

RESHORING GLOBAL MANUFACTURING: MYTHS AND REALITIES

By next year, China's cost advantage over manufacturers in industrialized nations and competing low-cost destinations will evaporate.

Study Results Analysis

Complimentary Research

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EXECUTIVE SUMMARY

New Hackett research indicates that the manufacturing competitiveness of China compared to advanced economies and low-cost geographies is eroding. Stagnant or declining manufacturing wages in the West, rising transportation costs, concerns about intellectual property protection, and Chinese wage-rate inflation have brought traditional calculations about global manufacturing sourcing strategies to a tipping point, encouraging companies to reshore some manufacturing capacity while moving additional capacity from China to other low-cost geographies. Companies need to stay abreast of this trend and develop sophisticated analytical models to improve manufacturing sourcing decision-making processes.

In a departure from our usual focus on the impact of globalization on business services organizations (IT, finance, procurement and HR), in this research we turn our attention to the operations side of the business, specifically on manufacturing sourcing strategies. In these pages, we analyze the ways that companies are adapting their business strategies to changing global and regional market conditions.

Additionally, using hard data from our 2012 *Supply Chain Optimization* study, we were able to closely analyze the trend in “reshoring” of manufacturing capacity. Our findings debunk a myth about the future of manufacturing that has been much discussed in the press recently: that manufacturing capacity is returning in a big way to Western countries as a result of rising costs in China.

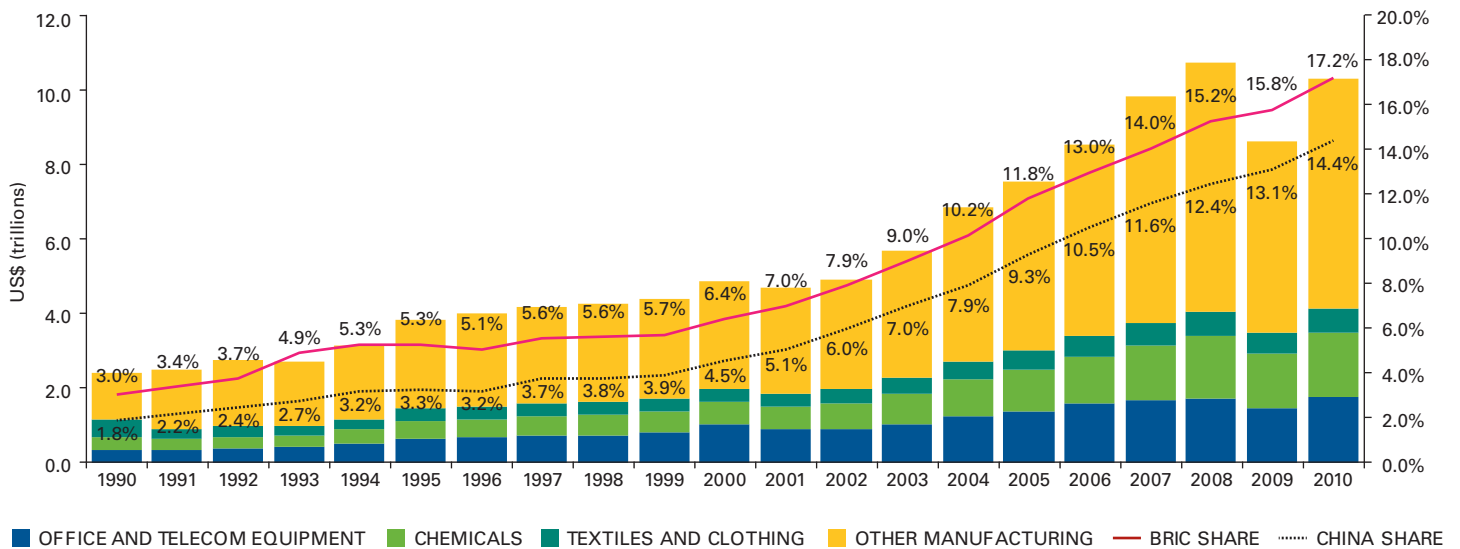
The reality is that the net amount of capacity coming back barely offsets the amount that continues to be sent offshore. Our study confirms that China's relative competitive position is indeed eroding rapidly, to the detriment of its overall economy. However, few of the low-skill Chinese manufacturing jobs will ever return to advanced economies; most will simply move to other low-cost countries. Finally, we offer recommendations on how companies should plot their manufacturing sourcing strategies in light of these and other study findings.

