TIP TOP MARKET COMPLAINT ANALYSIS
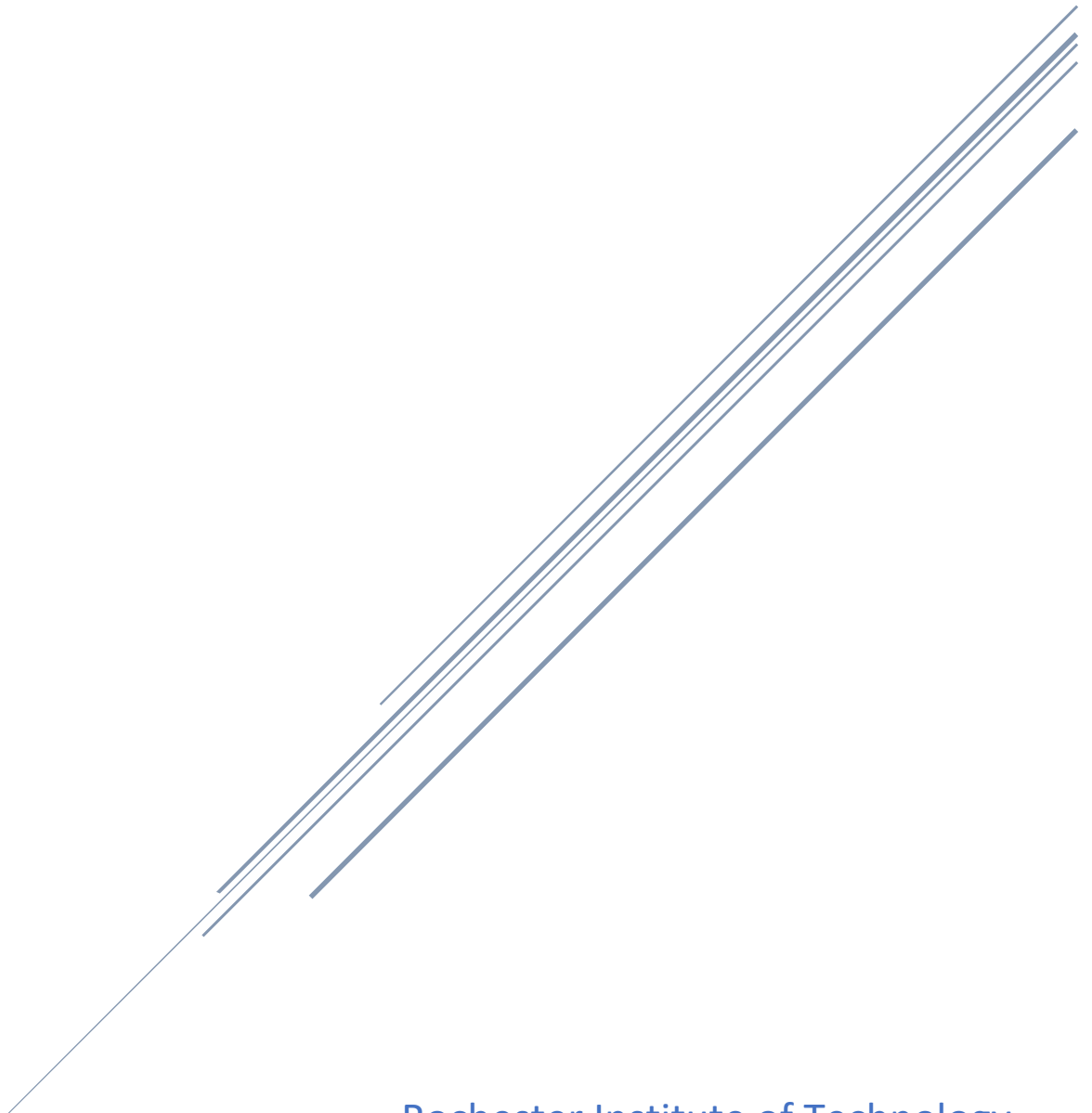
DECS 310.01 Operations Management
Case Assignment #1

