Supply Chain Management: From Vision to Implementation
Fawcett, Ellram, and Ogden

Chapter 2: Customer Fulfillment Strategies

Chapter Learning Objectives
1. Discuss how information has empowered customers, raising the competitive bar for today's companies.
2. Explain how customers define value and what a company must do to deliver value. Describe the competitive contributions of cost, quality, flexibility, delivery, and innovation capabilities.
3. Explain the nature of customer service and satisfaction and how they differ from customer success.
4. Explain why the end customer should be the focal point for the entire supply chain.
5. Segment customers based on strategic importance. Describe the relationships, systems, and processes needed to deliver desired levels of service to different customers.
6. Discuss the role of operational excellence in assuring profitable customer relationships.

Chapter Outline
2.1 The Information Empowered Customer
Today's customers are empowered with a broad range of product and pricing information. As a result, channel power is shifting down the supply chain toward the end consumer. This is created customers that use their market leverage to constantly demand higher levels of service at lower cost; these customers have been called "high service sponges." High service sponges soak up their suppliers resources to fuel their own quest for market dominance.

2.2 Creating Value to Meet Customers' Needs
Michael Porter noted that companies have to develop a distinctive advantage to succeed. Distinctive advantage implies that accompanied differentiate itself from the mind of customers.

2.2.1 Quality
Quality includes both design and manufacturing elements. The product must be designed to live up to or exceed customer expectations. Manufacturing must then conform to the design specifications during production. Quality must be designed and built into the company's products and processes. David Garvin identifies eight factors that comprise quality of the mind of the end-user:
1.   Performance - the primary operating characteristics of the product.
2.   Features - the "bells and whistles" or extras that distinguish a product from competitors' offerings.
3.   Reliability - the notion that a product can be counted on not to fail.
4.   Conformance - measures how well a product matches established specifications.
5.   Durability - refers to the product's mean time between failures and its overall life expectancy.

6.   Serviceability - the speed of repair when quality problems arise.

7.   Aesthetics - perception of fit and finish or artistic value.

8.   Perceived quality - overall perceptions of a product or brand's quality reputation

2.2.2 Cost

Globalization has increased factor mobility and market access, requiring local companies to match the cost position of global rivals who often possess low-cost labor advantages. Four cost-reduction strategies are widely pursued: 1) productivity enhancement, 2) adoption of advanced process technology, 3) locating facilities in countries with low-cost inputs, and 4) sourcing from the world's most efficient suppliers. The real measure of cost performance today is "total landed cost." The entire supply chain must be designed for efficiency. Cost issues drive strategic decisions such as global manufacturing rationalization, outsourcing, and downsizing as firms seek lower labor, materials, and process costs. When cost competitiveness improves, companies can expand market share, increase scale economies, improve profitability, and invest in future capabilities.

2.2.3 Flexibility

Flexibility is the capability to adapt to new, different, or changing requirements. Flexible organizations operate was short lead times, are responsive to special customer requests, and can adapt rapidly to unexpected events. Flexibility requires investment in information and automated production and logistics technologies. Following are critical to creating a flexible culture:

- Make cycle time a priority throughout the organization
- Map processes to make them visible
- Identify key time-related activities/decisions
- Benchmark against customer requirements and competitors' capabilities
- Cross-train workers and organize work in multifunctional teams
- Design performance measures to value fast-cycle capabilities
- Develop information systems to track activities and share information
- Build learning loops into every process throughout the organization

2.2.4 Delivery

Competing on delivery means consistently delivering on time and in the correct quantity. Fast, reliable delivery requires the reduction of order cycle time in the elimination of variability. Delivery capability is cross-functional by nature, requiring coordinated efforts by sourcing, operations, and logistics. Operations and logistics often represent 90% of total order cycle time

2.2.5 Innovation

Innovation creates new markets and changes industry standards. Early Supplier Involvement (ESI) is a key element of innovation strategies. Products introduced on-time but 50% over budget, realized only a 4% reduction in profit. Products introduced on budget but six months late experienced a 33% decrease in profits.

2.2.6   Trade-Offs Versus Synergies
Traditionally managers have believed that there are inherent trade-offs to be made in operations and logistics. Modern supply-chain managers seek to build synergies among the dimensions of customer value. The elimination of restrictive work rules and proactive measurement enable cost, quality, flexibility, delivery, and innovation to work together, like the spokes of a wheel, to move the firm forward to a stronger competitive position.