THE ECONOMIC IMPACT OF GLOBAL MANUFACTURING SOURCING

It has been several decades since globalization of manufacturing sourcing began with movement of low-value-added activities from developed economies to emerging economies. For many companies, the trend brought about a complete rethinking of the manufacturing footprint, including changes in suppliers and sourcing locations.

The transition to a global supply chain has been a hugely important engine of economic growth around the world. Between 1990 and 2010, the nominal value of global exports of manufactured goods more than quadrupled (**Fig. 1**). When adjusted for inflation, this equates to a near tripling of value and a compound annual growth rate of 5.5%. To put this into perspective, during the same period, the combined GDP of North America, Europe, Japan and the BRIC countries grew at a compounded rate of around 3.0%, resulting in real GDP growth of about 80%. China has been the biggest beneficiary of these developments. Between 1990 and 2010, its share in global manufacturing exports grew from 1.8% to 14.4%.

FIG. 1 Global manufacturing exports and China/BRIC share, 1990-2010



Source: World Trade Organization

“Total landed cost” defined

Total landed cost is the set of end-to-end supply chain costs to transform raw materials and components into a finished good ready for sale.

Key components include:

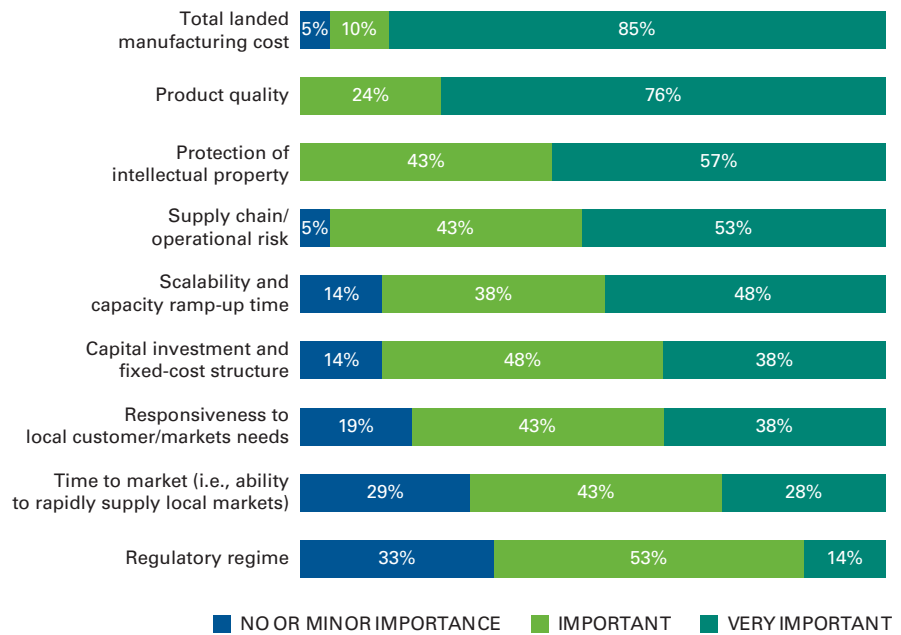
- Raw material and component costs
- Manufacturing costs (fixed and variable)
- Transportation and logistics
- Inventory carrying cost
- Taxes and duties

MANUFACTURING SOURCING DECISION DRIVERS

The macro trend discussed above is the outcome of the business strategies and manufacturing and sourcing decisions of individual companies. These are guided by specific criteria and an evaluation of market and other conditions in different geographies against these criteria.