Rochester Institute of Technology

Ryan Carpenter

Introduction

DECS 310.0 Operations Management case study one revolves around one regional chain of supermarkets in the United States called Tip Top Markets. This fictitious marketplace is located largely in the southeastern region of the country and has become subject to a large amount of customer complaints. Karen Martin, a top manager for one of the Tip Top locations became disturbed by this large number of customer complaints and conducted initial data exploration. During this preliminary step to identify the problem, Karen, along with myself noticed multiple trends. One of the first trends identified was the large number of incoming complaints recorded on Tuesdays. The next identifiable trend was the categorization of these complaints and the frequency of their repetitions and similarities.

With initial customer service data collected, Karen made the decision to implement changes on July 15th in hopes to slow the amount of inbound complaints and track progress towards the goal of a more enjoyable shopping experience. At this point, we embarked on a data analysis journey to help stop the bleeding and help identify and provide potential solutions for Tip Top Markets. By employing quality identification and management techniques such as a check sheet, histograms, bar charts, Pareto diagram, run chart, and finally a cause-and-effect diagram, we aimed to better understand the negative customer complaints and make educated recommendations on how this marketplace should better serve their customers.

Data Analysis

After Karen Martin's preliminary data gathering, we were provided with a total of 184 complaints averaging 20.44 per every Tuesday beginning 01-June and ending 27- July. Keeping in mind that on July 15th Karen had implemented new procedures revolving around the reduction of complaints involving out-of-stock inventory, improved store maintenance, and more efficient checkout procedures; we found it necessary to categorize all the different complaints into twelve categories which are listed below.

a) Out-of-stock
b) Overcharged
c) Poor Store Maintenance
d) Long Checkout Wait Time
e) Defective Products
f) Uncomfortable Store Temperature
g) Meats Not Fresh
h) Wrong Price/Undercharge
i) Could Not Find Item
j) Customer Service
k) Fish not fresh
l) Misc.

With a better understanding of the categories of complaints we could then count and prioritize the most deficient areas which are affecting consumer experiences and opinions within Tip Top Markets.

Check Sheet

A check sheet is a simple tool to begin problem identification. Check sheets provide a useable format that allows users to record and organize data in a way that facilitates the collection and analysis of gathered data by tallying problems and events by category. Simply enough, this stage in our analysis was focused on understand and learning in more detail about the complaints being recorded by the Tip Top Market customer service department.

As the chart clearly displays, out-of-stock inventory is by far the largest complaint category recorded followed by poor store maintenance. Both these situations we believe are extremely detrimental to customer experience and satisfaction when visiting the Tip Top Market. These issues will need to be the primary complaint categories addressed in order to save face and improve customer shopping experiences.

Project Name: Tip Top Markets Complaints

Name of Data Recorder: Ryan Carpenter

Location:

Data Collection Dates:

| Complaints / Occurance	Dates									TOTAL
	1-Jun	8-Jun	15-Jun	22-Jun	29-Jun	6-Jul	13-Jul	20-Jul	27-Jul	
Out of Stock	2	4	3	5	6	9	7	13	12	61
Overcharged	3	2	5	1	1	2	2	1	0	17
Poor Store Maintanance	1	3	0	1	2	3	3	2	5	20
Long Checkout Wait Time	2	0	2	1	3	0	2	2	0	12
Defective Products	4	3	2	2	1	0	0	0	0	12
Uncomfortable Store Temperature	1	1	1	2	1	2	1	0	1	10
Meat not fresh	3	2	1	1	1	1	0	0	0	9
Wrong price/under charge	0	1	2	0	1	1	2	2	1	10
Could not find items	2	0	1	3	1	0	1	0	0	8
Employees not courteous/helpful	2	1	1	0	1	1	1	0	0	7
Fish not fresh	0	2	2	1	0	0	0	0	0	5
Misc	1	1	3	0	0	3	0	2	3	13
TOTAL	21	20	23	17	18	22	19	22	22	184

Histogram

Next, we began diving into the empirical frequency distribution by constructing a histogram. Here we had the goal of gaining a sense of the distribution of the recorded complaints. In agreement with our check sheet, out-of-stock inventory remains as the most complained about category experienced by Tip Top Markets. The distribution of overcharges and poor store maintenance are also congruent with the discoveries made after observing the check sheet. These are situations that are related closely to intimate business processes and practices.

