KPMG

Global Manufacturing Outlook

Relationships, Risk and Reach

Global research commissioned by KPMG International from the Economist Intelligence Unit

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The Economist

Global Manufacturing Outlook is a KPMG International report that investigates how industrial manufacturers are adapting their business models and supply chain tactics to address the ever-changing global economic context. This report was produced in co-operation with The Economist Intelligence Unit, which also executed the online survey and conducted the interviews on behalf of KPMG.

We would like to thank all the executives who participated in the survey and interviews for their valuable time and insight.

Interviewees

(Listed alphabetically by organization name)

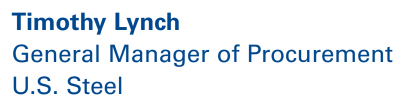
Bill Frame
President
Jacob Holz Company

Peter Connelly
Chief Procurement Officer
Leggett & Platt

Maarten de Vries
Global Head of Purchasing
Philips

Steve Churchhouse
Executive Vice-President of Supply Chain
Rolls-Royce

PK Ghose
Chief Financial Officer
Tata Chemicals



Timothy Lynch
General Manager of Procurement
U.S. Steel

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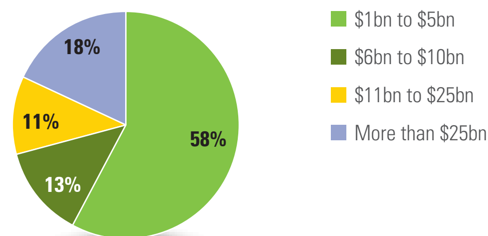
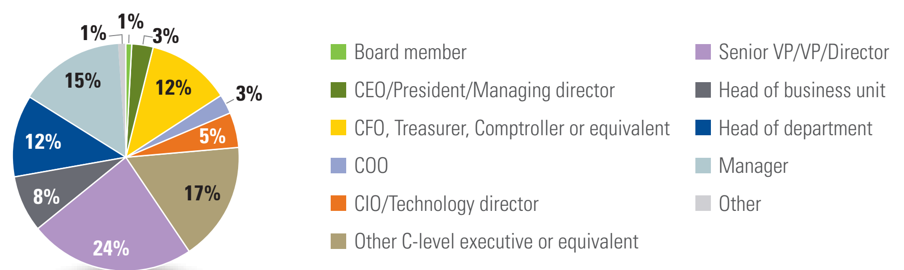
About the Survey

A total of 196 senior manufacturing executives participated in the survey, all of whom are responsible for, or significantly involved in, supply chain strategy. Respondents were drawn from the aerospace, metals, engineering and conglomerates sectors, and 40 percent were C-suite executives or above. Thirty-six percent were based in Western Europe, 32 percent in North America, and 23 percent in the Asia-Pacific region, with the remainder coming from across the rest of the world. All participants represent companies with more than US$1 billion in annual revenue; 42 percent work for firms with more than US$5 billion.

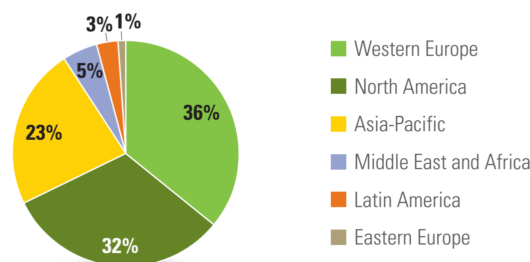
What are your organization's global annual revenues in US dollars?



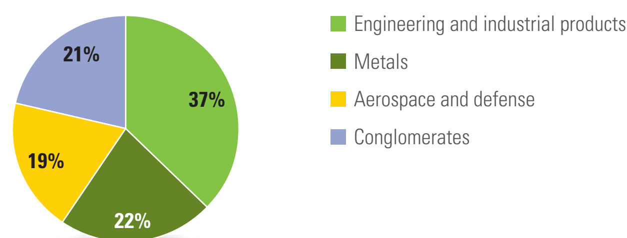
Which of the following best describes your job title?



In which region are you personally based?



What is your primary industry?



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Foreword

When we initiated this research paper, the world seemed to be returning to normal. The reality has been anything but, as the stock market recovered then fell, production improved to replenish inventories and then declined, and employment figures remained anemic. Globally, business attitudes vacillated between confidence and caution, jarred by surprises such as the European sovereign debt crisis, relief at better-than-expected consumer spending then disappointment over sagging consumer confidence. All of this showed us that the manufacturing environment has not returned to normal.

Our survey findings suggest that uncertainty is holding companies back from executing bold changes to their supply chain structures. Still, with uncertainty showing little sign of abating, organizations may be compelled to reassess their strategy and operations. Sustained instability in such things as currency, commodity and fuel prices marks a new era in which volatility is likely to remain a permanent feature of the operating landscape. In this environment, the advantage will go to those organizations best able to anticipate and respond to changing business conditions.

This has direct implications for supply chains, the central nervous system for Diversified Industrials (DI) companies. Traditionally supply chain decisions rested on routine considerations: who could make the best component for the best price. But as their role has evolved from the tactical to the strategic, supply chain design and layout has become far more complex. Leading strategies now involve detailed scenario modeling to determine where and what to source, the optimal number and size of distribution centers, and which suppliers will make the best long-term partnerships.

While early outsourcing programs were focused on the lower costs of production in emerging economies, today's location equation is far more layered. In an industry characterized by intense pricing pressures, determining the most favorable tax regimes, the most attractive labor markets, and the impact of currency volatility as well as the most stable geographies from a political and regulatory point of view, is central to forging competitive advantage.