Our study confirmed that the most important decision driver in the development of a manufacturing sourcing strategy is *total landed cost* (Fig. 2). Product quality, protection of intellectual property rights and supply chain risk trail in importance. Regulatory regime ranks as the least important criterion.

FIG. 2 Level of importance of manufacturing sourcing strategy decision driver



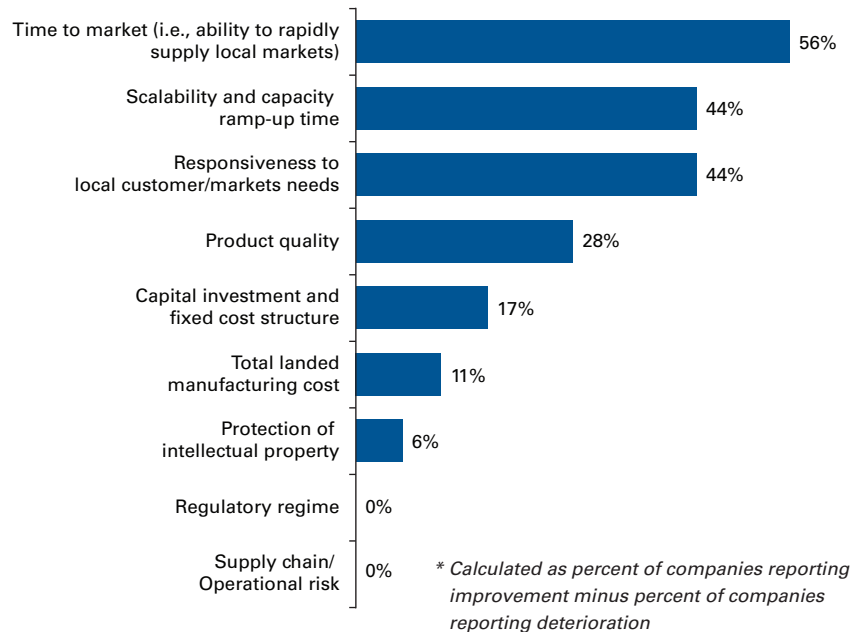
Source: Supply Chain Optimization Study, The Hackett Group, 2012

The relative importance of individual criteria varies by industry. Factors like scalability, time to market and capacity ramp-up speed tend to be more important in highly dynamic industries with short product life cycles and high levels of demand variability. Consumer electronics is an example of this type of industry. Conversely, less dynamic but highly price-sensitive industries such as furniture manufacturing ascribe more importance to total landed cost. The success of Chinese manufacturing can be explained largely by the fact that for many industries the country offers the highest value proposition when measured against the various criteria illustrated above. Other geographies may be more attractive in one or two criteria for manufacturers that especially value those specific factors. However, with the possible exception of protection of intellectual property, China historically has offered the most balance among the range of key decision drivers.

Changes in manufacturing sourcing strategy can be brought about by changes in the performance of low-cost manufacturing destinations against these decision drivers. At present, the overall picture reveals a gradual maturing of low-cost manufacturing destinations (Fig. 3). The three most-improved areas are all related: time to market, responsiveness and scalability. Quality has improved for most manufacturers.

However, in the first, third and fourth-highest-ranked criteria in terms of importance (as shown in Fig. 2) – cost, intellectual property rights and supply chain risk – the number of companies reporting deterioration is about equal to those reporting improvement. This is an indication that improvements are becoming increasingly difficult to achieve, and in turn, more companies are starting to evaluate alternative sourcing options for manufacturing.

FIG. 3 Net improvement experienced in manufacturing operations in low-cost countries over the last 5 years*



Source: Supply Chain Optimization Study, The Hackett Group, 2012

¹ If wage-rate inflation is offset by a commensurate improvement in labor productivity, the narrowing wage gap does not translate into narrowing of the total landed cost gap. Since both gaps are narrowing simultaneously, in China this condition does not hold.