Trade-off versus Synergy
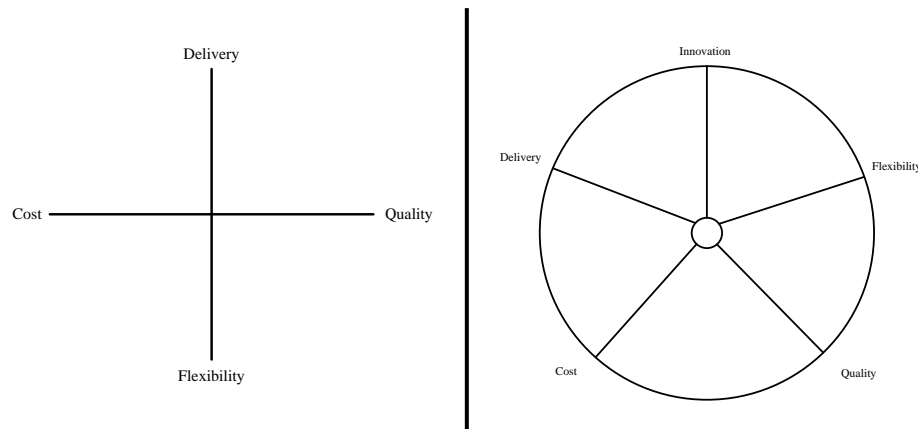
20

2.3   Understanding Satisfaction to Fulfill Customers' Needs
Customers are satisfied when their experiences meet a priori expectations. The key is satisfying customers is to understand their needs so that unique products and services can be delivered to meet those needs. Despite a growing recognition by corporate America of the need to improve customer satisfaction, satisfaction levels have remained stagnant the mid-1990s.

Customer satisfaction leads to customer loyalty. Loyalty is achieved when customers perceive truly distinctive service. Studies have found that customers who rated their service experience as largely satisfied are six times more likely to defect to a competitor than those who were completely satisfied.

2.3.1   Customer Service Strategies
Traditional customer service focuses on internal service levels and goals (percent effective products, percent on-time delivery, and fill rate) with the expectation being, internal measures represent external satisfaction. Without feedback, it is easy to emphasize activities the customer does not value.

2.3.2   Customer Satisfaction Strategies
Customer satisfaction strategies required direct input from a customer. Information typically gathered from surveys, focus groups, in-depth personal interviews, and ethno-graphic studies. Customer input allows managers to: (1) align measures to customer expectations, (2) allocate resources and reevaluate priorities, and (3) adopt new policies or practices.

2.3.3   Customer Success Strategies
Customer success strategies use supply chain knowledge to help customers become more competitive. Success strategies consist of:
1. A clearly communicated goal to help customers succeed
2. A clear understanding of downstream requirements
3. Investment in customer-valued capabilities
4. Training provided to customers
5. Resources shared with customers

2.3.4   The End Customer
The end customer is the only one who puts money into the supply chain and is therefore focused of all activities. Successful companies share information that helps the chain focus on the end customer. Customer fulfillment strategies seek to address:
- What are the real needs of our immediate customers?
- What are the real needs of our customers' customers?
- What are the real needs of our supply chain's end customers?
- What information must be shared up and down the supply chain to meet these customer needs?
- What capabilities must be developed up and down the supply chain to meet these customer needs?
- How can we help other supply chain members improve the overall chain's customer fulfillment capabilities?

2.4   Implementing a Customer Centric Fulfillment Strategy
Companies need the right processes and systems to enable their customer fulfillment strategy to deliver the value and satisfaction customers expect. Managers should consider two facts when developing processes to match the right kinds and levels of service to specific customers:
- Not all customers are equal and they do not all deserve the same high level of service.
- Not all customers require the same service.
When managers tailored customer service definitions, employee training, and performance measures for specific branches to fit unique customer needs, service and satisfaction improved.

2.4.1   Matching Fulfillment Strategies to Customer Needs

Three types of analysis are needed to effectively tailor supply-chain service levels to specific customers:

1. Customer Analysis - identifies customer needs, helping managers segment customers (identify unique groups of customers).
2. Supply Chain Analysis - identifies and customer needs and the capabilities that must exist to meet those needs. This is used to find customer success factors, the capabilities that first-tier customers need to satisfy their downstream customers.
3. Competency Analysis - core competency is something that a company does so well that it provides a competitive advantage. True core competencies are usually cross functional.

