

## Customer Performance in the Supply Chain

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**Abstract:** In the supply chain the supplier is expected to meet the performance requirements of the customer. In order to develop true win-win relationships in the supply chain a customer should critically evaluate their own performance towards their suppliers and allow their suppliers to evaluate that performance as well. In this research note we investigate the performance requirements the customer should meet to satisfy the supplier. We first define customer and supplier performance measurement in the supply chain. Then we discuss the benefits of performance collaboration and introduce a framework for customer performance measures in a supply chain. This research is conceptual and makes the assumption that the buyer is willing to measure their own performance in the context of meeting the supplier's needs and to allow the supplier to measure the buyer's performance. Supply chain research in the areas of customer service and customer satisfaction focus on meeting the buyer's needs. We turn this research around and focus on the service the buyer provides to the supplier and the satisfaction the buyer has with that service.

**Keywords:** Supply chain, performance measurement, supplier service, supplier satisfaction

### I. Introduction

A key principle of supply chain management is the development of a win-win relationship between supply chain partners in order to maximize the profit that the supply chain makes. Win-win relationships are built on trust which then allows for the sharing of business information that is pertinent to the relationship. Typically in a supply chain, suppliers measure their internal processes in order to make sure they can meet the quantity, quality and delivery requirements of their customers. And, customers evaluate the performance of their suppliers through a supplier scorecard in a number of areas including cost, quality, delivery, flexibility, and contribution to new product development. Research in this area focuses on customer relationship management and supplier relationship management.

In customer relationship management (CRM) suppliers determine how to meet the needs of their customers. Hill describes CRM as “an information system that leverages a number of customer-facing activities to help an organization better understand its customers so that it can better match its products and services to customer needs and thereby increase sales.” [6, p. 68]. While CRM requires communication between a supplier and their customers, it is the supplier's performance that is being measured. The supplier is measuring their own performance in meeting the needs of their customers in order to provide better service and increase sales. This internal measurement of performance can be considered customer service.

Complimentary to CRM is supplier relationship management (SRM). The APICS Dictionary defines SRM as “a comprehensive approach to managing an enterprise's interactions with the organizations that supply the goods and services the enterprise uses. SRM is often associated with ... evaluating supplier performance” [2, p. 134]. While SRM does encompass the automation of processes and the sharing of information through communication between the supplier and the customer, it is still the supplier who is being evaluated by the customer. In this case, the customer is measuring their satisfaction with the services provided by the supplier. The focus of SRM is on how well the supplier meets the expectations of the customer, thereby creating customer satisfaction. There has been an extensive amount of research in the area of customer satisfaction through adaptations of the service quality gap model (SERVQUAL) developed by Parasuraman et al. [8].

While measures of customer satisfaction and customer service are well known, academic research in the areas of Supplier satisfaction and supplier service is very limited. Discussion with numerous practitioners has identified only a few companies that collect feedback from suppliers on their performance in meeting their supplier's business needs. And, those companies indicated they evaluate their performance using the same scorecard they use to evaluate their suppliers. Therefore, a gap exists in the supply chain literature in the area of customer performance. In this research we change the direction of the customer relationship management and supplier relationship

management models around. Instead of the customer being the focal point, the focus is now on the supplier. Our objective is to identify and categorize performance measures that can be used to assess the performance of the customer from the perspective of the supplier. In this report we first discuss the literature that considers the expectations and needs of the supplier. Next, we differentiate between supplier performance and customer performance and define the two components of customer performance: supplier service and supplier satisfaction. Then we provide a framework for measures of supplier service and supplier satisfaction. Finally, in our conclusion we identify the limitations of our research, the relevance to practitioners, and present a research agenda for studying customer performance.

## II. Literature Review

Currently, there is a very small body of academic literature that examines supplier satisfaction. In the first empirical study we are aware of Fram and Presberg [5] investigated the supplier's perspectives towards and experiences with industrial purchasing partnerships. They found suppliers liked partnerships because of the stability they provided and the way they are able to reduce problems and improve communication. Forker and Hershauer [4] investigated supplier satisfaction from a quality perspective. Their survey results indicated that supplier satisfaction was influenced by clarity, transparency, and control of quality management and supplier development programs. Wong [9] also investigated supplier satisfaction from a quality perspective. He advocates that companies partnering with their suppliers should consider the needs of their suppliers in order to obtain the help of the suppliers in meeting the needs of the company's customers. A survey of 139 supply chain managers by Wong [10] found that companies should create cooperative relationships with their suppliers in order to improve the satisfaction of the company's customers. A study on the influence of power driven relationships in the supply chain by Benton and Maloni [1] found that supplier satisfaction was driven by the nature of the buyer-seller relationship rather than by performance. Their study empirically showed that if the power holder (the buyer) is attempting to create supplier satisfaction, then the buyer should develop a relationship-driven supply chain. A survey of buyers and sellers by Nyaga et al. [7] found that suppliers prefer buyers who share information that helps them produce goods or provide services both effectively and efficiently. They also found that the level of trust a supplier has with a buyer increases when they participate with the buyer in such activities as joint planning, goal setting, performance measurement, and problem solving.