Given the accelerating pace of innovation, companies across the sector will improve collaboration, trimming their supply base in some cases in order to deepen relationships across the board. Ownership and supplier models will also become more diverse. Some functions, once managed by a single company and its sourcing partner, may become inter-company and managed jointly, as a way to spread risk, share development costs, and accelerate time-to-market.

Geographies, like skill sets, have their own maturity curve. Across Europe, Asia and the Americas, we'll continue to see pockets of excellence emerge. Some areas may gain prominence as light manufacturing experts or logistics hubs, while others will serve as centers for innovation.

Manufacturers will also become more resourceful in how they manage risk. Some will reduce exposures in the supply chain by making products closer to point of sale, clustering plants and suppliers near key markets. Others, with diverse products across global markets, may choose to put management closer to the supply base, and engage more directly in developing and managing key partners.

For DI companies, the new normal may offer exceptional opportunities to those willing to create new supply chain models that appropriately balance agility, sensitivity to risk, quality and cost. While the financial crisis revealed key vulnerabilities in our interconnected global economy, it may also have provided a needed catalyst in helping organizations create more dynamic, resilient and responsive supply chains. As the survey results show, the sector is well-poised to leverage that opportunity for its continued growth and success.

Jeff Dobbs
KPMG's Global Head of
Diversified Industrials

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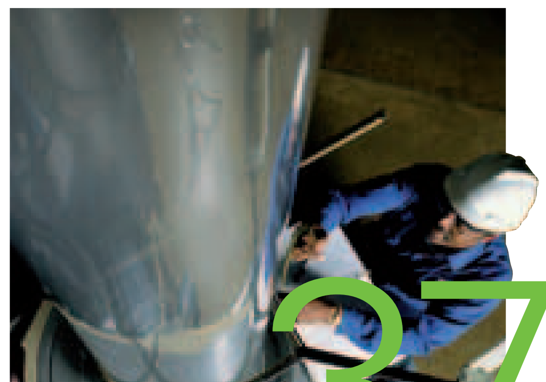

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Executive Summary

As a result of the downturn, manufacturers experienced a relatively short, very sharp shock, followed by a quick rebound in demand aided by substantial government spending worldwide. Despite cautious optimism for a lasting recovery, significant uncertainty about the future remains, especially as stimulus programs tail off. Recent leading indicators point to a slackening in demand – and perhaps worse. This study, produced in collaboration with the Economist Intelligence Unit, surveyed 196 senior executives worldwide to understand how the supply chains of industrial manufacturing firms are shifting as a result. The overall picture is not one of revolutionary change toward a commonly accepted, new set of best practices. Rather, many companies are experimenting with a range of approaches. Some of these may not stand the test of time. Given, however, the standing of the companies studied – all have annual revenues of over US$1billion – those innovations that prove their value are likely to shape the sector's supply chain strategies in the years to come. Among the survey's key findings are:

Strategic suppliers are increasingly becoming partners rather than purveyors of goods and services. Many companies are looking for fewer, longer-term supplier relationships, and more than half plan either to collaborate more closely with suppliers on – or give responsibility to them for – product innovation, product development, research and development (R&D), cost reduction, and supply chain agility. Interviewees suggest that building closer relationships was worth the price of helping suppliers financially during the downturn.

Management of supplier risk has become more hands-on as a result of the downturn, but by avoiding certain risks, companies may be losing out. The recession has also caused companies, as one interviewee puts it, "to sharpen our pencils" on supplier risk. In some areas, however, the tendency seems to be to avoid potential problems altogether, or diversify around them, rather than to understand the risk. This can mean companies lose out on opportunities, such as tapping into the research potential of China.

The geography of sourcing, a combination of the global and the local, is in flux as companies consider the appropriate link between customer and supply chain location. Low-cost country sourcing remains the priority for most supply chains, with China as the big beneficiary. While expected geographic shifts within supply chains are largely cost-driven, a significant minority of companies expect them to more closely reflect consumer markets in the future.

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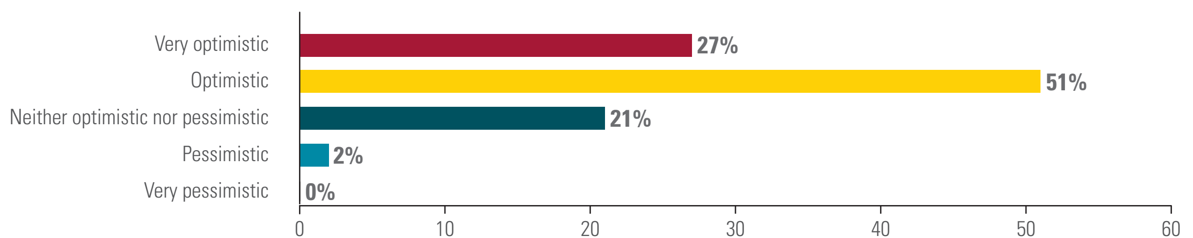
Introduction

The downturn was a sharp one for manufacturing: global industrial production dropped 9.2 percent in 2009 after rising just 0.1 percent in 2008, according to Economist Intelligence Unit data. A full recovery to 2007 levels is not expected until 2011, underscoring continued market uncertainty. These annual figures tell only part of the whole story, however, as rapid shifts occurred within each year. JP Morgan's Global Manufacturing Purchasing Managers Index (PMI), as well as most national PMIs, show a sharp drop in output beginning in mid 2008 as companies slashed inventory. The decline briefly touched bottom in January 2009, followed by a surprisingly rapid improvement. By the middle of last year, manufacturing output had even begun to increase.