2.4.2 Defining Relationship Intensity

Relationship intensity can be categorized using the Pareto principal as follows: "A" customers are valued and received the highest service; "B" customers should be managed carefully; "C" customers should be managed for efficiency. After classifying customers by sales volume, you must evaluate strategic issues such as relationship profitability, future potential, and linkages to keep downstream customers.

Customers of choice are the "A" customers whose needs the company is well-positioned to fulfill. Companies lack the resources to offer tailored products to more than the few customers of choice. Customers of choice relationships are characterized by:

- Frequent communication at many levels between the firms, including marketing, engineering, logistics, and senior management.
- Inter-organizational teams are formed to solve problems or to work on SC initiatives such as new product development.
- Information systems are linked to enable real-time information exchange on inventory levels, order status, and future demand.
- Fulfillment processes are designed for flexibility to accommodate customers' special requests.
- Policies and procedures support extraordinary efforts to meet unexpected needs or unusual requests.

Highly valued relationships are comprised of many "A" and most "B" customers. Members of this group often become tomorrow's customers a choice.

Transactional relationships are comprised of "C" customers, receiving little personal attention. Leading SC companies strive for high levels of standardized service excellence.

2.4.3 Evaluating the Profitability of Customer Relationships

Managers need to know how much it costs to serve specific customer segments. Activity-Based Costing, which ties specific costs directly to the customers that create them, can be used to identify the profitability of a business relationship.

Chapter 2: Customer Fulfillment Strategies

> Operational excellence is required to profitably provide the value demanded by high service sponges.

2.4.4   Using Customer Relationship Management Systems
Customer Relationship Management (CRM) software can be used to create customer profiles that capture buying habits and determine customer profitability. Preferred customer cards make it easy to collect information.

2.4.5   Recognizing Barriers to Effective Customer Fulfillment
Companies may seek to improve service levels, but direct their efforts toward the wrong activities. Companies may fail to deliver on their promises to be customer-service oriented. Additionally, access to information has lead some companies to provide low service levels to "less valuable" customers, all customers deserve respect. Customers identify the following as the cause of dissatisfaction in almost 80% of "horror stories": training, measurement, lack of empowerment, poorly designed policies.

Chapter Review Exercises

1. Describe how has the information revolution changed the dynamics of the buyer/supplier relationship. How do you use the Internet to improve your ability to get the best deal for the purchases you make?
Customers have access to a broad range of product and pricing information, this has resulted in power shifting down the supply chain to the end consumer. Customers use product and pricing information to leverage better service at lower cost. Customers use the Internet to identify the product characteristics that satisfy their need and the location/store with the best price, using misinformation to negotiate a better price. Customers also can use the Internet to bypass middlemen altogether by making the purchases online.

2. Discuss the five areas of customer value? Which areas are most important to you? Why? Identify at least one company that differentiates itself in each area of customer value.
Customers seek value in terms of quality, cost, flexibility, delivery, and innovation.
- *Quality – includes both design and manufacturing elements; the ability to identify customer requirements and then produce the product according to those requirements. Both Toyota and Honda use quality as a competitive weapon.*
- *Cost- reducing the cost of producing a product by using productivity enhancements, adopting new technology, locating close to low cost factor inputs, or sourcing from efficient suppliers. Wal-Mart is an example of a company that uses cost as a competitive weapon.*
- *Flexibility- is the ability to adapt to the changing competitive environment. Amazon.com and Toyota use flexibility as a competitive weapon.*
- *Delivery- delivering on time, in the correct quantity and quality, every time. UPS and FedEx both compete on the basis of delivery.*

- *Innovation- the ability to deliver new and unique products to the market targeted at satisfying some unmet need or want. 3M and Rubbermaid both compete using innovation, as do Toyota (hybrid technology), Intel and AMD, etc.*

3. Explain why customer satisfaction levels have remained stagnant over the past decade despite all of the talk regarding the importance of customers.

Few companies have created a truly customer-centric culture, resulting in a failure to deliver on customer satisfaction promises. It would seem that the case for improving customer satisfaction to improve profitability has been made ineffectively to management seeking to cut cost to drive short term performance. Failure to properly train, empower, and measure front line employees results in dysfunctional behavior at odds with the stated goal of improving customer satisfaction.

4. Explain why customer loyalty is so rare. Why are customers so willing to defect? As a SC manager, describe how you would address this challenge.

