



TenStep Supplemental Paper

15 November 2003

Quality in a Supply Chain

Manufacturing companies today are competing in a global and highly competitive market that is increasingly customer-driven. Challenges that they face include improving quality, reducing lead times, eliminating lead times and reducing time-to-market. In order to gain a strategic advantage, companies are using tools like Total Quality Management (TQM) and developing close relationships with suppliers. They are also focusing on developing good supply chain relationships to keep up with the speed of customers' decision-making.

A supply chain is a network of facilities and distribution options that performs the functions of procuring materials, transforming them into intermediate and finished products, and distributing the finished products to customers. Supply chains exist in both manufacturing and service organizations, although the complexity of the chain may vary greatly across industries and firms. The supply chain of a manufacturing enterprise generally comprises a large network of suppliers, factories, warehouses, distribution centers and retailers through which raw materials are acquired, transformed and delivered to customers.

Recent developments in the supply chain reveal that open communication, sharing of trade secrets and commitment to long-term supplier contracts have improved the quality of products and services, reduced inventory levels and cut component costs. Supply chain partnerships have led to improvements in the overall quality of the final product, but what about the quality within a supply chain? Since quality is often a subjective goal, there could be different standards at different levels within the supply chain.

Often, it is the final customer who defines the quality requirements of the final product. The suppliers in the supply chain may not understand the need for certain quality specifications in the product. These sub-suppliers comply with the specifications as requirements for sale to the supplier. Thus, not many efforts are made to continuously improve quality, and the quality specifications are seldom surpassed. It has been observed that sub-suppliers are conditioned to accept the quality requirements specified by higher-level suppliers. While some suppliers understand how the quality of their component affects the entire final product, others do not.

Partner Interactions

Complex and implicit relationships exist between the various quality issues in a connected supply chain. The customer must establish the quality levels that are required. The suppliers and sub-suppliers further down in the supply chain must measure and monitor quality, and they must understand how the level of quality for their products impacts the level of quality of the final product. This requires communicating the quality requirements between suppliers and various sub-suppliers, and providing quality feedback up and down the supply chain.