## III. Performance in the Supply Chain

Performance measurement in supply chains has focused on the ability of the supplier to meet the various needs of their customers and is often measured as customer service and customer satisfaction. We classify customer service and customer satisfaction as measures of supplier performance. The counterpart of supplier performance is customer performance, which has two components: supplier service and supplier satisfaction. In this section we define and discuss supplier performance and customer performance.

### 3.1 Supplier Performance

The supplier performance measures of customer service and customer satisfaction are well known in the practitioner and academic literature. Supplier performance is focused on the performance of the supplier to meet the internal standards (customer service) and external expectations (customer satisfaction) of the customer. Customer service is comprised of performance measures the supplier will collect internally on their ability to meet basic customer requirements for the delivery of goods and services. The APICS Dictionary defines customer service as: *1) the ability of a company to address the needs, inquiries, and requests from customers. 2) a measure of the delivery of a product to the customer at the time specified* [2, p. 31].

Customer satisfaction is external facing and is comprised of metrics the customer collects on the supplier's performance in meeting the customer's expectations. Bowersox et al. defined customer satisfaction as follows: *"if a customer's expectations of a supplier's performance are met or exceeded, the customer will be satisfied. Conversely, if perceived performance is less than what the customer expected, then the customer is dissatisfied."* [3, p. 54].

### 3.2 Customer Performance

Customer performance is focused on the performance of the customer to meet the internal standards (supplier service) and external expectations (supplier satisfaction) of the supplier.

Customer performance has two components: supplier service and supplier satisfaction. We define supplier service as the ability of the customer to meet internal standards that address the requirements of their suppliers. Supplier service is comprised of performance measures the supplier will collect internally on their ability to meet basic supplier requirements that facilitate the delivery of goods and services from the supplier to the customer. In addition, supplier service measures can also focus on performance measures that can be collected after the delivery of the goods and services, such as invoice reconciliation. Supplier satisfaction is external facing and is comprised of metrics the supplier collects on the customer's performance in meeting the supplier's expectations. An example of supplier satisfaction is providing adequate lead time for the delivery of goods.

### 3.3 Internal and External Facing Measures

Supply chain performance metrics can be considered as either internal or external facing. We classify service metrics as internal facing because they are collected by the measuring party on their own performance. Often they are not shared with the supply chain partner unless the partner requests specific information. Satisfaction metrics are external facing because they are collected by the measuring party on the performance of their supply chain partner. In addition, they are provided as feedback to the measured party on their performance in meeting the expectations of the measuring party. Service metrics are correlated with satisfaction metrics such that a high level of performance in meeting service metrics should create a high level of performance in satisfaction metrics.

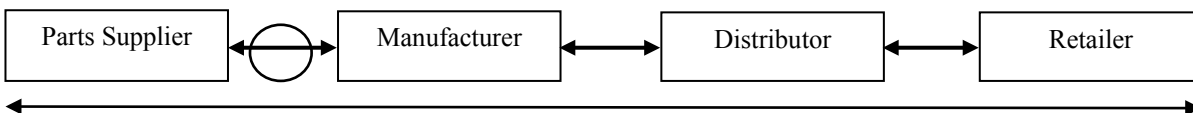
**3.4 Summary of Performance in the Supply Chain**

Supplier performance is measured through customer service (measured by the supplier) and customer satisfaction (measured by the customer). Conversely, customer performance is measured through supplier service (measured by the customer) and supplier satisfaction, (measured by the supplier). In supplier performance the entity being measured is the supplier, while in customer performance the entity being measured is the customer. See Figure 1 for a synopsis.

Figure 1 Performance Measurement in the Supply Chain

| Measuring Party | Party Being Measured                       |   |
|-----------------|--|---|
|                 | Manufacturer                               | Supplier  |
| Manufacturer    | Supplier Service<br><i>Internal Facing</i> | Customer Satisfaction<br><i>External Facing</i> |

Figure 2 A Typical Four-Echelon Supply Chain



**4.1 Supplier Service Metrics**  
Communication

- Strategic goals and metrics alignment
- Speed of response to queries and dispute resolution
- Demand projections and upcoming promotions
- Feasibility of meeting deadlines
- Communication of future expectations for price, quality and delivery lead time
- Communication of inventory levels
- Communication of plant shutdown for maintenance
- Communication of product failure information so quality can be improved

