The Goal by Eliyahu M. Goldratt and Jeff Cox is a fictional novel that explores Goldratt's concept on the "Theory of Constraints" in process management. The story follows the life of protagonist Alex Rogo, the plant manager of UniWare Manufacturing as he encounters the threat of company executives shutting down his plant. As he struggles to overcome challenges in both his professional and personal life, he encounters Jonah, a physicist that guides him to view the "bigger picture". With only three months to turn the plant around, Rogo's critical thinking is put to the test as he discovers bottlenecks that cause the plant's inability to meet deadlines and constant loss of capital. After implementing the processes developed under Jonah's consultation, net profits of the plant increased by 20%. As a result, Rogo receives a promotion as well as being acknowledged as the innovator of a whole new way of operations management.

It is imperative to identify the goals of an organization in measureable terms in order to make changes that will benefit the company as a whole. In search of the organization's goal through a logical thinking process, Rogo has found the answer with the help of his old physics teacher and a hiking trip. He concluded that his organization's goal "is to reduce operational expense and reduce inventory while simultaneously increasing throughout" (Cox & Goldratt, 1984: 93). Along the way towards realizing the goal, Rogo is forced to define and understand the theory of constraints. These measurements not only helped Rogo identify problematic areas in the current operations, such as bottlenecks and inefficiencies, but he also concluded a seamless sequence of efficient operational activities. By establishing measurements against the goal objectives, Rogo has successfully made a turnaround from running an inefficient plant to the top performing division. A key lesson learned from this novel is that, through everyday situations similar to what Rogo encounters in his personal life, one must identify the goal they are working towards regardless of whether it pertains to their family life or professional career. More importantly, they must ensure that everything they do is taking one step closer to achieving the goals.

This novel is also story about self-discovery and a journey for Rogo to becoming a highly respected leader. Teamwork and leadership is a theme that is strategically place through the novel. Whether it's in his personal life with his wife Julie or at work, he learns the importance of compromise and balance. "This is the technique I should ask Jonah to teach me: how to persuade other people, how to peel away the layers of common practice, how to overcome the resistance to change" (Cox & Goldratt, 1984: 269). Rogo realized that the only way to advocate changes and achieve the goal, especially in a short period of time, is to seek input from various departments. He consulted colleagues in different functional areas to develop a strategy that will increase the plant's productivity and bottom line. For example, he recorded statistical fluctuations and dependent events; he also sought help to experiment with different batch sizes to supply parts to the bottlenecks. These steps would not have been possible without the help of everyone contributing his or her expertise to help Rogo identify bottlenecks and solve the crisis. This effective collaboration as well as Rogo's openness to adjustments when Jonah is constantly critiquing his work has contributed to his success. Relative to becoming a business school graduate, we will encounter many projects that will only be successful from assembling a team to

work together. Learning the importance of teamwork where everybody contributes their strengths could result in unforeseen ways that maximize quality of work.

A system's maximum capacity is determined by the process with the least capacity, known as a bottleneck. Even if all the other processes in the system have much higher and efficient capacities, the bottleneck with determine the overall flow rate of the system. Alex Rogo first realized this during the hike with his son, Dave. As the scouts hiked forward, Alex compared the straight line of marching boys to a set of dependent events in his assembly plant. Each of the boys had their own 'optimal' walking speeds; the faster boys would naturally walk faster and create gaps behind them, and the slower boys would lag behind. The gaps created were equated to excess inventory. The slowest hiker, named Herbie, is the bottleneck for their hiking assembly line. Everyone behind Herbie was subjected to Herbie's slow walking speed, and in front of Herbie was a huge gap to the next boy. Since the boys behind Herbie were unable to pass him (they were 'dependent' on his process), no gaps were formed between them, making them all stuck together. To solve this, Alex changed the order of processes, where Herbie became the first in line, subjecting all hikers behind him to Herbie's optimal speed. This solution is the equivalent understanding that a system's maximum throughput can only be as fast as the maximum capacity of their slowest process. Ultimately, this solution of reduced all the gaps within the system, or decreased excess inventory to a minimum.

However, simply decreasing decreasing excess inventory isn't a good enough solution. All the hikers behind Herbie began complaining at how slow he was. Therefore, the next problem to solve is how to increase Herbie's walking speed, or to increase his process capacity. To solve this Alex divided up Herbie's pack up evenly amongst the boys so that Herbie's hiking bag became significantly lighter. This allowed Herbie to walk faster, allowing the whole system to move faster as well. In terms of an assembly line, it means that throughput has increased, which means the time inventory is spent within the system decreases, allowing for increased turnover.

Another important concept in reducing overall operation costs is reducing batch size. Reducing batch size reduces the system's overall internal inventory, meaning it decreases held up money. Additionally, it also reduces queue times for parts waiting on bottleneck processes, and wait times for non-bottleneck parts. In the Goal, this solution is implemented in Alex's plant by reducing total batch sizes by half, which causes total lead time to decrease by half for each product. This allows his plant to take in more orders, and also substantially decrease delivery time for orders. This solution makes sense when we apply it to Little's Law. Reducing batch size means 'I' decreases. The only way the formula will still hold true when 'I' decreases is if either 'T' or 'R'. Since 'R' remains constant throughout the system, the only answer is that 'T' must have decreased overall within the system. Ultimately, this solution allowed Alex's plant to promise high speed delivery, which allowed his plant to become much more competitive than the other similar manufacturers.

The Goal demonstrates a variety of operations management issues that are discussed in class and are then exemplified as real life situations in the book. This novel provides clear

directions as to how to approach the various situations and solve the problems in an efficient manner to ensure productivity and processes that maximize capacity.