IDEA
rethinking retail

Experience with the Supply Chain – IDEA and the Methodology

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"In order to manage complexity, one must find the inherent simplicity in the midst of the complexity."
Gerald I. Kendall, PMP

Introduction

The purpose of this paper is to allow the reader to understand the early development of IDEA, LLC and how the company changed its direction and internal methodology. Realizing that IDEA's success is directly tied to the success of its customers, we set out to discover how IDEA can make them even more successful. How can IDEA empower its customers to leave their competition behind in this new century?

The Story

IDEA began with a vision to improve the accuracy and cost effectiveness of its clients warehousing operations, as well as to allow real-time visibility of the warehouse contents. For one client, this task led IDEA to consolidating the raw materials of over fifty-two suppliers across seven countries so that they could be delivered just-in-time to twenty-seven end user facilities. IDEA's six facilities in three countries and three states combined with our home grown warehouse management system gave our customers the method, accuracy (99.997%), visibility and order placement control they needed to manage their inventories to and from all locations while reducing their operating expense. Customers like Fruit of the Loom told us that they were very satisfied with our services.

After years of growth for IDEA and its clients, there was still a void. Sure, client operating expense and inventories were down but not to the levels to allow IDEA to grow by leaps and bounds. In addition, even with the extensive control IDEA gave its customers, some inventories were too low, some too high and some were being held in the wrong location. For our customers, managing in excess of 11,000 items proved to be difficult even with the tools provided by IDEA. Something was missing, but what?

The Theory of Constraints

So IDEA embarked on a mission to fill in the blanks. We found Dr. Eli Goldratt[1] and his Theory of Constraints (TOC). Dr. Goldratt has spent decades studying all areas of business including manufacturing, sales, marketing and distribution, to name only a few. He is known for developing innovative solutions to industry problems. Newsweek called him "a guru to industry."

IDEA's initial study of TOC provided the insight to understand IDEA's success was tied directly to the success of its customers so the focus switched to our customer's biggest issues and constraints. Every organization exists to fulfill a goal. Organizations have a

[1] Dr. Goldratt is the author of the multimillion-copy bestselling book *The Goal* and several others, including *Critical Chain*, *Necessary but Not Sufficient*, *It's Not Luck* and the *Theory of Constraints*.

variety of indicators they use to measure their performance but too much of the time these indicators of local optima actually work against the goal of the organization. The drive of managers to maximize their area of the business tends to place different groups within the organization at odds with each other and, ultimately, they do more damage than good. Departments seek to thrive, even at each other's expense, while the organization suffers.

Once the overall goal of the organization is identified, the TOC turns its attention to the constraints that block advancement toward the goal. Dr. Eli Goldratt, states, "In our reality any system has very few constraints and, at the same time, any system in reality must have at least one constraint." Recognizing this, IDEA put the five focusing steps of TOC into action for the world of distribution.

1. Identify the Constraint
2. Exploit the Constraint
3. Subordinate everything to the Constraint
4. Elevate the Constraint
5. Return to Step 1 if the Constraint is broken

Applying the five steps above to the distribution industry identified several changes that needed to be made in the way IDEA conducted its business.

The Answer – Changing IDEA's Methodology

The first change for distribution came from realizing that the main constraint for our clients is the marketplace. They could sell more if more customers came to buy. Many times sales are lost when a customer comes to buy a product but it is not available. Therefore, the supply chain must be managed so that inventories are where they need to be when needed. Companies need to protect sales, without clogging the supply chain with excess inventory. At the time, IDEA's clients were pushing inventories out to the market, regardless of the needs of end users. Items that were not selling took up shelf space and filled warehouses while high demand items were not making it to market fast enough. This led to increased carrying costs, stock outs, obsolesce, product disposals, poor fill rates and extra operating expense, while damaging customer satisfaction.

Moving from a push system to a pull system was part of the answer. The TOC replenishment solution involves holding just enough inventories at the distribution location closest to the end user to satisfy the heaviest expected demands of the market. In a pull system, production of goods is driven by the consumption of end users. Resources are not utilized for the sake of high efficiencies, rather, only enough to replenish required inventories. IDEA created Elucidate a distribution management methodology to facilitate this replenishment process. By incorporating buffer management into Elucidate, materials and finished goods were located in the most sensible places without stock outs. Inventories across the supply chain dropped as did carrying costs, operating expense, transportation costs and obsolescence. Sales, due date performance and net profit, the ultimate goal, increased.