Financial

**4.2 Supplier Satisfaction Metrics**  
Process

- Speed of payment
- Cost savings initiatives
- Concern for supplier profit margins
- Supplier development help
- Number or frequency of rush orders or order changes
- Number or frequency of delivery disputes
- Return policy, returns history, disposition speed, return speed
- Inclusion and cooperation in the new product development process

|          |   |  |
|----------|---|--|
| Supplier | Supplier Satisfaction<br><i>External Facing</i> | Customer Service<br><i>Internal Facing</i> |
|----------|---|--|

**IV. Customer Performance Framework**

Due to the sparseness of research on supplier satisfaction we were unable to identify any scorecards or frameworks for customer performance. In order to identify customer performance measures the first author initiated discussions on the topic with two graduate classes. A Current Topics in Operations Management class in the summer of 2008 and a summer 2009 Supply Chain Management class. Students in both classes were primarily working in industry, with a significant number of the Current Topics students working in manufacturing operations. In addition, we investigated the research on supplier scorecards, supplier development, and supply chain collaboration to identify additional measures.

Figure 2 shows a typical four echelon supply chain where the two-way arrows indicate the movement of materials, services, and information between the entities. Our focus of analysis is on the link between the parts supplier and the manufacturer. We separate our lists of customer performance metric into the categories of supplier service and supplier satisfaction. Within these two main categories we group the measures into the subcategories communication, financial and process. We note that some performance measures, such as speed of payment, are common to both supplier service and supplier satisfaction. However, speed of payment will clearly be more important to the supplier than to the customer.

Communication

- Clear direction of the customer's needs, goals and strategies
- Strategic goals and metrics alignment
- Willingness to resolve disputes and speed of dispute resolution
- Speed of response to queries
- Willingness to renegotiate the contract due to unforeseen circumstances
- Demand projections and upcoming promotions
- Communication of future expectations for price, quality and delivery lead time
- Communication of inventory levels
- Communication of plant shutdown for maintenance
- How many visits to the supplier, unannounced visits, purpose of visits
- Communication of product failure information so quality can be improved

Financial

- Speed of payment (normal deliveries, engineering services,
- Level of pressure to reduce prices
- Willingness to pay for value-added services
- Willingness to pay for expedited delivery services
- Cost savings initiatives and willingness to share savings
- Purchase volume that allows you economies of scale
- Customer's growth rates (sales volume, market share, new market penetration)
- Concern for supplier profit margins

Process

- Supplier development help
- Willingness to solve mutual operational problems
- Process improvement help availability
- Level of pressure to reduce lead time and increase quality
- Feasibility of meeting deadlines
- Number or frequency of rush orders or order changes
- Number or frequency of delivery disputes
- Return policy, returns history, disposition speed, return speed
- Inclusion and cooperation in the new product development process
- Environmental practices (to avoid the negative consequences of being affiliated with an abuser of the environmental)
- Lean practices of the customers (if they want you to be lean, they also need to be lean)

## V. Hierarchy and Development Stages of Performance Collaboration

Bowersox et al. [3] extend the concept of customer service to a new level called customer success, which shifts the focus from the expectations of customer satisfaction to meeting the customer's real requirements. They note that from the supplier's perspective, customer service focuses on internal standards in order to meet basic service performance levels, while customer satisfaction is based on meeting the customer's service expectations and is external to the supplier. Customer success seeks to enhance the value the supplier can add to their customer's customers. The role of the supplier expands to helping their customers be more successful in meeting the expectations and requirements of downstream partners in the supply chain. Another way for a supplier to look at customer success is 'My customer's problem with their customer is my problem'. For a supplier to achieve customer success, they need to have a full understanding of not only their customer, but the other entities in the supply chain as well.

Success can be looked at from both the customer's and the supplier's points of view. Customer success means providing value-added processes and services such that you 1) make your customer more successful (profits, competitive advantage, market share - whatever their strategic objectives are) and or 2) you make your customer's customers more successful. Similarly, supplier success can be looked at in two ways. Providing value-added processes and services such that you 1) make your supplier more successful (profits, competitive advantage, market share - whatever their strategic objectives are) or 2) you make your supplier's suppliers more successful. The more echelons in the supply chain that success impacts, the greater the competitive advantage of the supply chain.