Apple's iPad® assembly sourcing strategy

The Chinese labor-cost component of an entry-level iPad retailing for \$500 is estimated at \$10, or 2% of revenue, while the profit margin is estimated at \$150, or 30% of revenue.

If Apple were to move production to the USA, and if one assumes that assembly costs would triple (to \$30), it is conceivable that Apple could convince customers to pay for a large portion of the price increase based on the appeal of a “made in the USA” product. The impact on margins of any cost that could not be passed on would be modest.

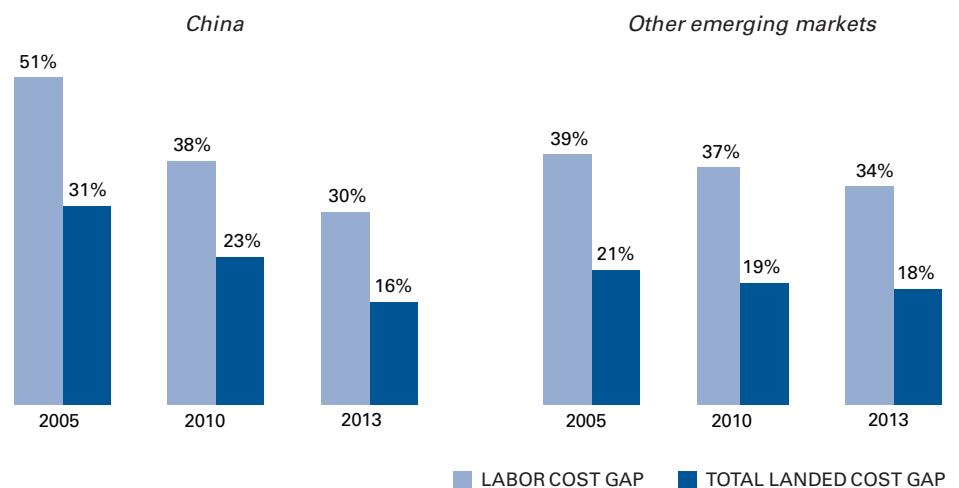
Furthermore, in light of recent negative publicity about Chinese labor conditions, and considering the high unemployment rate in the U.S., such a move could substantially boost Apple's corporate image.

However, the U.S. lacks the sheer labor capacity that would be required in order to ramp up production of iPads at the speed needed to maintain the company's edge in the hyper-competitive tablet and mobile device market. Also, U.S. regulations on working conditions, as well as cultural factors, would make it impossible for domestic manufacturing facilities to achieve the productivity levels of Chinese facilities.

Thus one may assume that Apple's manufacturing sourcing strategy is primarily motivated by scalability and supply chain risk, and only secondarily by total landed cost.

A more detailed inspection of trends in total landed cost (**Fig. 4**) and its two main underlying drivers, productivity and labor cost, reveals that the total landed cost gap with China is shrinking rapidly, primarily due to wage-rate inflation¹. Other contributors are higher fuel prices and the resulting rise in transportation costs. In a testament to the extremely rapid maturing of Chinese manufacturing industries, companies in our study project that by 2013, the productivity gap with China will have disappeared. However, by then, total landed cost will have shrunk to 16%. During the same period, the total landed cost differential in other low-cost geographies is expected to remain relatively stable, at around 20%, due to improved productivity and more-moderate increases in labor cost. In conclusion, China's cost advantage is eroding, both relative to domestic manufacturers in advanced economies, and relative to competing low cost destinations.