The survey data reflects cautious hope: 78 percent of respondents are either optimistic or very optimistic about the next twelve to twenty-four months only 2 percent are pessimistic. According to the latest economic indicators, though, the outlook is far from clear. PMIs released around the world throughout this summer have suggested that growth is moderating, especially in Asia, which may mean either a blip on the road to recovery, or the beginning of a second dip to the current recession. In such an unpredictable environment, weakening of demand for manufactured goods will naturally make for sustained pressure on manufacturers' supply chains. This study looks at how industrial manufacturers are adjusting.

How optimistic are you about your company's business outlook for the next 12 to 24 months?



Source: KPMG International, 2010

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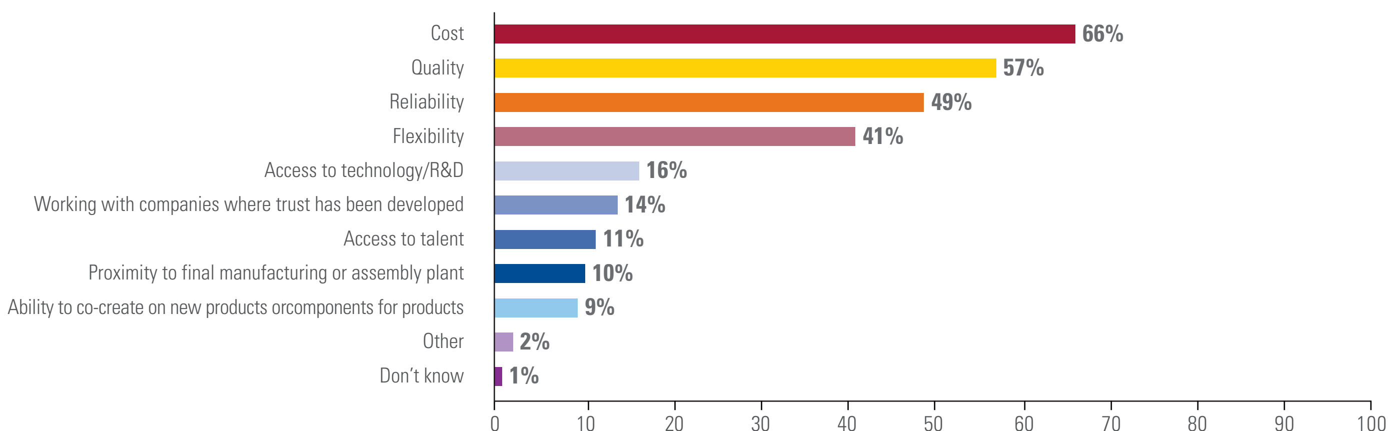
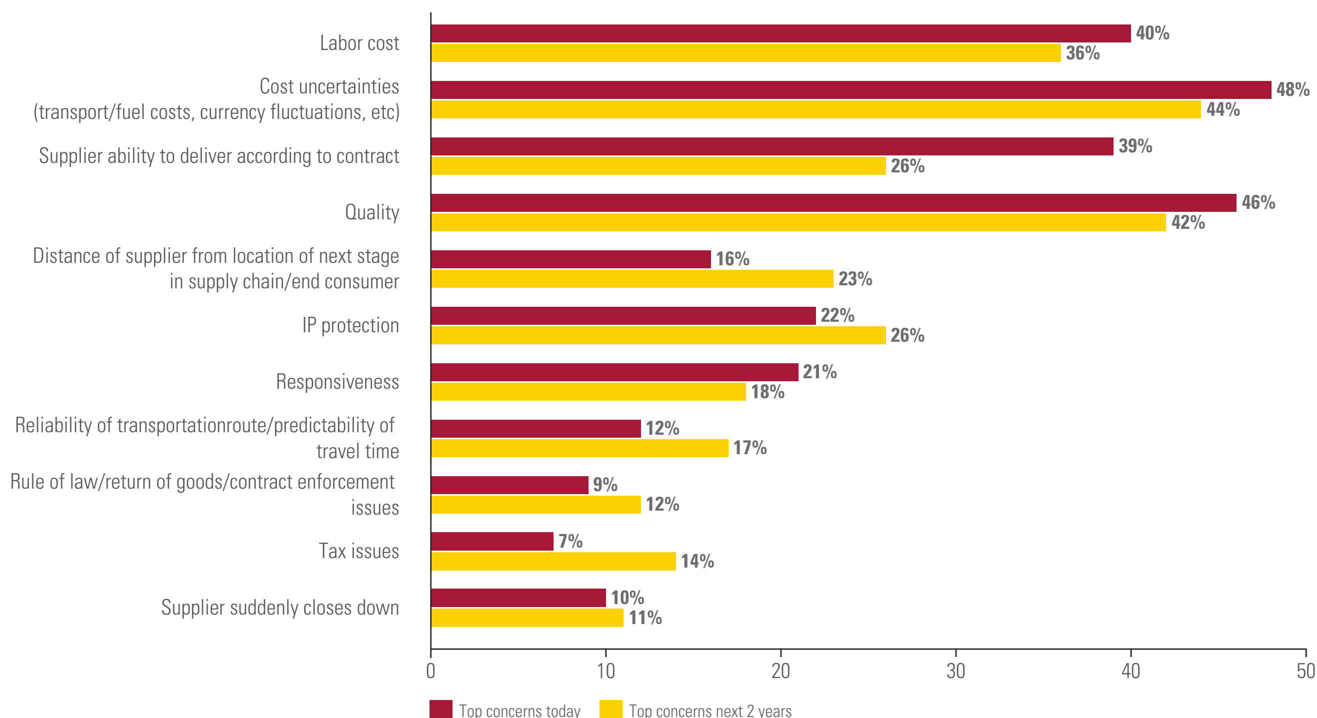
Survey respondents certainly recognize that current arrangements have weaknesses. At its most basic, supply chain management has always been about obtaining necessary inputs and distributing outputs at the lowest possible cost. Difficult financial times only magnify the importance of value for money. More survey respondents list cost (66 percent) as the leading attribute of their supply chain than any other, and cost uncertainty is the most common concern about suppliers (cited by 48 percent).

