IDEAS

MANAGING PROCUREMENT

SUPPLY PORTFOLIOS CAN MINIMIZE RISK

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Striking a balance between supply and demand lies at the heart of procurement management. By working with both short- and long-term suppliers, risks can be kept to a minimum.

PROCUREMENT • RISK MANAGEMENT • SUPPLY CHAIN

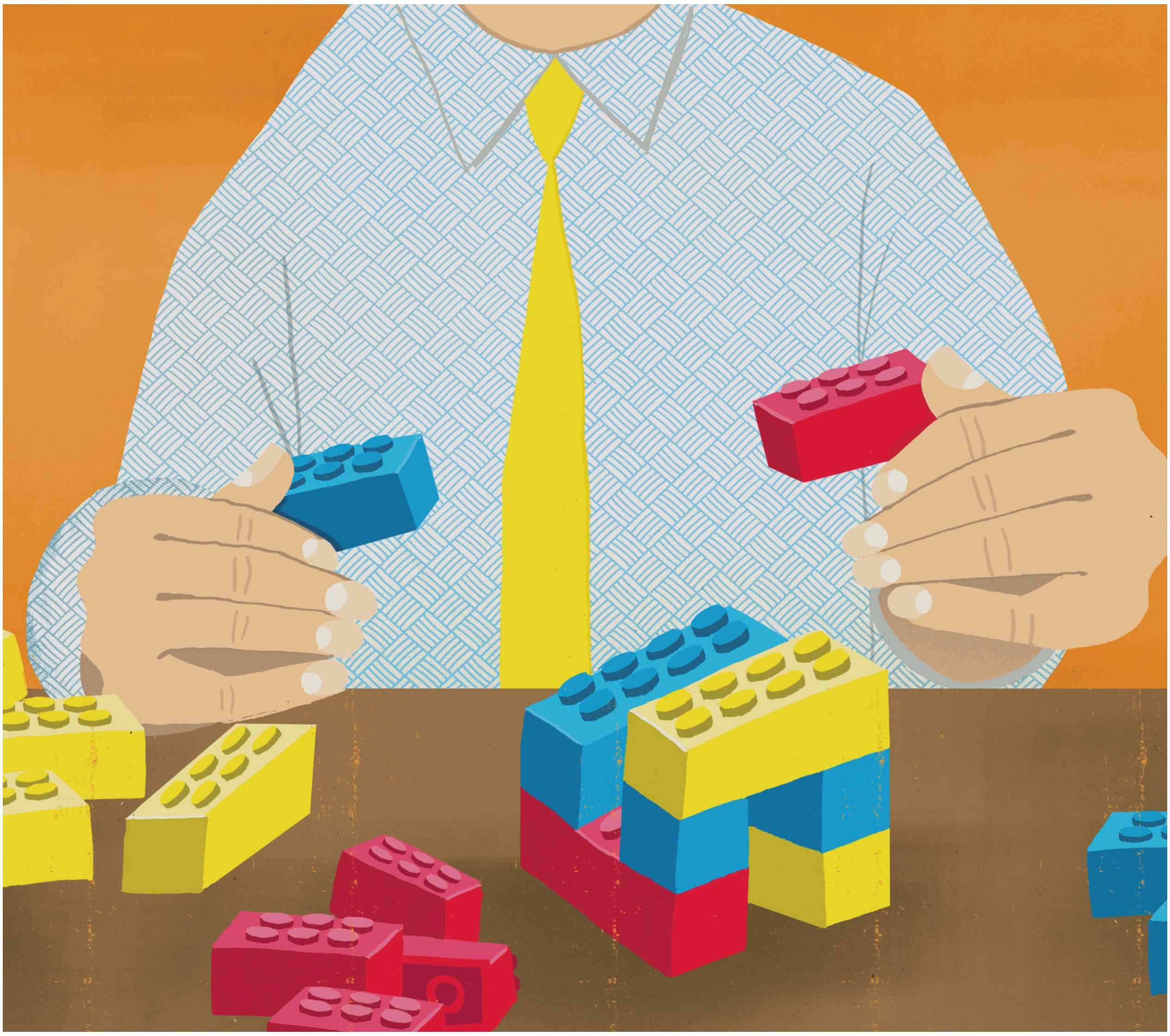
A key challenge in supply chain management is to control demand risk, through supply decisions that avoid overproduction and shortages. Matching supply and demand is difficult since supply decisions usually require a long time to be implemented and realized demand will always deviate from initial forecasts. This balance is especially hard to manage when firms plan the production of new products, for which demand uncertainty tends to be very high. In some industries, such as electronics or fashion apparel, this is the norm, as products have short life cycles. In such uncertain environments, procurement managers who decide on the quantities to be supplied are critical for a firm's long-term survival.

Since the quality of demand forecasts improves with time, any opportunity to delay ordering decisions is valuable. Unfortunately, order postponement usually costs more. Thus, a buyer can typically achieve either lower costs but with a higher demand risk, by working with a supplier that requires advance commitment; or it can reduce the chances of supply-demand mismatch, at a higher cost, by working with a supplier that allows last-minute ordering.