Loyalty is action based on exceedingly high levels of customer satisfaction. Since so few companies have established cultures that foster actions leading to customer satisfaction, few customers receive service which merits loyalty. Therefore, customers are willing to defect to take advantage of better service or prices from a competitor. To improve customer satisfaction and thereby drive loyalty, I would insure that frontline employees and management understood the importance of loyalty in driving continued profitability. I would then provide the proper training to allow empowerment, allowing employees to deliver on the customer service pledge. Finally, I would insure that the measurement system was properly aligned to insure that behavior consistent with customer satisfaction was both recognized and rewarded.

5. Describe the distinctive characteristics of customer service, customer satisfaction, and customer success strategies. Explain when each of these customer fulfillment strategies would be appropriate.

Customer Service- is an internally focused process where internal measures are used as surrogates for measures of customer satisfaction. This type of strategy would suffice when goals and measures are correctly aligned with true customer requirements.

Customer Satisfaction- acquires customer input to properly design the product/service, process, and control/measurement system to achieve customer-valued outputs. Most service oriented organizations would adopt this type of strategy.

Customer Success- uses supply chain knowledge to help customers become more competitive. This type of strategy is applicable for intermediary organizations (those without direct contact to the end customer).

6. Looking at Table 2.2, what are AquaFit's options? Explain how you would manage the relationship with H.S. Sponge.

H.S. Sponge appears profitable using traditional cost accounting; however, ABC accounting reveals that H.S. Sponge is actually unprofitable. AquaFit must either (1) change it pricing structure to take into consideration the new accounting information (raising the prices it charges Sponge), (2) reduce the services it provides Sponge until it achieves profitability (unlikely due to customer requirements), or (3) work to reduce the cost of delivering services to Sponge. Working with Sponge to share information, AquaFit should be able improve its service and profitability.

7. Describe the challenges a SC manager is likely to encounter during the implementation of a customer-centric fulfillment strategy. Map the challenges to each of the steps identified in Figure 2.5.

The flowchart for customer-centric supply chain management contains 7 steps:

1. *Customer Analysis- identifies customer needs, helping management to segment customers. Identifying customer needs is a non-trivial exercise especially for companies that have been internally focused in the past.*
2. *Supply Chain Analysis- identifies the end customer needs and the capabilities that must exist in the chain to meet those needs. Having segmented the customer base, the next step is to identify those capabilities necessary to deliver exceptional customer satisfaction. This may require the company to seek new suppliers and even customers that have unique capabilities that the customer values.*
3. *Competitive Analysis- identifies those things that make us uniquely good at delivering value to the customer. The value proposition requires that we add something of unique value to attract customers, our unique capabilities differentiate our offerings from competitors. The requirement here is to identify how our unique capability adds to the value added stream.*
4. *Define Customer Success Factors- identifies those capabilities that first-tier customers need to satisfy their downstream customers. This may require us to seek new "customers" act as intermediaries between us and the end consumer.*
5. *Define Relationship Intensity- identifies those customers that most help the company to achieve profitability allowing for segmentation and targeted product/service offerings. While it may be easy to identify revenue flows, use of traditional cost accounting may distort which customers actual assist us in being profitable. Implementation of ABC costing may be required.*
6. *Establish Appropriate Processes and Systems- once the customer and their needs/wants have been identified, appropriate processes and measurements must be designed and implemented to deliver what the customer wants consistently. Changing to a customer focus also requires a revision to the process and measurement system. The consistently good outcomes are dependent on a properly designed system- if the system is right, the product/service will be right. Changing the measurement system aligns behavior with the new system goal, eliminating dysfunctional behavior.*
7. *Periodic Review- the market changes, we must periodically reevaluate our products and systems to insure that we remain relevant in the market. Management must overcome human nature and resist the desire to become complacent with success. The customer's requirements are always increasing, we*

> *need to review our value proposition to insure that we remain relevant in the changing marketplace.*

8. Discuss the actions you would take to improve the likely outcomes of customer relationships mapped to each of the three non-aligned quadrants of the alignment matrix shown in Figure 2.7.

If we are in the quadrant that is highly valued by the customer but we lack competency, the best alternative is probably to seek a strategic partnership with a supplier that would allow immediate upgrade of our skills. Learning from this supplier, we could seek to develop our own skills or develop complementary core competencies to insure our position in the supply chain.