Regarding your supply chain as a whole, which of the following are the most important attributes?



Respondents were allowed up to three selections
Source: KPMG International, 2010

In considering your supplier relationships, which of the following are currently your company's biggest concerns, and which do you expect to be most important in the next two years?



Respondents were allowed up to three selections.
Source: KPMG International, 2010

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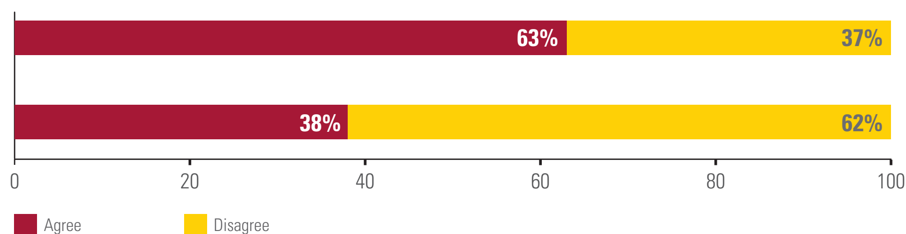
Yet how businesses think about cost makes a big difference. By focusing too narrowly on immediate financial concerns, they may lose sight of the bigger picture. For example, 63 percent say that their company needs to pay more attention to the non-financial elements of supply chain resilience, and 38 percent report that excessive focus on costs during the downturn has damaged relationships with suppliers.

Do you agree or disagree with the following statements?



Source: KPMG International, 2010

Despite these misgivings, supply chains are not seeing many broad, revolutionary shifts, whether because of overall uncertainty following the global downturn, widespread satisfaction with current arrangements despite their drawbacks, or simple complacency. This does not mean that nothing is happening. Instead, various companies are looking at a range of changes that, should they prove their value, could become the new supply chain norms as the economy recovers. Three particular areas of interest are supplier relationships, risk management and the distribution of the supply chain itself.

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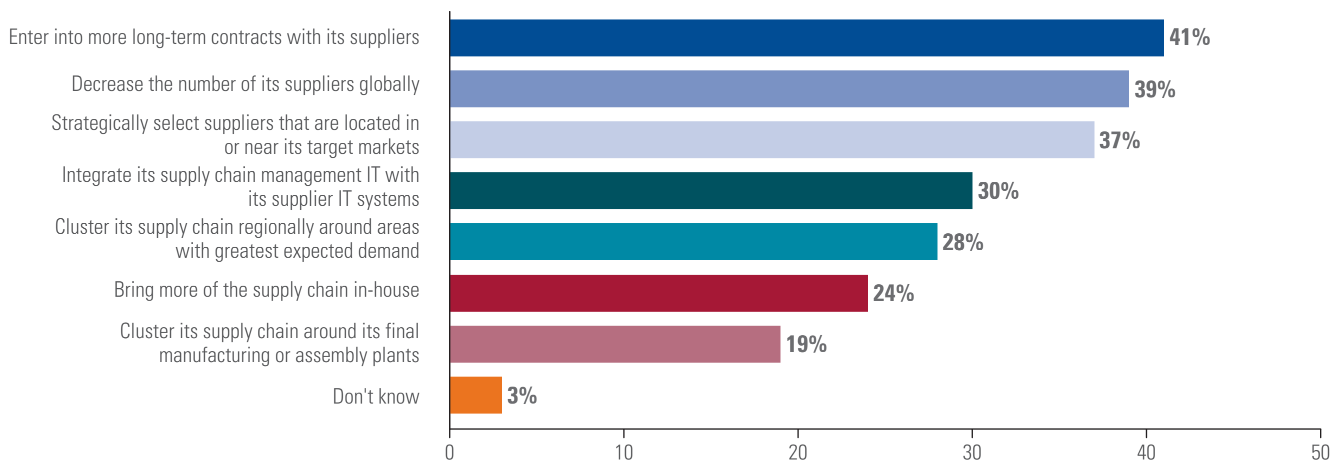
Supplier Relationships that Bring Value

The most discernable way that companies are strengthening supply chains is by developing closer, longer-term relationships with a select group of suppliers. For example, 41 percent of respondents expect to move toward longer-term contracts, the most common change they foresee over the next two years. This is particularly true for respondents who rank their companies as above average in both supply chain efficiency and reliability. For them, 53 percent expect more long-term contracts, compared with 35 percent of other respondents.

At the same time, 39 percent of respondents overall foresee fewer suppliers – the second leading change they expect. These reductions can be dramatic: Leggett & Platt, an American diversified manufacturer, for example, has reduced its suppliers from 60,000 to 17,000 overall in recent years, and a typical program at Rolls-Royce, the UK-based global power systems provider, now has 50 to 100 suppliers per program rather than several hundred in the past.

