

Achieving Goals

Core concepts behind Eliyahu M. Goldratt's *The Goal*

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1. Introduction

The book *The Goal* presents many core concepts and practices that should be utilized by businesses to improve operational productivity. The author, Eliyahu M. Goldratt, presents these concepts and practices in the form of a narrative following a recently promoted manufacturing plant manager trying to save his plant from being shut down. In the narrative, the protagonist breaks down the plant's current processes to identify the problem and then derives the core concepts and practices to apply to the processes. By presenting the concepts and practices in a narrative, Goldratt is able to show how they can be applied in a real workplace scenario and how their implementation can affect the whole operation, but still keep the material interesting to go through. While Goldratt's book contains a wealth of concepts and practices that an operation can utilize, there were ten concepts and practices that stood out that would apply best to my own workplace and help improve our productivity.

I work at CVS Pharmacy and will be applying several concepts and practices from *The Goal* to show how productivity can potentially be improved. In the pharmacy, there is still a lot of manual labor that is carried out at each of the workstations. Even though there is some automation in the workflow, there are still many tasks that require manual processing from the employee working at a workstation. While all of the work usually gets done by the end of the day, the workstations often quickly get overwhelmed by the amount of prescription orders during peak hours and work gets piled up or stuck at a workstation. Due to this, prescriptions are prone to not being ready for the customer to pick up by the promised fulfillment time. Every once in a while, this causes the pharmacy to have to push promise times until the following day even though there is still a significant amount of time until closing. There is

definitely a lot of room for improvement in productivity within the pharmacy to ensure that we can fill the maximum amount of prescriptions in a day and do not fall behind.

2. Everything Done Should Be a Means of Achieving the Goal

When expanding a business or operation, it can be easy to forget that the fundamental goal of a business is to make money. There are many ways that an organization can help increase the money they make such as reducing money spent on ensuring that processes are cost effective and efficient. However, if an organization focuses purely on ways to decrease money spent, they can actually be hindering the underlying goal of making money. It is important to remember that “they enable the company to make money. But are not the goal themselves; they’re just the means of achieving the goal” (Goldratt, p. 47).

In *The Goal*, the whole organization became so focused on so many other aspects that were just a means of making money that they forgot to focus on actually making money. At CVS, I have noticed there are some areas that reflect some similarities to the way the organization within *The Goal* was initially ran. At my pharmacy, the manager does not like having certain items on the shelves or ordering from our outside vendor because it is less cost effective for us since we are not buying medications at the volume discount price. However, there are times that customers have decided to go elsewhere instead of waiting for the medication to be delivered through our internal warehouse which can take up to a week. In this example, my pharmacy manager is so intent on cutting costs and maximizing profit that we end up losing sales that would be profitable and thus lose out on opportunities to make money. If the pharmacy manager had remembered that the goal of the pharmacy is to make money, then he would realize that being able to make a sale is more important than maximizing the profit.

3. Theory of Constraints

The theory of constraints is a methodology to how to identify and properly utilize the bottlenecks or constraints of an operation or system. According to both Goldratt and Heizer, the theory of constraints consists of five steps. These steps are “identify the constraints, develop a plan for overcoming the identified constraints, focus resources on accomplishing step 2, reduce the effect of the constraint by offloading work or by expanding capacity, and when one set of constraints is overcome, go back to step 1 and identify new constraints” (Heizer, p.317). In essence, these steps help guide proper decision making in order to make the most out of a bottleneck by controlling it rather than letting it control the system. The steps are with clearly identifying the bottleneck. Then, the best method of utilizing the bottleneck is determined, and the system is altered to conform best to the utilization of the bottleneck. The constraint is then examined to ensure that it is producing the intended results. If the constraint breaks, then the process should be repeated from the identifying step.

In *The Goal*, the method behind the theory of constraints was devised and applied to the manufacturing plant one step at a time. It was not until the end of the narrative that the steps were developed into a whole theory. The theory allowed the staff in the story to locate the bottlenecks and use them to control the flow of the rest of the manufacturing plant. In a similar manner, the theory of constraints can be used to identify the bottlenecks at CVS and use those bottlenecks to set the proper promised pickup times for customers. At my pharmacy, the typical bottleneck occurs at the prescription drop-off workstation. At this workstation, prescriptions can arrive through fax, through electronic prescriptions, or from a customer dropping off the prescription. Unfortunately, prescriptions can come through all three methods

at the same time, and it can be difficult for the worker at the workstation to keep up with all of the prescriptions that arrive. In addition, sometimes prescriptions get dropped off at the drive through window and either get sent over to the drop-off workstation or entered in right away. If the prescription is entered in right away, sometimes the promised pickup time given to the customer is not reflective of the prescriptions piled up at the drop-off workstation.