If we are in a quadrant where we have low competency and low customer requirements, we should seek to minimize the costs associated with the activity. This is a good candidate for outsourcing or elimination (if possible).

If we are uniquely good at something the customer does not value, we need to refocus our efforts in an area that the customer values, or educate the customer concerning the value they are receiving. Failure to do so will result in low value perception by the customer resulting in higher than necessary costs.

9. Explain why "service in America stinks." Discuss the issues behind your explanation. Describe two or three specific actions you would take to address these issues.

Service in America stinks because of a number of different issues. Most prevalent among these issues is that management provides lip service to customer service while clearly communicating to the workforce that cutting cost or some other aspect of competition is of greater importance. This disconnect between words and actions creates a jaded customer and employee. To correct this disconnect, management must clearly define their goal. They must then design systems, processes, and measurement that focus everyone in the organization toward the goal of satisfying the customer. This must be in conjunction with training for management and employees to insure that they have the tools necessary to effectively act in an empowered manner to satisfy the customer. Having done so, the actual capabilities of the system must be communicated to the customer to create a realistic expectation of the outcomes.

10. Describe how you could use the "lifetime-stream-of-profits" concept to increase managerial commitment to customer satisfaction.

Management has been traditionally focused on short term financial goals. This dictates dysfunctional behavior when considering the goal of for profit organizations is to make money now and in the future. By focusing management on the long term consequences of losing customers based on poor system performance, the focus is shifted to growing the revenue stream and maintaining good customer relationships.

Case: SCM^2

Chapter 2: Customer Fulfillment Strategies

1.   Is it possible to save Sony de Mexico? Or is Rey refusing to see the writing on the
        wall?
*It should be a relatively easy sell to corporate to show how the Mexican operations add value
by differentiating their products based on speed to market. While unfortunate that the
operations have not previously adopted systems that would allow them to differentiate based
on geographic proximity, there are a number of ways that this can add value to the overall
supply chain, allowing the Mexican operations to remain viable.*

2.   What does Rey need to do to determine whether a time-based advantage is viable?
*Rey must quantify the savings customers can achieve by receiving goods from the Mexican
operations rather than receiving shipments from Asia. By quantifying the total landed cost
(including the carrying cost of inventory and safety stock), it is possible that Rey can justify
keeping the Mexican operations open. Additionally, Rey needs to focus on the ability to drive
revenue by differentiating products based on delivery speed and performance, thereby
offsetting any perception of cost disadvantage.*

3.   What changes would need to take place within Sony de Mexico?
*Rey will need to establish a lean organization and better communication with customers to
determine what the correct product mix is and when it is needed. By switching to a
replenishment mode, inventory can be eliminated in the supply chain, resulting in less lead
time between manufacture and sale, less forecast error and better allocation of
manufacturing resources to products with current demand. Additionally, Rey should consider
changing the nature of his operations to one of final assembly of parts mass produced in Asia
based on current demand from the U.S. customer base. This would allow continued
operations, better match between production and demand, and lower manufacturing costs for
those parts outsourced to an Asian supplier.*

Supplement B: Productivity and Quality Management
SB.1 Productivity Management
        Productivity is the ratio that measures the ability of the process to efficiently turn input
        into output. Productivity is the ratio of total output to total input. Labor Productivity
        considers the amount of output created by a standard measure of labor input. Multifactor
        Productivity considers the amount of output created based on all inputs to the
        transformation process. To be useful, productivity is used in context of internal
        growth/decline or as a measuring stick against other organizations.

Supplement B: Exercises pp. 55
1.   1.04 lawns per labor hour
2.   .91 lawns per labor hour ; 13% reduction in labor productivity
3.   Old Machine Productivity: 20 cups per watt
        New Machine Productivity: 30 cups per watt
        Change in Productivity: 50%
4.   Old Car MPG: 12
        New Car MPG: 30
        Change in MPG: 150%

5. Multifactor Productivity: 1.07
6. Old System: .42 tents per labor hour
    New System: .63 tents per labor hour
    Percent Change: 50%

SB.2 Quality Management

Quality problems typically stem from variation in the manufacturing process. There are two types of variation: (1) common and (2) special. We can use statistics to remove special cause variation from the process and thereby improve the quality of output.

SB.2.1 Control Charts

Control charts are created by finding a centerline for the variable under study and then calculating control limits ensuring that the statistical probability of a value being above the upper control limit or below the lower control limit is very small.

Attribute Control chart: P-charts are used to determine whether the process is producing an acceptable percent of non-conforming items.