This histogram visual also brings more visual attention to the misc. category. Through in-depth investigation, we were able to determine that a majority of these thirteen complaints were irrelevant to overall business operations. These complaints revolved around situations such as "lost keys", "not liking store decorations", "lost child", and "reporting a car accident in the parking lot". Although these are serious complaints for Tip Top Markets, the frequency and likenesses of these incidents are sporadic and ultimately on an individual basis. Since these complaints do not necessarily relate directly to an overarching business process, we believe that they should not distract from the ultimately failing business processes that this marketplace is experiencing.
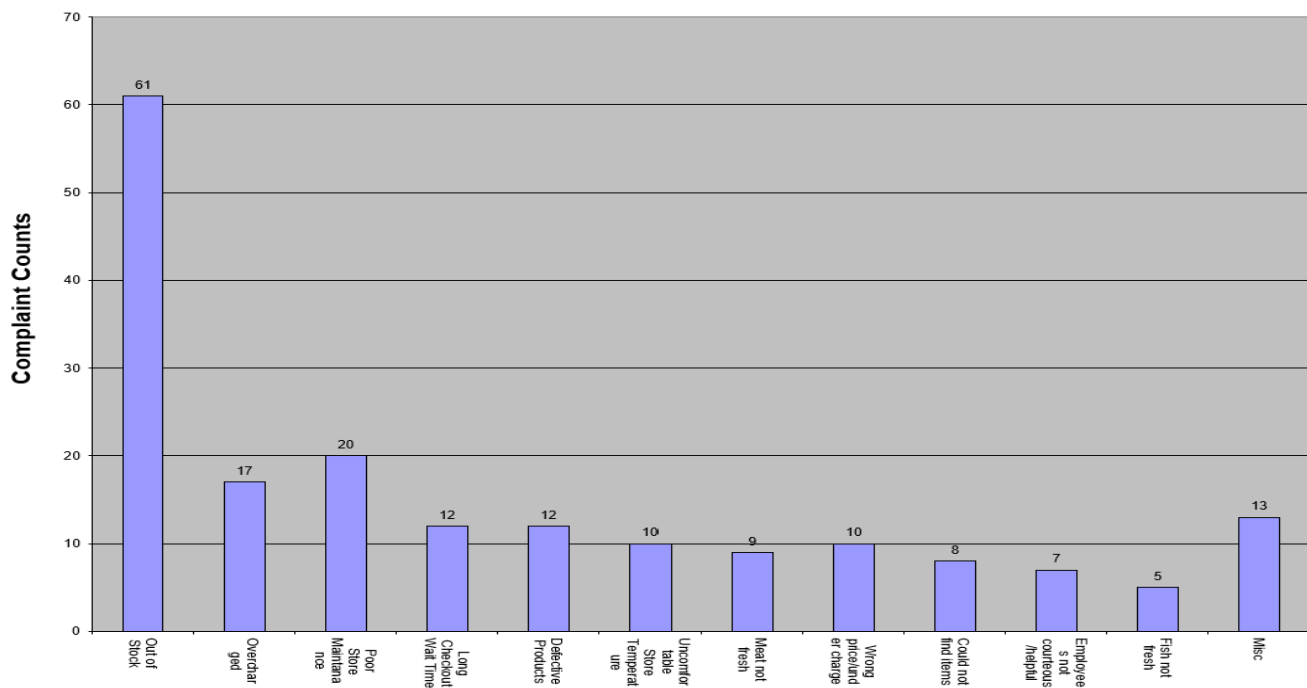
Bar Chart