FIG. 4 Manufacturing cost gaps



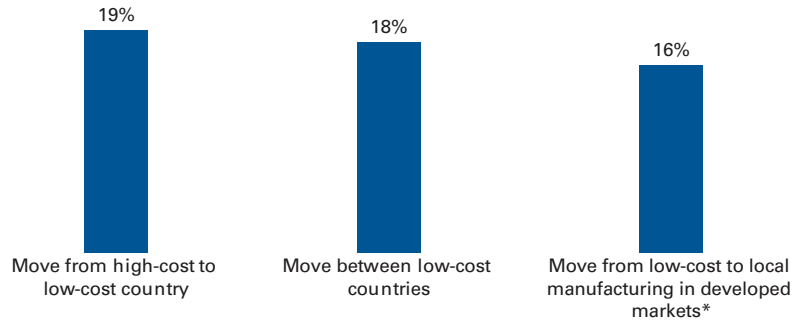
Source: Supply Chain Optimization Study, The Hackett Group, 2012

Projections vary widely depending on company and industry. In industries with a high labor-cost component in total landed cost, the financial advantages of off-shore manufacturing continue to be extremely compelling and sustainable. But in many others, companies must constantly reevaluate manufacturing sourcing decisions based on changes in regional market conditions. There are also some instances where, regardless of the cost gap, domestic manufacturing is simply not feasible due to a lack of capacity and scalability (see sidebar).

UNDERSTANDING THE DYNAMICS OF MANUFACTURING SOURCING STRATEGIES

An important factor explaining the dynamics of manufacturing sourcing strategies is the cost threshold for companies to move capacity in and out of geographies (Fig. 5). According to our research, companies begin to consider moving capacity out of high-cost industrialized economies when the cost gap approaches 20%. Of course, in practice, extensive financial modeling is required to build the business case, including factoring in the costs of transition cost and operational risk.

FIG. 5 Total landed cost gap threshold to trigger change in manufacturing sourcing strategy



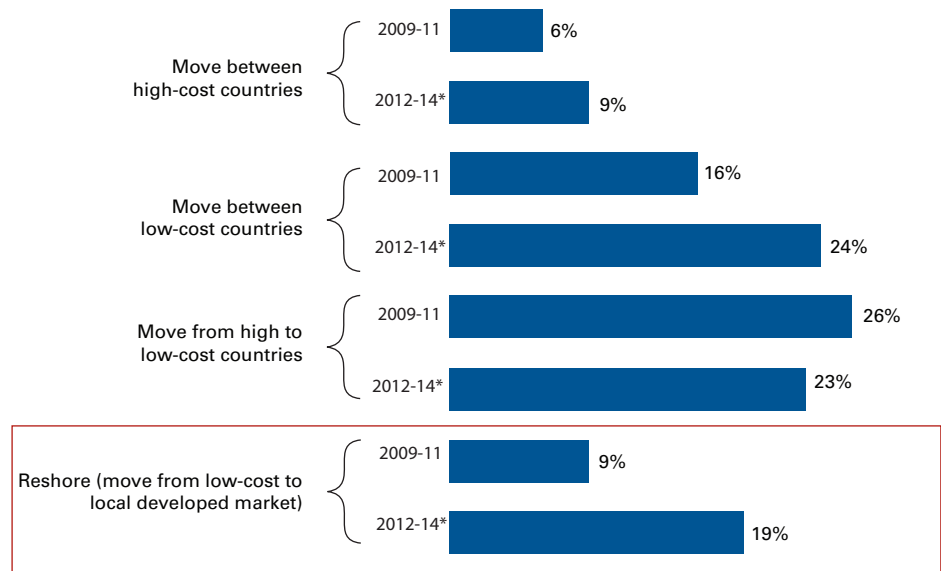
*The level at which the cost gap needs to narrow for companies to consider moving work out of low-cost countries and into local developed markets.

Source: Supply Chain Optimization Study, The Hackett Group, 2012

A second important parameter is the threshold at which it makes sense to move capacity from one low-cost geography to another. Not surprisingly, the decision point is about the same. This implies that when the rate of inflation (usually driven by wage rates) in a given geography begins to exceed that of a competing geography, the situation will trigger substantial movement of manufacturing capacity from one to the other. A third threshold metric relates to the much-discussed phenomenon of “reshoring.” According to study participants, when the total landed cost gap narrows to 16%, moving capacity out of low-cost geographies and back into domestic markets becomes a viable option. In Fig. 4, we saw that the total landed cost gap with China is expected to reach 16% by 2013. (It is important to recall that total landed cost is an important consideration for many manufacturers, but scalability and ramp-up time factors may trump this factor for others.)