Following the theory of constraints and identifying the drop-off workstation as one of the bottlenecks of the system, the next step would be to develop a method for overcoming the constraints. IN this example, a good method would be to work on prescriptions that are dropped off by customers before working on those that are faxed or sent in electronically. In addition, all prescriptions should be entered in at the drop-off workstation in order to give better promises on pick up times. To follow up this step, resources would be directed in accomplishing the step. To offload the work at the drop off station, the person at the drive through workstation could enter in the faxed and electronic prescriptions with a later pickup time in-between customers. If this successfully overcomes the bottleneck, then the system will be examined or any other bottlenecks. This example would be the best approach to using the theory of constraints within the pharmacy at CVS.

4. Managing Idle Time

According to Goldratt, idle time is not always necessarily a bad thing (p. 90). In *The Goal*, Goldratt exemplifies this by showing that if a worker or machine is always producing something might not be idle, but it may not actually be productive. If the item being produced cannot be sold, then the machine or worker is not really productive because they are not actually bringing in money for the organization. The extra items being produced not only costing the

organization money for the raw materials but is now also taking up space and costs more money to hold onto. The machine and worker were being paid for either way, so it did not actually cost anything more for them to be idle as long as they were not a constraint in the system.

At CVS, a similar situation occurs where idle time is not managed very effectively. At my particular pharmacy, idle time is usually turned into work by having workers call a list of patients who are overdue for refills or are out of refills. Whenever we are actually able to reach a customer, we usually get held up by the customer in one way or another and are not able to help customers that show up at the drop-off, drive through, or pick up workstations right away. These calls usually return very little sales because the customer usually has not gotten the refill because they are no longer on the medication or have not run out yet. These calls also usually annoy customers because of how often our system already automatically calls them. In addition, customers that have to wait for us to finish our calls typically becomes impatient. In this case, the idle would be better utilized being on the ready for customers coming in especially during peak hours so that they can be helped right away.

5. Batch Size Control

In his book, Goldratt has several examples of how to effectively control batch sizes. In one instance, workers combined jobs into a single in order to maximize the work being done (p. 198). Later on, the plant begins to half the batch sizes on non-bottleneck processes in order to shorten job run times and produce products quicker (p. 236). In both cases, the plant was able to ensure that they were operating at maximum productivity with the resources available.

CVS utilizes batch sizes at the production workstation. Here, the prescriptions in the queue are printed, pulled, and filled three customers at a time. At first glance, this sounds like a reasonable setup. However, customers often have more than one medication prescribed at a time. Some customers even get prescribed eight different medications at the same time. If the worker at production gets three or even two of these customers in the same batch, then it becomes very hard to manage all of the medications. In cases where customers have large prescription orders, the system should reduce batch sizes to a more manageable amount such as a single customer or even only a couple of their medications. By doing so, it makes it easier for the worker at the production workstation to keep track of the medications in progress.

6. Utilizing Automation Effectively

Goldratt shows in *The Goal* that having automation does not necessarily mean that there is an increase in productivity because they may not be working towards the goal of making money (p. 83). The pitfall of having equipment that provides automation is the notion of wasting capacity if the equipment is not running and producing something. However, similar to idle time, if the equipment is not producing items that can be sold, then it is not actually increasing productivity. Automation should allow you to utilize your labor resource elsewhere. It does not need to always be producing something.

CVS has some automation built into the workflow and system. However, the automation is not always productive. One of the more recent additions to automation is the ordering process. The system is supposed to automatically keep track of exactly how many pills of each medication is on the shelf and then order from the warehouse weekly and the outside vendor as needed. However, the automated system has somehow managed to always order

medications we are already overstocked on, but not medications that we sell through quick or are completely out of until we indicate that a customer needs the medication. Due to this issue, workers now actually spend more time reviewing the daily outside vendor orders to ensure that extra medications are not ordered and processing returns to both the warehouse and the vendor. Rather than automatically placing the order, the system should instead alert us to medications that reach vital levels and only automatically order medications that we indicate customers need.

7. Using Effective Priority Systems

At the manufacturing plant in *The Goal*, the management implemented a priority tag system that helped indicate to the workers which jobs should be processed first (p. 183). By using such a system, the management helped to facilitate the continuous flow of parts to assembly. The production workstation at CVS utilizes a system similar to the priority tag system to indicate to the worker which prescriptions that should prioritize in filling first. However, these tags are actually quite inaccurate. The system actually guesses for one of the tags that indicate that the customer should be coming in shortly for the medication. The other tag used is for customers who are waiting in store to pick up their medications. While we are able to control which prescriptions are tagged with the waiting tag, we are not able add the tags indicating that we should expect the customer to pick up soon. We are able to remove these tags, but we cannot add them ourselves. To make the priority tag system better, the system should allow us to tag prescriptions with the expecting to pick up soon tag. Otherwise, the only indicator on the prescription is the promised pick up time on the label which does not indicate to the worker at the workstation that this prescription should be filled first.