Figure 3 presents a hypothetical hierarchy for service and satisfaction performance measures in the supply chain and the 3 stages of their development. We again focus our discussion on the link between the parts supplier and the manufacturer. In stage 1 the customer initiates the supply chain relationship by performing due diligence on a supplier. Here, the supplier provides the customer with relevant performance measures that the customer will then benchmark against other suppliers. After the business relationship begins the supplier will measure their performance (customer service) to make sure they are meeting the expectations of the customer. The customer benchmarks these expectations against the performance of the supplier (customer satisfaction). In stage 2 the relationship between the customer and the supplier has grown stronger over time and a level of trust now exists between them. At stage 2 the supplier performs a reverse due diligence on their customer and conveys the importance of providing better service to the supplier so they can improve the linkages between them. We hypothesize that the development of supplier service and supplier satisfaction performance measures occurs simultaneously. Since both parties are going to be sharing more information between them, it is critical that they mutually agree on these

measures. It does neither party any good to measure performance independently or to measure the wrong things. By the time stage 3 is reached, both parties have a very clear understanding of the business relationship and they can now focus on success. We hypothesis that customer success will occur before supplier success for the following reasons: First, the customer is closer to the end customer in the supply chain and satisfying the end customer is of paramount importance to the long-term success of the supply chain. Second, the influence of the bullwhip effect becomes less significant the closer the entity is the final customer. Third, since the supplier sells to the customer, helping the customer sell more products results in more sales for the supplier. Once customer success has been achieved, the customer can help the supplier attain supplier success. We make one final hypothesis concerning Figure 3. That as the level of performance collaboration (y-axis) increases, the level of mutual benefit between the supply chain partners also increases.

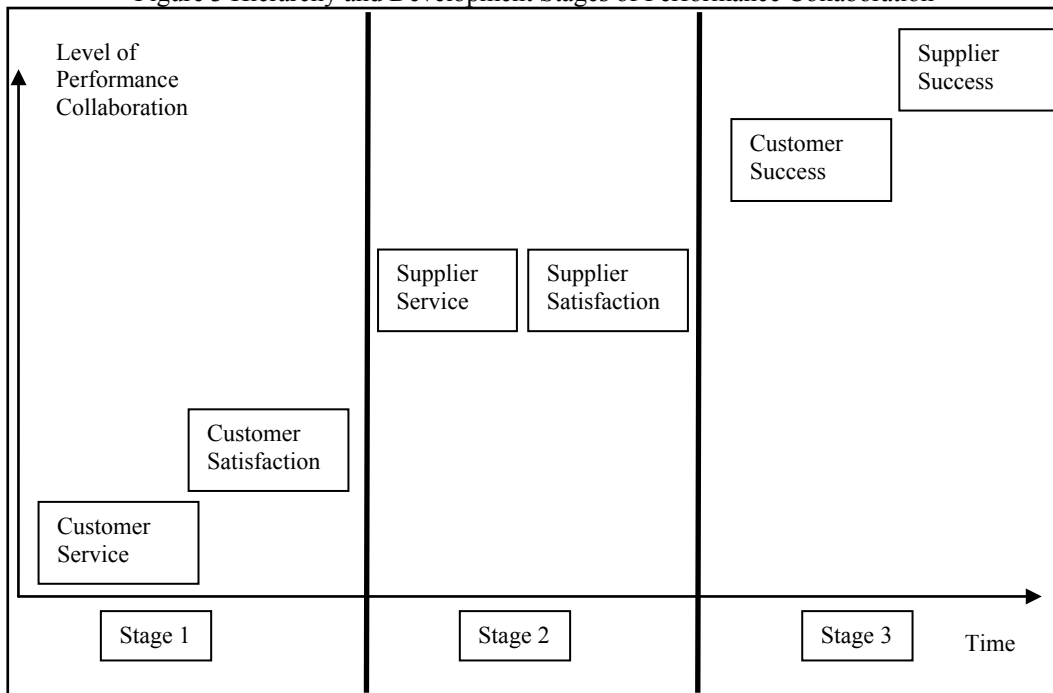
**VI. Conclusion**

This research has several limitations. First, it is a conceptual study and therefore is not supported by empirical findings.

Second, we do not rank the importance of the different metrics, we only provide a list of possible performance measures. Third, we have grouped the metrics in three rather broad categories while other categories can be developed such as operational, tactical and strategic importance. Future research can resolve these limitations through an empirical study of managers to identify which metrics are relevant to their business relationships and what the importance level is of these metrics. Additional metrics could also be identified through discussions field research and surveys. And, the hierarchy and stage model presented in Figure 3 can also be tested.

This research has important implications for practitioners. Customers can use the listed performance metrics to develop a supplier service index, while suppliers can develop a supplier satisfaction index. Both indices might be developed simultaneously by a customer and their key suppliers through a round table discussion. All parties must bear in mind that the indices should be mutually agreed upon and that some variation might be necessary to meet the needs of diverse suppliers. Finally, we suggest that customers and suppliers implement measures of customer performance with strategic partners in order to better create a true WIN-WIN in the supply chain.

Figure 3 Hierarchy and Development Stages of Performance Collaboration



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