There are a number of conclusions that can be drawn based on our study data. First, reshoring will accelerate and reach an inflection point over the next few years, growing from impacting 9% of manufacturing capacity (2009-12) to a projected 19% (2012-14) (Fig. 6). At 24%, movement between low-cost countries will impact the highest percentage of capacity, closely followed by the ongoing movement of capacity away from high-cost countries into low-cost geographies.

FIG. 6 Percent of manufacturing capacity impacted by change in sourcing strategy



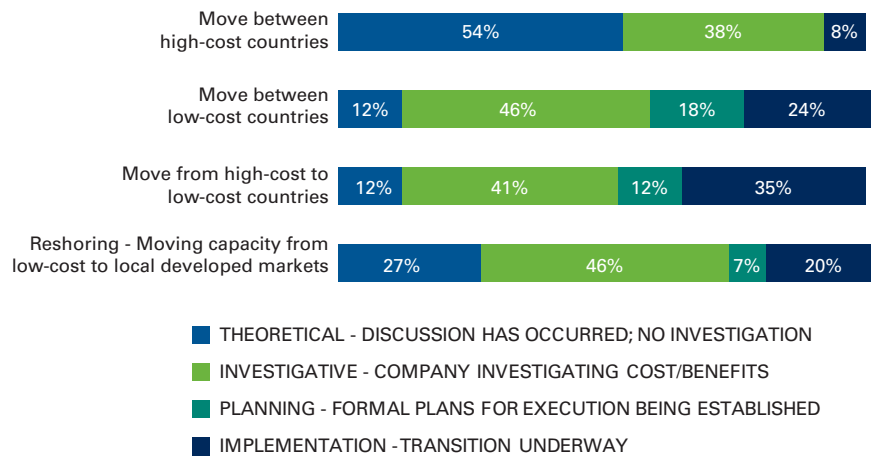
* projected

Source: Supply Chain Optimization Study, The Hackett Group, 2012

However, the analysis also shows that the continued outflow of capacity from advanced economies will more than offset any capacity being reshored. This finding is further confirmed by data about the life-cycle stage of the different types of manufacturing sourcing strategies discussed. Thirty-five percent of manufacturers studied are actively involved in moving capacity from high-cost to low-cost countries (Fig. 7), far more than the 20% actively undergoing reshoring initiatives.

In fact, there is no dominant movement of capacity in any single direction. Rather, companies are continuously optimizing their manufacturing footprint in response to changing conditions.

FIG. 7 Life-cycle stage of current manufacturing sourcing strategies

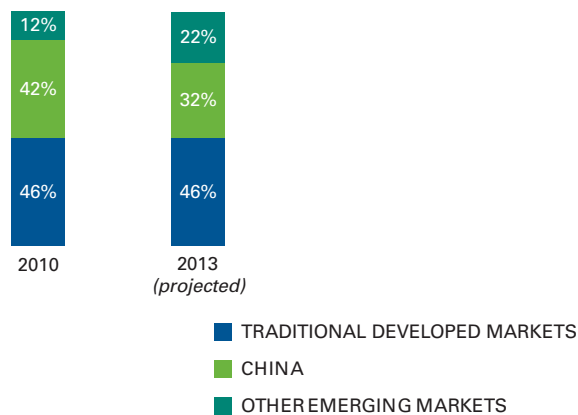


Source: Supply Chain Optimization Study, The Hackett Group, 2012

China is affected the most, given a net decline in the total capacity share both through reshoring-driven outflows and movement of capacity to other low-cost geographies (Fig. 8). While the data on which this finding is based is solely from companies participating in our study – a self-selected group that already has substantial manufacturing capacity in low-cost geographies – the projection of China’s declining share of global capacity remains statistically relevant.

