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China's Competition for Capacity

Current realities of upstream supplier capacity in China influence downstream operations and total cost models.

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By

China's manufacturing sector, over the past 15 years, has been fueled by competition. Increasing local and foreign demand has proliferated opportunities for profit creation. More recently, cost and quality have influenced inter-industry rivalry. Where there was once a buyer's market, today many suppliers have gained the position of power. These factors, along with increasing industry consolidation, have greatly influenced upstream production capacity.

Capacity is a dynamic component of short-term China supply chain development. Undercapacity can create throughput bottlenecks, which lengthen lead times further downstream. Overcapacity can create pricing wars leading to inferior material substitutes. With today's realities forcing internal cost analysis, companies must concern themselves with securing capacity to actively decrease indirect costs.

Buyer versus Supplier Market

To assess the dynamics of an industry supply chain, buyer and supplier characteristics should be considered. This includes supplier and buyer knowledge and production capacity. In 1990, for example, few suppliers in China knew the market price of products in the US. Suppliers based their pricing on cost alone. At this time, the knowledge and price gaps were large. The China sourcing gold rush began.

Today, the environment has changed almost overnight. With the expansion of information through the internet, finished product pricing is readily available. Few procurement directors or supplier managers outside China however follow input material market pricing in China. The power gained through knowledge has transferred, as has the percentage of supply chain profit.

Production capacity has faced a similar shift. Even as late as 1995, few companies and industries outside of labor intensive ones were supplying large customers directly from China. Turning to 2009, China is now at the center of global manufacturing. With local and export demand growth, production capacity requirements have increased exponentially. As a result, supplier power has again continued to rise.

Competitive Dynamics with Undercapacity

In specific industries, such as hand painted ceramics or air field lighting systems, a noticeable

production capacity gap exists. These industries are confronted with a difficult dilemma, undercapacity of Chinese production with a requirement for "China pricing." In a few cases, decreasing profit margins have driven once highly competitive industries to consolidate. In others, manufacturers are exiting due to poor performance. These influences are becoming systematic constraints in upstream operations, leading to demand fulfillment and lead time planning headaches. The question is then, how to reduce the costs and risk associated with upstream production capacity bottlenecks?

The theory of constraints (TOC) drum-buffer-rope model sheds some light. As we learn, it is essential to protect the bottleneck by ensuring buffer inventory is maintained immediately before the constraint. Following the constraint, it is important to leave adequate space or lead time. With manufacturing operations in China, inventory and production planning responsibility is often left solely to suppliers. As a result, inventory placement is inefficiently managed often requiring expedited delivery. Total cost models including these associated indirect costs often remain unaddressed. This would include later stage production downtime and delays.

One potential solution is the purchasing capacity model. Purchasing capacity instead of product ensures production capacity is available when required. Another potential solution is as a customer, securing raw material. This strategy can serve to mitigate price fluctuation and quality variability. These examples of coordinated planning help buffer the constraint, here production capacity, to ensure the utilization rate remains high.

One company that has effectively reduced upstream capacity risks is IKEA. In 2005, IKEA established a global supply chain management division. Traditional responsibilities transitioned, where technicians became instructors to suppliers and procurement managers were accountable for logistics and in-transit inventory. From 2000 to 2005, average operational costs reduced 46% while sales grew by 345%. Instead of increasing pressure on suppliers due to capacity bottlenecks, IKEA sought ways to improve supplier operations by increasing throughput and supply chain profitability.

Competitive Dynamics with Overcapacity

In contrast, overcapacity is common for many industries in China. Overcapacity is primarily created by low barriers to entry, highly fragmented markets and easily transferred technology. Large volume production with low product differentiation also plays an important role. Examples would be input materials such as paint, bolts and MDF distribution.

With overcapacity, the cost-flexibility balance becomes critical. Here, inventory placement and lead time scheduling will directly affect costs, but differently. The supply chain architecture for industries with overcapacity has a higher number of variables. Multiple material flow choices offset inherent risks with inventory positioning and supplier order scheduling. Commonly supply chain models that do not account for such flexibility lack a comprehensive view of total cost reduction strategies. Overcapacity also allows for greater inventory placement upstream through work-in-process inventory.

This reality is exemplified in numerous industries in China. Take for example, the automotive industry. Overcapacity has resulted from increased foreign demand, and the expansion of local consumer automotive purchasing, 21.84% in 2007. More recently however, this growth has become a root cause of excess supply chain costs. These systemic influences reach a global scale due to

China sourcing for automotive components. With the current downturn in global demand, numerous suppliers are afflicted with excess inventory and hence assembly lines in China remain idle.

As the world continues to face the economic downturn, upstream capacity and cost considerations will remain an important factor. The key to analyzing upstream capacity is derived from current state mapping of the industry supply chain design. As many companies are realizing, without an involved perspective of China upstream operations, it is increasingly difficult to manage many cost components such as inventory holding, throughput, and as a result, service level. As we see time and again, when you buy a product, you buy the supply chain. The effects of early inefficiencies often manifest themselves throughout the entire supply chain model.

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