Over the next two years, how do you expect your company's supply chain strategy to change? Over the next two years my company will:



Respondents were allowed multiple selections.
Source: KPMG International, 2010

As relationships lengthen, they are also deepening. Most survey respondents are engaged in what Philips, the Netherlands-based global electronics firm, describes as "an emerging shift from competing industries to competing networks."[1]

[1] http://www.philips.com/about/company/businesses/suppliers/aboutsupplymanagement.page

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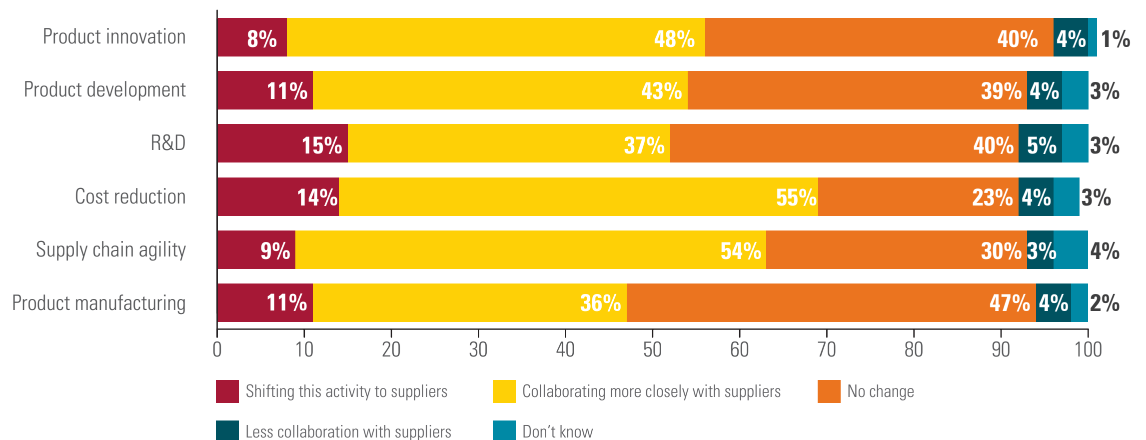
Over the next two years, how do you expect your relationship with suppliers to change in the following areas?



Source: KPMG International, 2010

More than half of respondents expect to collaborate more closely with suppliers on, or give responsibility to them for, product innovation, product development, and research and development (R&D). That figure rises to more than 60 percent for cost reduction and supply chain agility. Furthermore, one-third of respondents report that their companies are increasingly becoming assemblers of parts from top-tier suppliers that in effect are managing what once would have been the lead manufacturer's supply chain. Those with above-average supply chains are even more likely to pursue such collaboration (see chart on following page). They are also more likely to integrate their supply chain IT systems with those of their suppliers (39 percent compared with 25 percent for other respondents).

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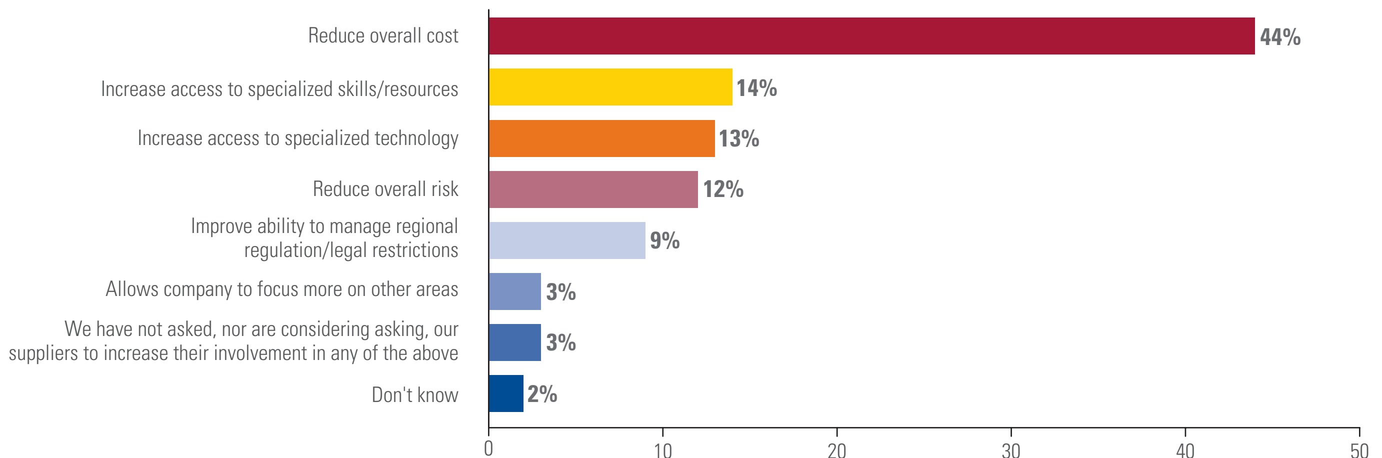
Companies expecting to shift responsibility for, or collaborate more closely with suppliers on aspects of supply chain in the next two years

	Above-Average Supply Chain	Other Companies
Product innovation	67%	50%
Product development	67%	49%
R&D	69%	44%
Cost reduction	75%	68%
Supply chain agility	74%	58%
Product manufacturing	59%	41%

Source: KPMG International, 2010

The main driver of this collaboration is cost reduction (cited by 44 percent of all respondents). While this might seem counter-intuitive – such a strategy impedes frequent switching of suppliers on price – the shift is a sign of an increasingly widespread appreciation that promiscuity is false economy. Closer, longer-term relationships can help both with price and the overall cost of supplies to the company. On the former, PK Ghose, CFO of India-based Tata Chemicals, points to one of his firm's leading suppliers, which provided coal to Tata Chemicals on the best possible terms even when prices in India shot up dramatically. More recently, the company has shifted from annual to quarterly pricing reviews for some commodities in order to take advantage of falling prices. "This can happen only if you have excellent relations with your suppliers," he says. "Cost is definitely a driver, but you need long-term suppliers that stick by you."