Our third chart created was focused around the uncategorized complaint count per the Tuesday's recorded. This graphic leads to one slight trend that is to be considered. When observing the data, we can assume that many complaints are coming in during the first and third weeks of the month. Now, when looking specifically at 15-Jun and 6-July we can see that both days had different categories with higher complaints. On the 15th of June, Karen Martin's store observed five customer complaints involving overcharging. On 6-July, the same store observed nine complaints surrounding out-of-stock inventory. Ultimately the usage of a bar graph in this circumstance does not provide enough evidence for a factual conclusion, but instead assumption and speculation. More information would need to be obtained in order to better understand the difference in circumstances surrounding days with a higher volume of complaints.
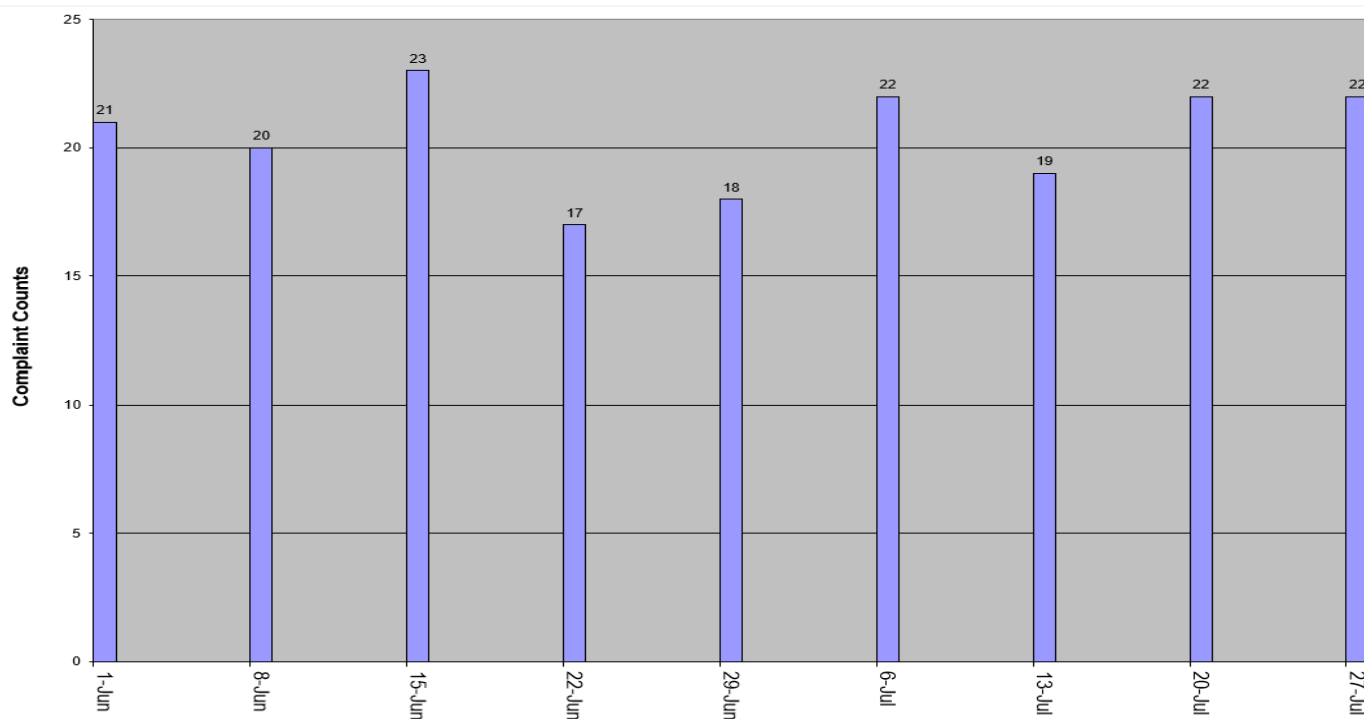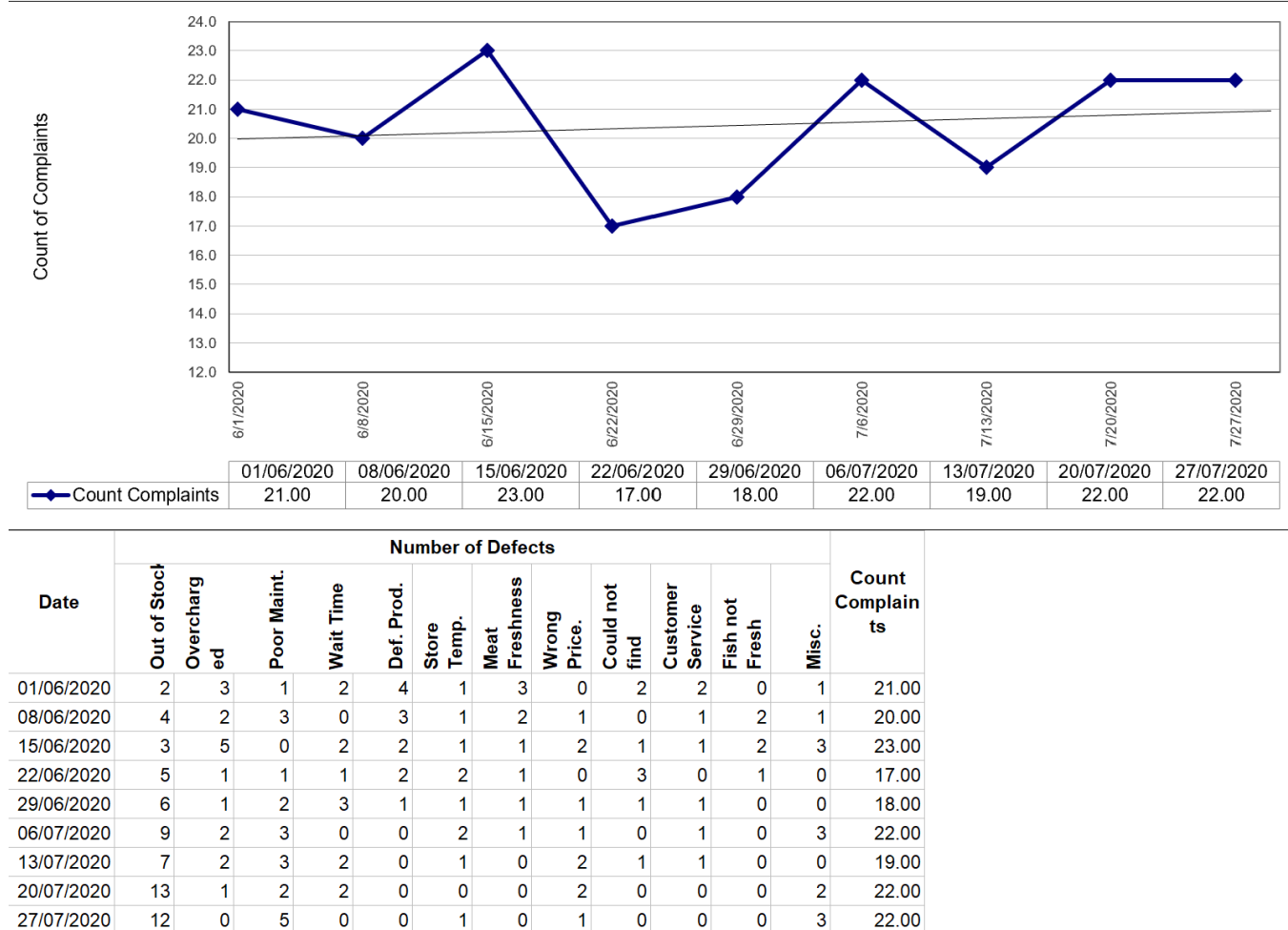
Pareto Chart