8. Engineering Sales

Towards the end of *The Goal*, the manufacturing plant was able to offer customized production schedules to their customers in order to differentiate themselves from the competition and pull in more sales (p, 282). This method is known as engineering sales. Engineered sales usually are sale that an organization makes that are outside of the usual set of protocols in order to meet the customer's needs while also maintaining their own needs. Due to the way CVS handles partial fill prescriptions, my manager does not allow partial fills for customers when we do not have enough of a medication in stock for the fill prescription. When a partial fill is processed, CVS does not charge the customer until they pick up the full quantity. If the customer picks up a partial and decides they do not want the rest, then they just the partial amount of the medication for free at our cost. However, I feel that we should engineer our sales and process the partial fill as a complete fill so that the customer is charged for the full quantity of the medication and have the customer come back for the rest of the partial fill which the customer has already paid for. By engineering our sales like this, customers don't go elsewhere to get their medications, and we do not risk a loss if the customer decides they do not want the rest of the medication.

9. Performance Measurements Versus Actual Efficiency

Throughout the story, the manager of the manufacturing facility struggled to show that the performance measurements set out by the corporate office do not reflect the actual performance of the plant. Even though the bottom line is better for the plant, the performance measurements makes it look as if the operating costs of the plant have gone up (p. 256). At CVS, some metrics are used to measure performance such as promise times met, customer

service, the number of refills made by calling customers. However, none of these performance metrics actually take into account how much money the pharmacy actually made. In fact, the bottom line is not even shown to us until the end of the year. It would be better if the metrics were in relation to the bottom line because sometimes promise times are missed in order to meet the promise time of a customer waiting in the pharmacy. In addition, sometimes we are so focused on meeting metrics that we will turn away customers because we know that we are already struggling to keep up with what we already have.

10. Statistical Fluctuations

Goldratt mentions in his story that statistical fluctuations sometimes occur when certain “information vary from one instance to the next” (p. 94). This concept is shown in the story through its impact on making sure orders from the plant go out on time. Even though statistical fluctuations average out over time, if the fluctuations occur at the wrong time, they can still impact the whole system negatively. Statistical fluctuations can be utilized at the drop-off workstation in the pharmacy. The prescriptions that arrive through fax and electronically all have a time frame of 12 minutes to be processed through the workstation no matter how many come into the queue or how many customers are at the pharmacy to physically drop off a prescription. The system does not take into account any statistical fluctuations and does not adjust the time frame set based on the how long it took before the previous prescriptions were processed. If the system took into account statistical fluctuations into setting the time frame, then we would be able to better serve customers that come to the pharmacy to drop off their prescriptions. With the current setup, prescriptions that are sent in sometimes take priority over a customer that is standing right in front of the worker at the drop-off workstation.

11. Taking Advantage of Dependency

In *The Goal*, dependency was leveraged in order to release materials at the right time to control the flow of production through the system. Dependency is important because it has an impact on several other concepts and practices such as statistical fluctuations and managing idle time. To a similar effect, dependency can be utilized in the pharmacy. If there are too many prescriptions coming through the drop-off workstation and not enough going to the production workstations, then one of the workers at production can assist the drop off worker with data processing since there cannot be any prescriptions to fill if they do not move through the drop-off workstation first. By doing this, we would be leveraging how prescriptions have to move through a certain order through the system and utilize personnel more effectively.

12. Conclusion

The Goal proved to be quite a very interesting read. At first, I thought that a book on operational management would be quite stale and hard to digest, but Goldratt made the story so colorful and well-paced that it was very easy to follow. He was also able to weave the concepts and principles of management so well into the story it seems like just a fictional narrative. However, the way the story was also told made the situation so real that it was easy to pull the concepts out. Initially, I felt that the parts of the story about the protagonist's personal life felt out of place. After finishing the book, I felt that Goldratt was trying to imply that the concepts that are used to improve a manufacturing plant can be applied outside of the workplace and can help with work and life balance.

One of the things that I found intriguing about the concepts Goldratt laid out in his narrative is how they are so basic in form and yet not so simple to single out because of how

easy it is to become caught up in so many other aspects of an organization. I also liked how he encouraged organizations to improve by stripping away policies and conventional practices to examine the core of business. Goldratt was able to depict how conventional standards that are generally accepted by everyone may not be the best for every organization. In fact, it seemed that he was trying to make a point throughout his narrative that argues that conventional methods do not necessarily work at all, but mostly just provide a guide to follow. Goldratt helped me realize just how many of the practices that I blindly follow at my workplace are actually counterproductive. I do feel that a lot of the information within the book could be applied to my own workplace.

13. References

Goldratt, E. M., & Cox, J. (2014). *The Goal: A Process of Ongoing Improvement*. Great Barrington (Ma.): North river press.

Heizer, J., Render, B., & Munson, C. (2017). *Operations Management: Sustainability and Supply Chain Management* (12th ed.). Boston: Pearson.