If you have asked, or are considering asking, your suppliers to increase their involvement in any of the above, what is the biggest driver for your company in doing so?



Source: KPMG International, 2010

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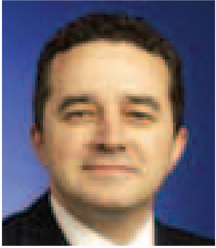

Tim Waters
Advisory Director
Global Supply Chain Optimization
KPMG in the UK

KPMG Comment

As Advisory Director within KPMG in the UK's Supply Chain Management practice, Tim Waters works with clients in a variety of industries. That gives him a good perch to examine supply chain performance from many different vantage points. According to Waters, the Diversified Industrials (DI) sector tends to be more mature than others. Given its product makeup, it has had little choice. "The sector has always had to manage its supply chain more carefully since equipment like aircraft and automobiles are far more complex to make and distribute than in other industries." That learning curve gave the sector an early advantage in formalizing many core management processes and integrating them throughout their supply chain operations. "The DI sector has been extremely skilled in applying their learning over the years. Where other industries are still trying to get their hands around reliable forecasting and inventory management techniques, the DI sector has really made such activities standard operating practice. Today, key tasks like demand planning are managed at a very sophisticated level with processes that are driven down through all the tiers."

Within the sector, Waters observes that high performing supply chain companies differ from their peers in a few important ways. "Many view the supplier relationship as a strategic partnership. Although they invest in few, select providers, they are more apt to negotiate longer contract terms, and 12-month purchasing agreements," he says. They are also more likely to collaborate with suppliers in higher value innovation areas and have fewer suppliers under management. "Extended contracts with key suppliers help top performers ensure certainty of supply, improve demand planning and fine-tune the mechanism for getting product to the customer," he adds.

Waters also finds that reporting lines have changed significantly. Where companies used to have supply chain reporting to manufacturing, with responsibilities narrowed to inbound materials management and outbound shipping, the supply chain's prominence as a strategic function is now reflected in the leadership structure. "Not only do supply chain heads typically report directly to the CEO and COO," notes Waters, "but some of the better companies have

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taken things a step further and devolved the finance function into the supply chain itself." To help manage foreign exchange, transfer pricing and treasury issues, today's supply chain directors often have a team of finance people working directly for them rather than the CFO, he explains.

While in the past, many companies managed their suppliers at arms length, relying on spot purchase orders and a telephone book to select parts, best-in-class companies have done away with all of that. "Many suppliers," observes Waters, "have personnel on site at the client and share access to order, pricing and new product information – data that before would have been completely confidential." The relationship is often so intertwined, he adds, "that some suppliers feel as much part of the client organization as they do their own."

Top performing companies in the DI sector are also more comfortable collaborating up the value chain and in partnering with countries formerly considered too risky from an intellectual property perspective. This gives them an inherent cost advantage. "Because some have been operating in places like China for many years, they have a better sense of where real reforms have taken place and where vulnerabilities still exist in enforcing copyright protection," he adds. "This helps them recognize which locations and vendors make the best fit, allowing them to enter into more strategic, cost-effective partnerships, with less risk."

On creating the optimal cost/price equation in the supply chain, Waters notes that "Supply chain strategy is all about balancing cost with quality and reliability. A low piece-price may cost more in the long run once shipping, storage and other costs are factored in," he adds. The better performing companies focus their time on selecting the right product to outsource to the right location, instead of simply shipping processes out wholesale to the lowest-cost seeming destination.

He concludes, "The most important thing in managing cost is that the changes are sustainable. Don't rush into something because it looks a lot cheaper. Instead, look at the big picture, end-to-end, making sure to factor in the total cost of acquisition and ownership."

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Price is only part of the picture; survey respondents say that quality is almost as important. After cost, quality is the most desirable attribute of the supply chain cited by respondents (57 percent). Drawing distinctions here, however, can be tricky. Peter Connelly, chief procurement officer of Leggett & Platt, explains that "cost is king because quality and service are givens", without which the contract simply would not happen. Steve Churchhouse, executive vice president of supply chain at Rolls-Royce, adds that "quality will always be paramount here, but quality, reliability and flexibility typically resolve into cost. If a supplier delivers reliably and has higher quality, you tend to have a lower lifetime cost." A more nuanced appreciation of the differences between cost and price – perhaps re-enforced by the notorious supply chain quality issues that other industries, such as automotive, consumer goods and toy producers, have suffered in recent years – will only drive this trend toward strengthened relationships.