During the Pareto analysis, we begin to truly understand the hierarchy of the issues at hand. By incorporating this common quality management technique, we can focus our attention towards the more important customer complaint areas that the business is experiencing. This concept gives visual representation to the relatively few factors that generally account for a large percentage of the total situation at hand. Here we can observe the 80-20 rule. The Pareto concept states that approximately 80 percent pf the problems come from 20 percent of the items. So, in this circumstance, we can see that a majority (80%) of Tip Top Markets problems are coming from their issue with inventory. By simultaneously correcting this issue with inventory, they will be also addressing the other complaint categories of defective products and stale meats/fish.
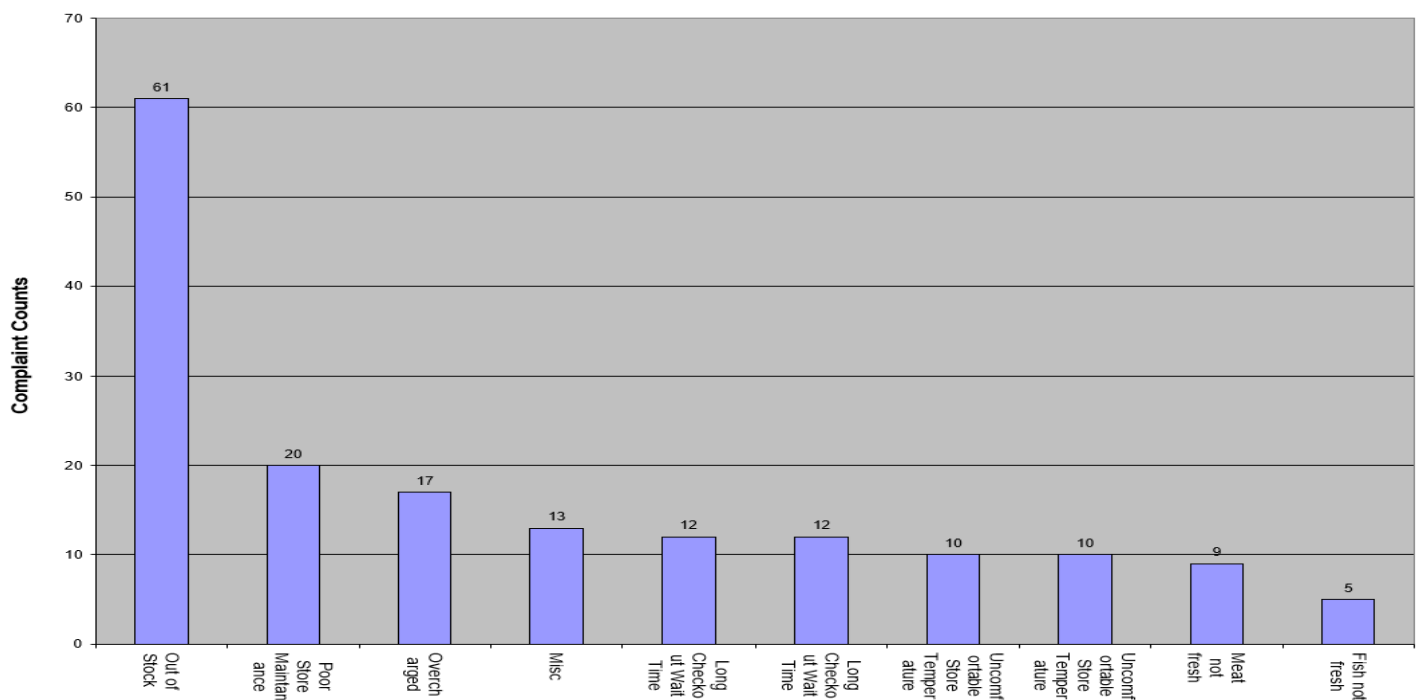
Run Chart