Variable Control chart: X-bar charts are used to determine whether the process is producing along a critical product dimension.

Charts are generally in control if no point exceeds the control limits. Charts may be out of control if there is (1) a downward or upward sloping trend, (2) widening gaps between observed values, (3) several values in a row above or below the mean.
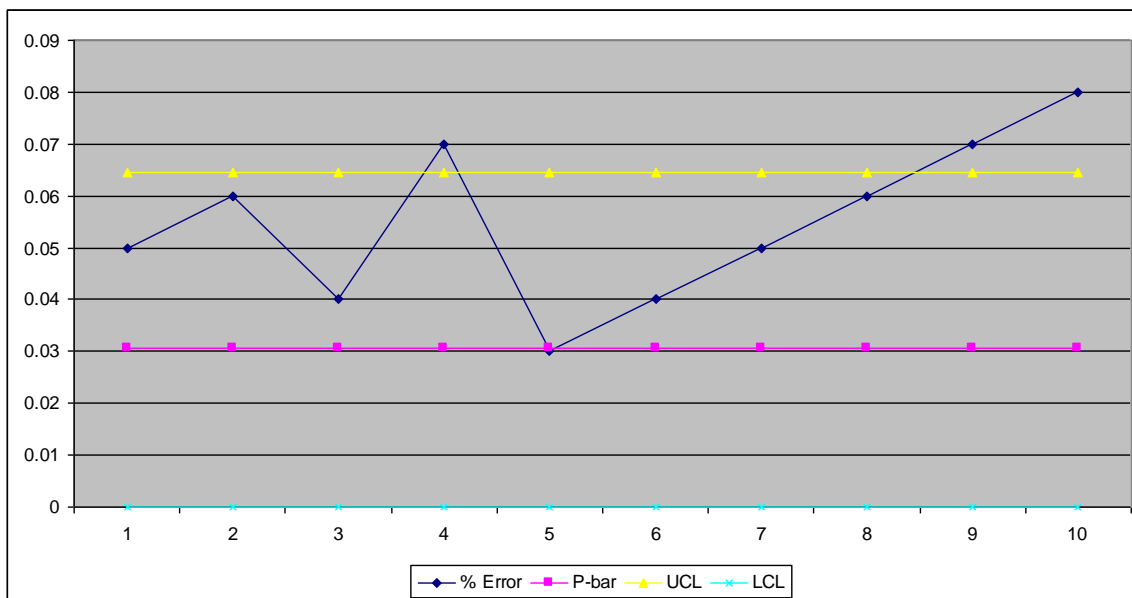
Supplement B: Exercises pp. 59

1. Standard Deviaiton: 5.9349
    Standard Error: 3.4266
2. Upper Control Limit: 60.2797
    Lower Control Limit: 39.7203
3. Upper Control Limit: 0.1852
    Lower Control Limit: 0
4. Mean: .2929
    Standard Deviation: .0442