The second change for distribution is the manner in which the system as a whole is measured. New measurements were needed, to free mangers from the world of silos in which they had been living, to allow them to see the supply chain as a whole. This holistic approach created an atmosphere of cooperation between different parts of the supply chain so that all could work to better the entire system rather that their small parts. As Gerald Kendal writes in his latest book, "All it takes is one small part of the supply chain not doing its job properly to kill everyone else's effort and profits."[2] Therefore, two measurements were put into place in order to create the desired behavior in the managers and decision makers across the supply chain.

Throughput Dollar Days – Recognizing that shortages create the potential for lost sales and future business, this measurement multiplies the value of any late product by the number of days the product is late. As an example, assume that one link in the supply chain is late delivering an item to the next link downstream. If the lateness holds up the sale of a product that requires the item, the value of the held up product is multiplied by the number of days the item is late. This recognizes the impact on the customer's sales. The object of Throughput Dollar Days is to achieve a score of zero.

Inventory Dollar Days – Secondary to Throughput Dollar Days, this measurement multiplies the value of inventory of every SKU by the number of days that SKU has been held at any point of the supply chain. It is usually expressed as a dollar value but is sometimes expressed in days of consumption. The sum of all the Inventory Dollar Days should be reduced but not to the point of jeopardizing sales.

The third change for distribution revolves around understanding the emotional resistance that inherently comes with change in any organization. One of IDEA's goals is to establish a Process of Ongoing Improvement with the customer, but we realize that:

- Any improvement is a change,
  - Any change is a perceived threat to security,
    - Any threat to security gives rise to emotional resistance,
      - Emotional resistance can only be overcome by a stronger emotion.[3]

During this process of ongoing improvement, IDEA follows a three step process that identifies *what to change*, *what to change to*, and *how to cause the change*. Using certain methods and tools, IDEA strives to facilitate the change by breaking the emotional resistance through the simplicity of the solution and logical effect-cause-effect arguments designed to break the conflicts that bind individuals to the damage caused by their actions and insecurities.

Testing the Theory

[2] Gerald I. Kendall, *Viable Vision – Transforming Total Sales into Net Profit*, J. Ross Publishing, Boca Raton, FL, ©2005, p.82

[3] Eliyahu Goldratt, Theory of Constraints, North River Press Publishing, Great Barrington, MA, ©1990, p.10-11

IDEA began testing TOC with Shippers Supply Company a distributor in Louisville, KY, and with the historical data collected over the years by handling the cargo of IDEA's current clients. By entering historical data of our clients into the software component of Elucidate, IDEA was able to simulate how customers could have operated at one half of their normal inventory levels with one tenth the stock outs.

One testimonial from the procurement manager of Shippers Supply tells the story of his most difficult item. Shippers was distributing this item to a number of customers but one in particular ordered more than all the rest, in big batches, and at irregular intervals. This produced an oscillation between over-stock and stock-out, resulting in poor on time delivery and complete delivery statistics.

IDEA and Shippers modeled this problem item historically within Elucidate. The output and order frequencies showed a solution of how to manage inventory levels. Shippers worked with the large customer to lower their order size, increasing order frequency. The result was the same for Shippers and their customer: lower inventories, no stock outs, faster delivery, and ultimately, a better relationship.

Other Examples of TOC Distribution Successes:

Canadian General-Tower Limited
Lead Time Reduction – 50%
On-time Delivery – from 90% to 99%
Premium Freight Reduction – 95%
Capacity Increase – 25%

South Park Corporation
Gross Profit Increase – 75%
Lead Time Reduction – 50%

Jacobs & Thompson
Lead Time Reduction – 60%
On-time Delivery – from 75% to 95%
Inventory Reduction – 60%
Net Profit Increase – 200%

Oregon Freeze Dry
Sales Increased – 20%
Lead Time Reduction – 75%
On-time Delivery – from 79% to 99%
Inventory Reduction – 60%

Embassy Foods Ltd.
On-time Delivery – to 100% and order backlog eliminated
Inventory Reduction – 20%
Gross Profit Increase – 50% without increase in Operating Expense

In Closing

IDEA knows that companies want to have the proper inventory levels in the right place at the right time. Unfortunately, until now, third party logistics providers (3PLs) have not been willing to accept the responsibility for this task. What does responsibility mean? IDEA's fees are based on delivering benefits to its clients. No client benefits, no pay for IDEA. Interestingly, IDEA's method of managing inventory levels no longer requires the client to outsource its warehouse operations to IDEA. The benefits to our clients are tremendous, allowing IDEA the break out growth it originally sought.