manufacturers of farm tractors and equipment. The company employs 178 design engineers and has about 1,800 production and support staff. Contract design projects for tractor manufacturers represent a major portion of PT's revenue. At any given time, about 45 to 60 design projects are going on concurrently. A small portion of their design work is for military vehicles. PT only accepts military contracts that involve very advanced, new technology and are cost plus.

A new phenomenon has attracted management of PT to look into a larger market. Last year a large Swedish truck manufacturer approached PT to consider designing power trains for its trucks. As the industry consolidates, the opportunities for PT should increase because these large firms are moving to more outsourcing to cut infrastructure costs and stay very flexible. Only last week a PT design engineer spoke to a German truck manufacturing manager at a conference. The German manager was already exploring outsourcing of drive trains to Porsche and was very pleased to be reminded of PT's expertise in the area. A meeting is set up for next month.

**CLAUDE JONES**

Claude Jones joined PT in 1999 as a new MBA from the University of Edinburgh. He worked as a mechanical engineer for U.K. Hydraulics for five years prior to returning to school for the MBA. “I just wanted to be part of the management team and where the action is.” Jones moved quickly through the ranks. Today he is the vice president of design and operations. Sitting at his desk, Jones is pondering the conflicts and confusion that seem to be increasing in scheduling people to projects. He gets a real rush at the thought of designing power trains for large trucks; however, given their current project scheduling problems, a large increase in business would only compound their problems. Somehow these conflicts in scheduling have to be resolved before any serious thought can be given to expanding into design of power transmissions for truck manufacturers.

Jones is thinking of the problems PT had in the last year. The MF project is the first to come to mind. The project was not terribly complex and did not require their best design engineers. Unfortunately, the scheduling software assigned one of the most creative and expensive engineers to the MF project. A similar situation, but reversed, happened on the Deer project. This project involved a big customer and new hydrostatic technology for small tractors. In this project the scheduling software assigned engineers who were not familiar with small tractor transmissions. Somehow, thinks Jones, the right people need to be scheduled to the right projects. Upon reflection, this problem with scheduling has been increasing since PT went to multiproject scheduling. Maybe a project office is needed to keep on top of these problems.

A meeting with the information technology team and software vendors was positive but not very helpful because these people are not really into detailed scheduling problems. The vendors provided all sorts of evidence suggesting the heuristics used—least slack, shortest duration, and identification number—are absolutely efficient in scheduling people and minimizing project delays. One project software vendor, Lauren, kept saying their software would allow PT to customize the scheduling of projects and people to almost any variation selected. Lauren repeated over and over, “If the standard heuristics do not meet your requirements, create your own heuristics that do.” Lauren even volunteered to assist in setting up the system. But she is not willing to spend time on the problem until PT can describe to her exactly what criteria will be used (and their sequence) to select and schedule people to projects.

**WHAT NEXT?**

Potential expansion into the truck power train business is not feasible until the confusion in project scheduling is solved or reduced significantly. Jones is ready to tackle this problem, but he is not sure where to start.