5.   P-Chart with 95% Confidence
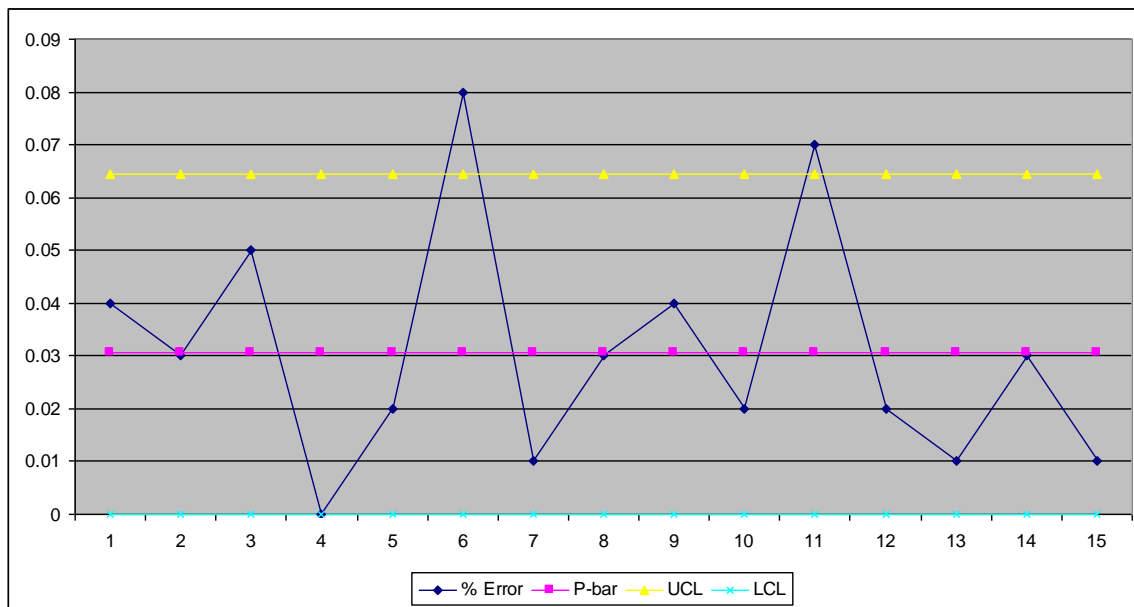
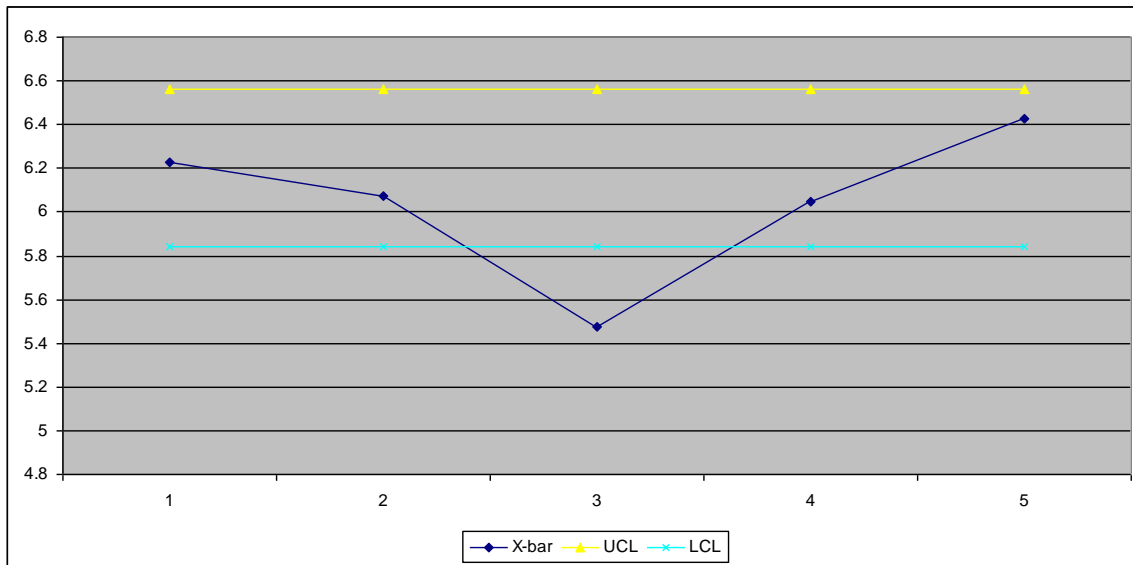Out of Control