By incorporating the run chart analysis, we had hopes to see a decline in the number of Tuesday customer complaints after the 15-July policy implementations; Unfortunately, this was not the case. After plugging into the data and observing the complaint counts over the nine Tuesday's studied, we can see that complaint frequency stayed rather linear and hovered around the complaint average of 20.44 per Tuesday. In fact, when inserting a forecast line, we can observe a slight increase of one complaint per week from start to finish of the study. Through this simplistic graphic we can make the conclusion that Tip Top Markets are in trouble with its consumer base and that the 15-July process changes had little to no ultimate effect on the current level of incoming complaints.

Tip Top Market Complaint Run Chart

	01/06/2020	08/06/2020	15/06/2020	22/06/2020	29/06/2020	06/07/2020	13/07/2020	20/07/2020	27/07/2020
Count Complaints	21.00	20.00	23.00	17.00	18.00	22.00	19.00	22.00	22.00

| Date	Number of Defects												Count Complaints
	Out of Stock	Overcharged	Poor Maint.	Wait Time	Def. Prod.	Store Temp.	Meat Freshness	Wrong Price.	Could not find	Customer Service	Fish not Fresh	Misc.	
01/06/2020	2	3	1	2	4	1	3	0	2	2	0	1	21.00
08/06/2020	4	2	3	0	3	1	2	1	0	1	2	1	20.00
15/06/2020	3	5	0	2	2	1	1	2	1	1	2	3	23.00
22/06/2020	5	1	1	1	2	2	1	0	3	0	1	0	17.00
29/06/2020	6	1	2	3	1	1	1	1	1	1	0	0	18.00
06/07/2020	9	2	3	0	0	2	1	1	0	1	0	3	22.00
13/07/2020	7	2	3	2	0	1	0	2	1	1	0	0	19.00
20/07/2020	13	1	2	2	0	0	0	2	0	0	0	2	22.00
27/07/2020	12	0	5	0	0	1	0	1	0	0	0	3	22.00

Cause-and-Effect Diagram

As research began to wind down and our findings began to tell a story, it was time to develop a structured approach to search for the possible causes of the problems at hand. From a broad stance, it was determined that the most detrimental problem at hand was inventory being out of stock. This was clearly evidence through the sheer number of complaints that customer service received revolving around out-of-stock products. Once the main problem was established and determined, we were able to identify potential categories of factors that may be the root cause of the inventory issue. These categories have been classified as process, materials, personnel, and uncontrollable events.

When initially looking at this issue of out-of-stock inventory, our first initial assumption circled around quality assurance both at Tip Top Markets and their vendors. By implementing a processes of quality assurance, not only would this begin to correct the inventory issue, but it would help maximize the products being sold by reducing the amount of stale meat/fish and defective products found on the shelves.

Secondly, a wide spanning process improvement is more than likely in order. Currently we assume that Tip Top Marketing does not have a strong enough inventory forecasting processes along with an inefficient purchasing process. This in turn may all revolved around the pure fact that the marketplace does not have the required funds to keep their shelves stocked with premier goods. If this is true, I believe an even more extensive problem is at hand from a corporate standpoint.