When cost considerations alone drive this shift, however, there is a danger that companies are not getting all of the benefits. Maarten de Vries, global head of purchasing at Philips, explains: "We have strategic long-term relationships with our thirty-seven platform suppliers, and are looking to leverage their innovation power to drive our innovation." Open innovation has become an increasingly common strategy, especially after Henry Chesbrough published his highly influential book of that title in 2003. Its practitioners argue that no single company can, on its own, discover everything that would benefit it. Instead, firms should look outside their companies for potential intellectual property (IP), and be willing to license out any IP not core to their business. This often requires not just a change of processes within a company but a much broader change of mindset: although the survey indicates that more than half of companies are moving toward closer relationships with suppliers in areas such as product development, innovation and R&D, only 27 percent see the main driver as increased access to specialized skills, resources or technology. This suggests that many may not be prepared to take full advantage of the change. As the Leggett & Platt case study shows, however, the benefits of cooperative innovation can be worth the effort.

Case Study

Leggett & Platt

Working with suppliers to reinvent the wheel

Even before the downturn, Leggett & Platt's supply chain management executives addressed cost with a simple strategy: take out all the elements that do not add value. This approach has also been used in working with suppliers. Perhaps the most interesting collaboration has been a joint product development that has, according to Chief Procurement Officer Peter Connelly, literally reinvented the wheel.

One of the company's main products is bed frames, for which it both purchases and manufactures a significant number of casters. The simple product – a wheel inside a swivel frame – has been around for decades, but seen little technological development. Leggett & Platt teamed up with one of its strategic suppliers, Jacob Holtz Company, which has been making casters for more than 60 years. With an aim to eliminate from the caster anything that does not add value, "over the last three years we've worked with [Jacob Holtz Company] on a total redesign, a re-invention of it," Mr Connelly says. The result is a patented product that is lighter than traditional casters, 20 percent stronger, uses less material, is completely recyclable, and is cheaper to produce. Bill Frame, president of Jacob Holtz, reports that in just two years the product has taken 85 percent of the North American bed caster market, which the company had previously all but lost to Chinese manufacturers.

As with any such collaboration, the division of intellectual property is crucial. The arrangements here benefit both sides. The patents belong to Jacob Holtz, which has been able to spin off the IP into other areas: its new retail display caster has captured 60 percent market share. Leggett & Platt, meanwhile, has a long-term strategic agreement that provides locked-in, indexed pricing for the product. It also gets the first chance to review any new caster technology.

The cooperation is continuing, with technologists from the two firms regularly sharing ideas. Mr Connelly believes that the key to success behind the ongoing collaboration is the strength of the relationship. "It is really based on trust," he says. "It involves more than just a legal document." He therefore expects that when companies engage in product co-development, geography will matter. "It is much easier to do IP stuff closer to home," he notes. "In other countries, there are different rules, different companies, different cultures. We are not looking them in the face every day."

Whatever the driver of closer supplier relationships, the recent downturn has presented particular challenges in maintaining them. Nearly 40 percent of respondents admit that an excessive focus on costs has damaged trust with suppliers. The solution, interviewees insist, begins with transparency. Timothy Lynch, general manager of procurement at U.S. Steel, says that some issues may be inevitable: his company had to scale down as much of the supply chain as possible in late 2008. Unfortunately, "It certainly did present us with a difficult situation," he says. The most important thing, he found, was to be open about the company's circumstances with its top suppliers and to understand the implications for them. As a result, the firm's supply base provided many cost saving ideas. Similarly, Philips made explicit the link between help now and benefits later with its "sooner and more" commitment. Says Mr de Vries: "We asked suppliers to deliver cost efficiencies to us sooner, in order to weather the storm, with the commitment to deliver more business once we are back in growth mode." The positive feedback from suppliers permitted collaborative cost cutting.

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Rethinking Risk

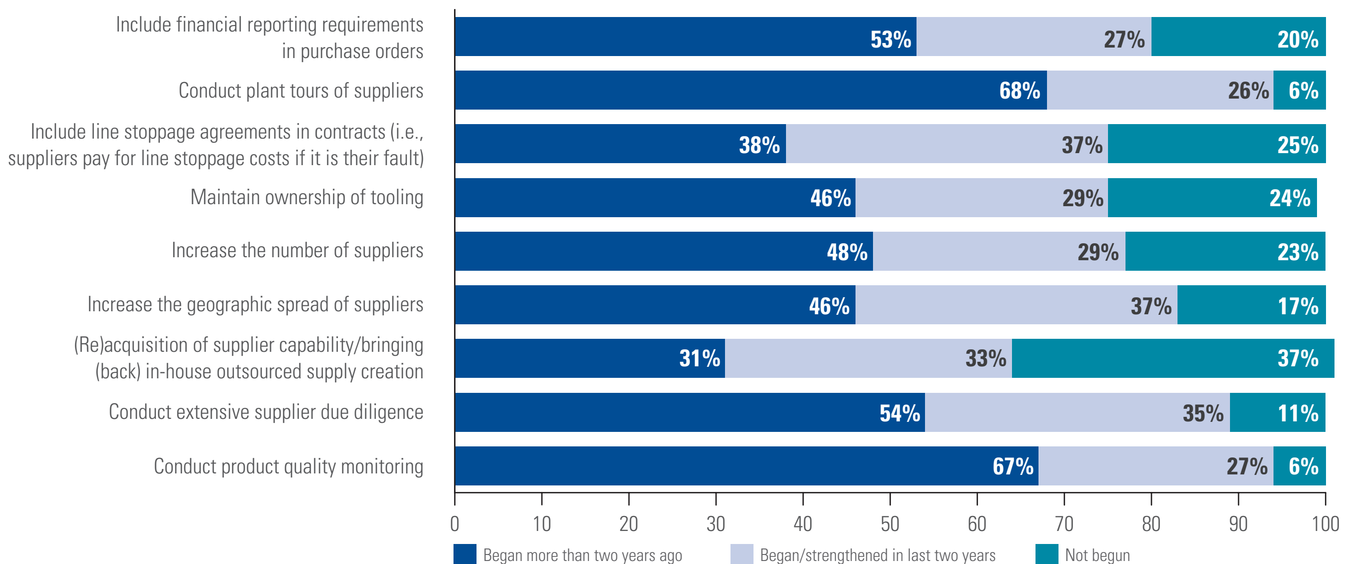
Over the past couple of years, supply chain executives have had to deal with more than just the downturn. "We've experienced some interesting supply chain risks recently," says Mr Churchhouse. "The [Icelandic] volcano was significant, and there was a significant earthquake in China in 2008. We have to think about risk carefully as we go forward. In previous cycles, supply chains were much more [geographically] compact."