6.   P-Chart
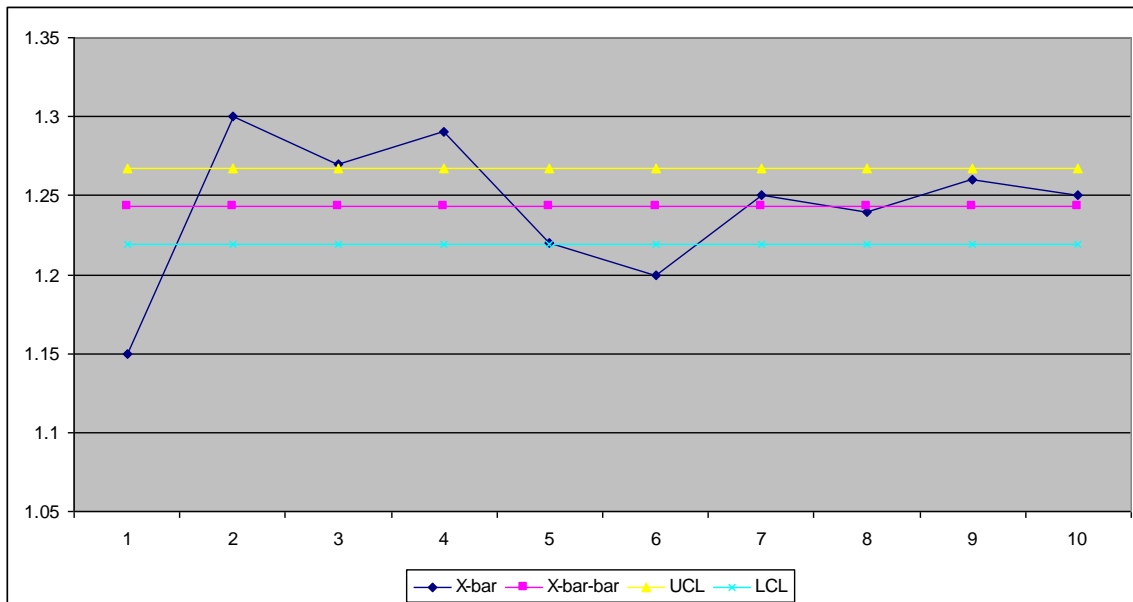

Out of Control

7.   X-bar Chart

Out of Control

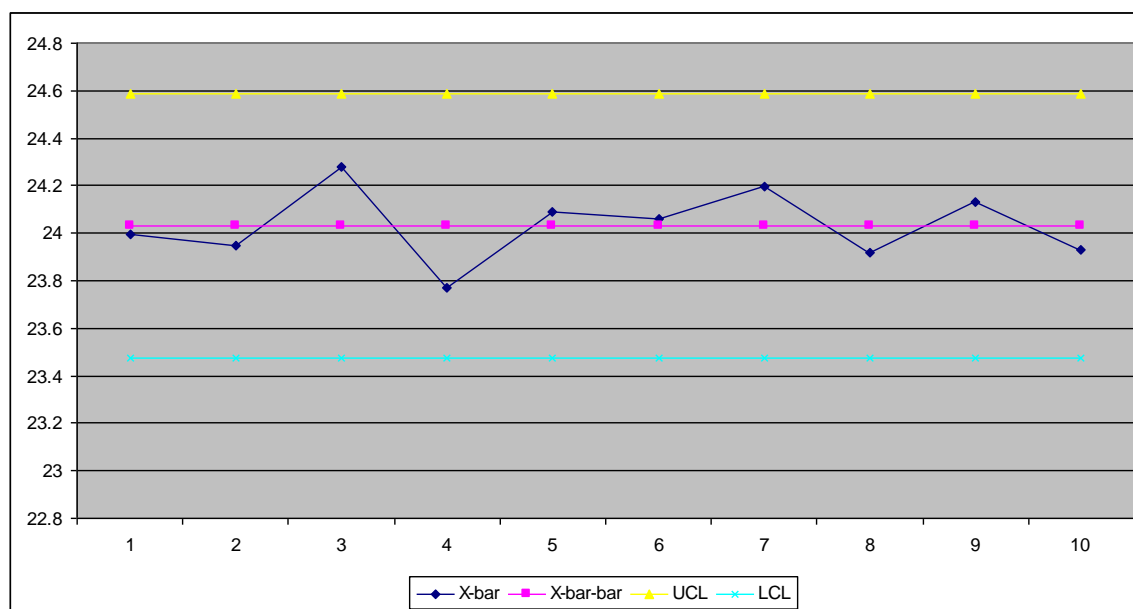8.   X-Bar Chart

Out of Control

9.   Upper Control Limit: 102.4932
       Lower Control Limit: 96.9735

Chapter 2: Customer Fulfillment Strategies

10.   X-bar Chart

In Control

SB.2.2 Process Capability
   Used to determine whether a process is capable of producing a quality output.
   Compares the process control limits to the product specifications.
   - Cpk = 1 indicates a process that will produce conforming output 99.73% of the time
   - Cpk > 1 indicates a process that will produce according to specifications
   - Cpk < 1 indicates a process that will not produce according to specifications
   - A negative Cpk indicates a process where the process mean is outside of the specifications

Supplement B: Exercises pp. 63
1.   Cpk = 1.2821
       Process Capable, Process not Centered
2.   Cpk = .5333
       Process Not Capable, Process Centered
3.   Cpk = 0.6222
       Process Not Capable, Process Not Centered

SB.2.3 Problem Solving
   Cause Effect Diagram (Fishbone Diagram) – helps to identify under cause for a non-conforming outcome.
   Pareto Diagram – an application of the 80/20 Rule; helps to identify the vital few from the trivial many.