Lastly, this grocery store business is clearly lacking in the personnel department. Three quarters of the complaints recorded can be boiled down into a lack of leadership, poor supervision, lack of training, and a lack of required standards.
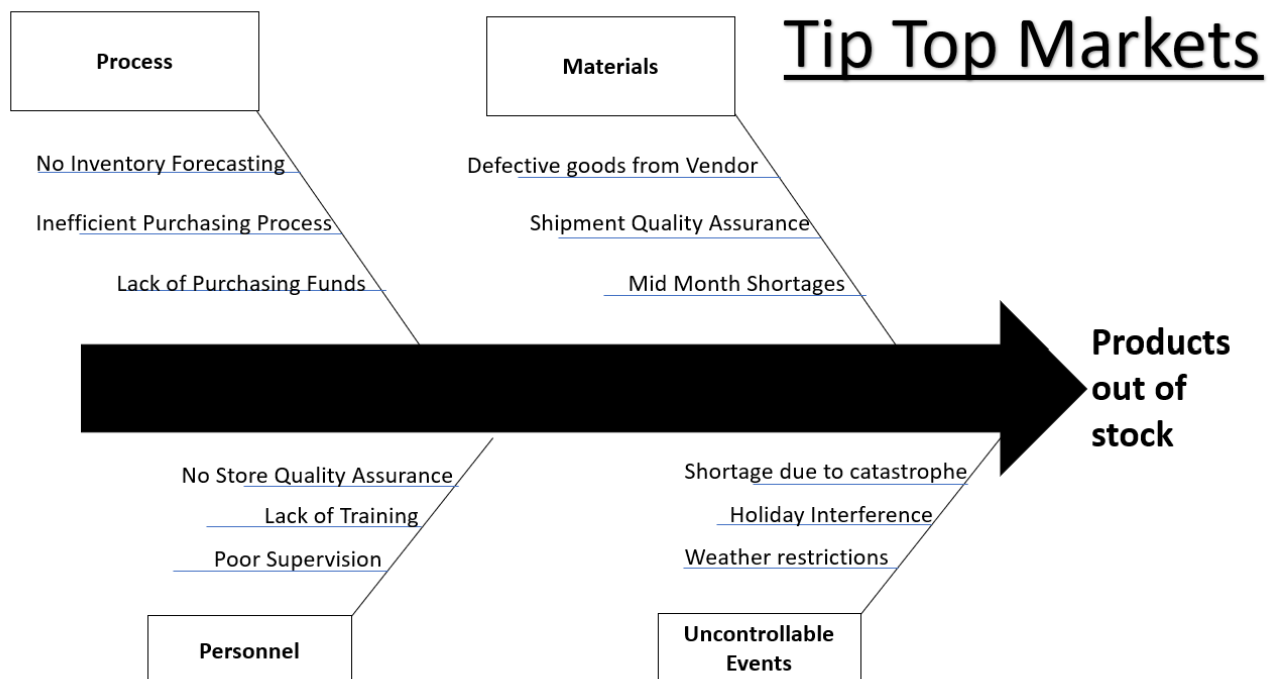
Recommendations

1. There is an undeniable necessity to address the out-of-stock issue with haste. I would propose first an extensive review of store finances to discover if purchasing power is catalyst to this inventory control issue. If a lack of purchasing funds is in fact the issue at hand, then more in-depth and wide-ranging research will need to be conducted on the overall health of not only the specific location but the company as a whole in order to determine the appropriate course of action.

2. Secondly, regarding inventory control, I would recommend an extensive review of all vendors and their business operating procedures. By conducting such review, Tip Top Markets may in fact discover circumstances in vendor quality assurance, transportation practices, and shortages that simply may not conform with their business operations. If that is the case, it would be prudent to entertain opportunities with new, more efficient, and possibly local vendors. Working with local vendors may cut down on transportation time, cost, and increase product shelf life.

3. My third suggestion would be the implementation of a comprehensive employee performance review program conducted by department leadership. With the implementation of such a program, management should identify an improvement in customer service, check out speeds, and marketplace appearance/cleanliness. If these improvements are not met, then through the performance review practice you have provided management with the authority to terminate underperforming employees and begin reshaping their department teams.

4. My fourth suggestion would be to implement two specifically tasked teams; First, a purchasing/ shipment quality assurance team which will be responsible for accepting all incoming shipments and verify quality of all products heading to the shelves. By creating this seeming first line of defense from stale or defective products, Tip Top Markets should not only be able to decrease their negative product complaints but also gain a better inventory purchasing and forecasting process. The second team developed would be a customer relations and experience team. This team would be responsible for conducting regular customer surveys, disbursing coupons, and simply engaging with the customers to make their shopping experience more enjoyable.

5. My fifth and final recommendation follows along the lines of my third. I believe that specifically in Tip Top Markets, there needs to be an in-depth review of all store and company leadership. Through this review, this business will be able to identify areas that are lacking the required leadership to turn the ship around and recreate an enjoyable shopping experience for the consumer. By potentially reshaping the leadership structure Tip Top Markets will be able to construct and implement stricter, more efficient standards of operation along with the creation of a more inclusive and higher functioning team environment.