As domestic demand rises in China and other fast-growing markets, additional manufacturing capacity will be needed. At present, China excels in low-skill manufacturing work, making products developed elsewhere and shipped out for Western consumption. To stay competitive and maintain growth in the face of its eroding cost competitiveness, China will need to modernize and spur innovation in its manufacturing industries.

FIG. 8 Estimated share of total manufacturing capacity by region, based on cost of goods sold



Source: Supply Chain Optimization Study, The Hackett Group, 2012

ACTION ITEMS

There are a number of things that executives can do to optimize their manufacturing sourcing strategy. These involve developing a clear picture of the company’s global supply and demand dynamics; gaining an understanding of total landed costs – both current-state and longer-term trends; and establishing a process for conducting ongoing manufacturing sourcing reviews supported by strategic, cost and performance triggers. Action items include:

1. **Develop a global manufacturing review process:** With so many factors affecting global manufacturing, we recommend that companies establish a systematic, forward-looking process to drive decision making (e.g., make-vs.-buy, core competencies). This should integrate the views of manufacturing, procurement, finance and business-unit leadership.

2. **Clarify the global demand picture:** Critical inputs to manufacturing strategy are demand by region and possible approaches for satisfying this demand. Create a model that considers demand forecast, differentiated product needs, supply-base capabilities and local competitive threats.
3. **Embrace supply chain analytics:** Interest in this area is growing, yet for a number of reasons, companies have difficulty establishing this capability. To allow greater focus, create a Center of Excellence for analytics and develop a capability that includes scenario modeling and financial analysis to support decision making.
4. **Build a strategy for talent management:** Being competitive requires a deliberate strategy for acquiring, developing and retaining manufacturing operations talent with needed skills. Ensure that ongoing investment in talent is prioritized as a critical element of the operations strategy.
5. **Establish a game plan to deal with risk:** Geopolitical, supply base, environmental and commodity risks are a given. Establish a proactive approach to anticipate risks, creating mitigation plans with clear triggers for implementation.
6. **Broaden the decision making approach beyond total landed cost:** Changes in supply/demand characteristics and risk profiles can impact profitability from a revenue perspective. Revise the decision-making methodology to include an evaluation of supply-chain responsiveness, opportunistic demand, and revenue at risk due to changing supply-assurance considerations.
7. **Identify the dominant factors and prioritize programs accordingly:** Determine the factors to which your organization is most sensitive, based on an assessment of impact to profitability, risk and responsiveness. Establish a long-term roadmap tailored to address the areas where the potential impact is greatest.

RELATED HACKETT RESEARCH

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ABOUT THE HACKETT GROUP

The Hackett Group (NASDAQ: HCKT), a global strategic advisory firm, is a leader in best practice advisory, benchmarking, and transformation consulting services including strategy and operations, working capital management, and globalization advice. Utilizing best practices and implementation insights from more than 4,000 benchmarking engagements, executives use The Hackett Group's empirically based approach to quickly define and implement initiatives to enable world-class performance. Through its REL group, The Hackett Group offers working capital solutions focused on delivering significant cash flow improvements. Through its Archstone Consulting group, The Hackett Group offers strategy and operations consulting services in the Consumer and Industrial Products, Pharmaceutical, Manufacturing and Financial Services industry sectors. Through its Hackett Technology Solutions group, The Hackett Group offers business application consulting services that help maximize returns on IT investments. The Hackett Group has worked with 2,700 major corporations and government agencies, including 97% of the Dow Jones Industrials, 80% of the Fortune 100, 80% of the DAX 30 and 49% of the FTSE 100.

Founded in 1991, The Hackett Group was acquired by Answerthink, which was renamed The Hackett Group in 2008. The company has offices in the United States, Europe and India and is publicly traded on the NASDAQ as HCKT.

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Mr. Dorr started his professional career of over 20 years as an IT consultant, and then moved on to a CIO position at a large manufacturing company. Next, he worked as a research analyst covering enterprise business applications and technology strategy. Leveraging the extensive experience he gained working with financial organizations and optimizing financial processes, he was named to his present role in early 2010.

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