However, by working with both types of suppliers at once, the buyer can obtain the best of both worlds. It can sign a contract with the supplier that offers the lowest total cost for a portion of demand that is very likely to materialize. As the buyer's exposure is limited, it is ready to commit long in advance for such a contract and can delay the ordering of the remaining units until more accurate demand forecasts are obtained. The postponement of this decision can be implemented either by working with a short lead-time supplier, or by arranging a flexible contract that allows setting the final ordering quantity after demand is realized.

PROCUREMENT RISK MANAGEMENT

A few industries have adopted such purchasing practices. In electronics, where demand is quite volatile, Hewlett-Packard has developed a Procurement Risk Management (PRM) program to build supply portfolios. HP has applied PRM to direct components such as memory, hard disk drives, plastics or even custom integrated circuits, for a total spend of $7 billion in 2006. Through the PRM group, HP builds a portfolio of supply contracts from its suppliers. The portfolio usually contains a fixed quantity contract that just covers



the demand in the most pessimistic scenario, as well as a flexible quantity contract that allows HP to decide on the appropriate supply volume after observing realized demand. PRM not only allows for the control of demand risks, but can also manage material cost risks.

In apparel, the German retailer Adidas on some occasions uses two suppliers for a particular product: one in East Asia and another in Germany. A large order is placed with the Asian supplier. If demand is higher than expected, and no additional shipments are planned, Adidas places a rush order with the local supplier, which is more expensive but allows the retailer to avoid stocking out.

More examples can be found in fashion retailing. In Spain, Friday's Project specializes in the design and sales of fashion products. Production is subcontracted to the Far East and Europe. When a new design is finalized, the usual procedure is to place a base order at an Asian supplier, for less than the expected demand. Later on, if the item sells well, the company places an additional local order to ensure sufficient supply. This approach allows the firm to significantly reduce demand risk in this very volatile industry.

CHALLENGES

The supply portfolio strategy provides better reactivity to demand variability (through local quick-response supply) at a low cost (since most of the volume is sourced from a low-cost country). While it can greatly simplify the cost-risk dilemma for procurement managers, it also requires significant changes on the part of both buyers and suppliers. Buyers have to continuously update their demand forecasts to identify when it is necessary to place additional orders, or exercise existing contracts. On the other hand, suppliers need to be prepared to react quickly with agile production and delivery processes. Specifically, difficulties may arise at different levels:

- At an operational day-to-day level, buyers may have to coordinate deliveries from multiple suppliers.

LOW-COST SUPPLIERS WILL NEED TO BE MORE FLEXIBLE TO INCREASE SALES AND FLEXIBLE SUPPLIERS WILL REDUCE COSTS IN ORDER TO COMPETE.

- At a tactical level, buyers must know how to install supply capacity at different suppliers. This requires evaluating the trade-offs between cost and the subsequent flexibility derived from the capacity.
- At a strategic level, buyers need to be aware of the repercussions of portfolio purchasing on suppliers and industry dynamics. In the long term, suppliers may change their pricing policies to reflect the value they create for the buyer. Understanding such dynamics is a necessary step before a buyer decides to use portfolios.

REFLECTIONS FOR PROCUREMENT EXECUTIVES

The complexity introduced by a supply portfolio can be significant, but conceptually a portfolio of contracts is not much different from a traditional single-sourcing relationship.

First, the operational decisions to be taken throughout the life of the contracts amount to deciding when and how much to order from each supplier and contract. The existing research in the field indicates that orders can be managed in a relatively simple way. Each supplier will have a target inventory level (which can be obtained with some technical formulas) and will be called in whenever the current inventory position is below the target. Ideally, the size of the order should be equal to the difference between target and inventory position, and could perhaps be limited by a maximum amount specified in the contract. One practical question immediately arises: what suppliers should be used first? It turns out that the suppliers with lower execution costs should be first. These are the ones that require most commitment upfront, and which have the highest target level too. Overall, order management can be implemented according to common-sense inventory principles.

Tactical capacity decisions also need to be optimized. In other words, the buyer will need to decide how much capacity to reserve for each type of contract available. This step requires much work during the initial production planning phase, and may have to be revised as demand changes and/or new supply opportunities appear. The main trade-off that appears here is to decide how to balance low-cost, high-commitment contracts with higher-cost, lower-commitment ones. Essentially, the right decision will depend on the marginal cost created by an additional unit of a contract and the associated marginal expected contribution margin. In addition, the buyer will be able to monitor the risk implied by a capacity decision, measured by the "supply-at-risk," which has already been paid for, but may not be sold. There are tools available to describe the procurement efficient frontier, which is the curve that depicts the highest margin as a function of the level of risk that the buyer is willing to accept. A similar curve exists in finance for evaluating the risk-reward trade-offs associated with investments.

Finally, over the long term, using supply portfolios will have consequences for the way suppliers compete in the marketplace. This means that the terms received by the buyer may slowly change as suppliers readjust their contract offerings. Indeed, since the buyer will now effectively install capacity and place orders depending on the cost-flexibility terms offered by the suppliers, these will take note of it. Specifically, low-cost suppliers will realize that they need to become more flexible to increase their sales, while flexible suppliers will prefer to reduce prices to better compete. These changes are very relevant for buyers, who may want to anticipate such competitive moves on the supply side. In particular, they may want to incorporate one very flexible supplier to force all other suppliers to offer more flexible terms. Similarly, a new low-cost supplier with no flexibility will trigger more emphasis on price for the rest of the supply base.