Nevertheless, the main risk focus has, understandably, been supplier financial risk. As Mr de Vries notes, the downturn caused executives to "sharpen our pencils" in monitoring this area. As a result:

- 80 percent of respondents now include financial reporting requirements in purchase orders
- 66 percent review supplier risk annually or more often (see chart on following page)
- 51 percent actively monitor and audit the financial health of key suppliers
- 40 percent are considering bringing back in house parts of the supply chain that have been outsourced

In addition, a wide variety of supplier risk management techniques have become increasingly common practice in the last two years. For example, 75 percent now have line stoppage agreements in contracts.

Which of the following supplier risk management practices does your company engage in and which has it begun to do more of in the last two years?



Respondents were allowed multiple selections.
Source: KPMG International, 2010

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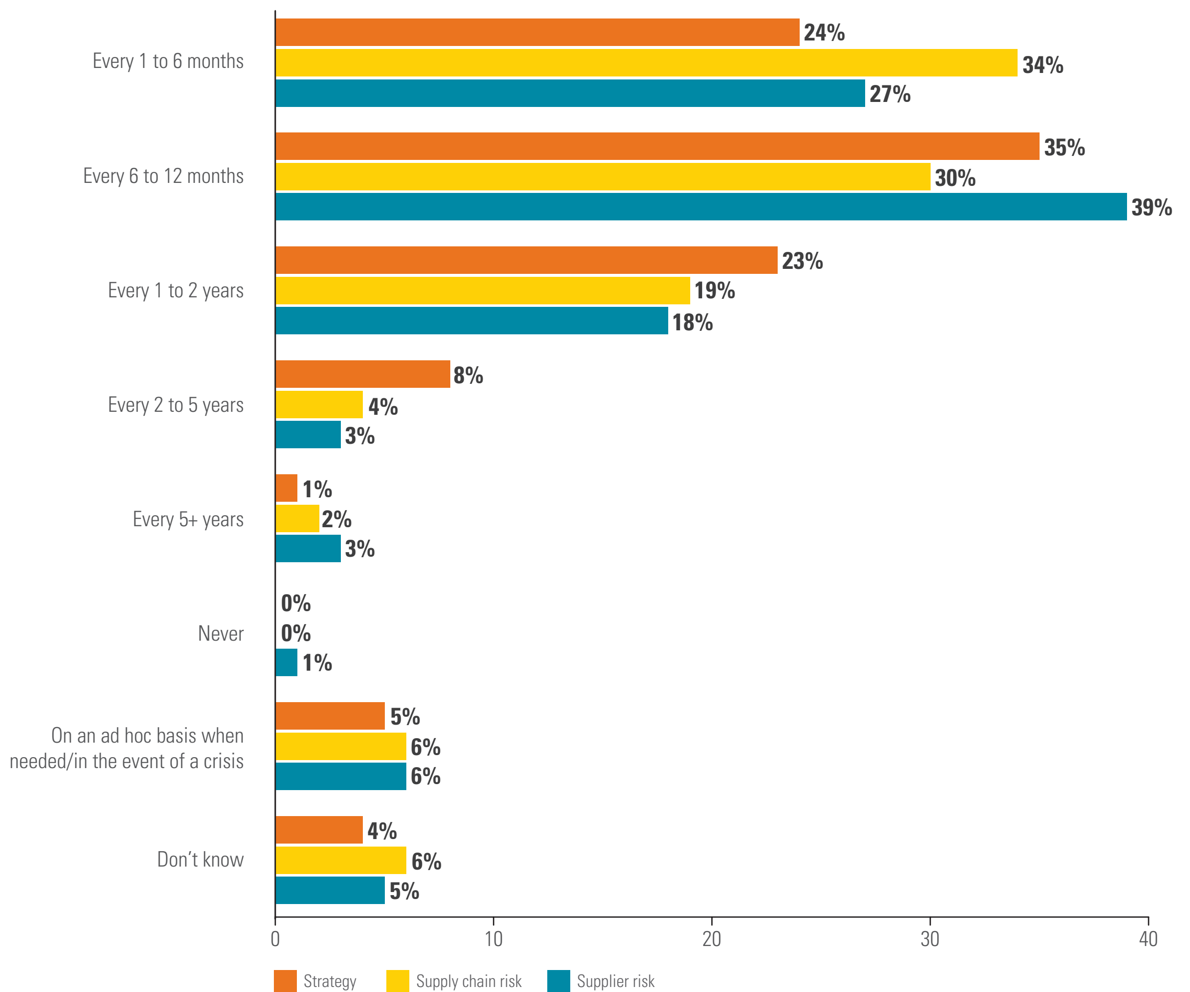
How often does your company review overall supply chain strategy and changing supply chain risks?



Source: KPMG International, 2010

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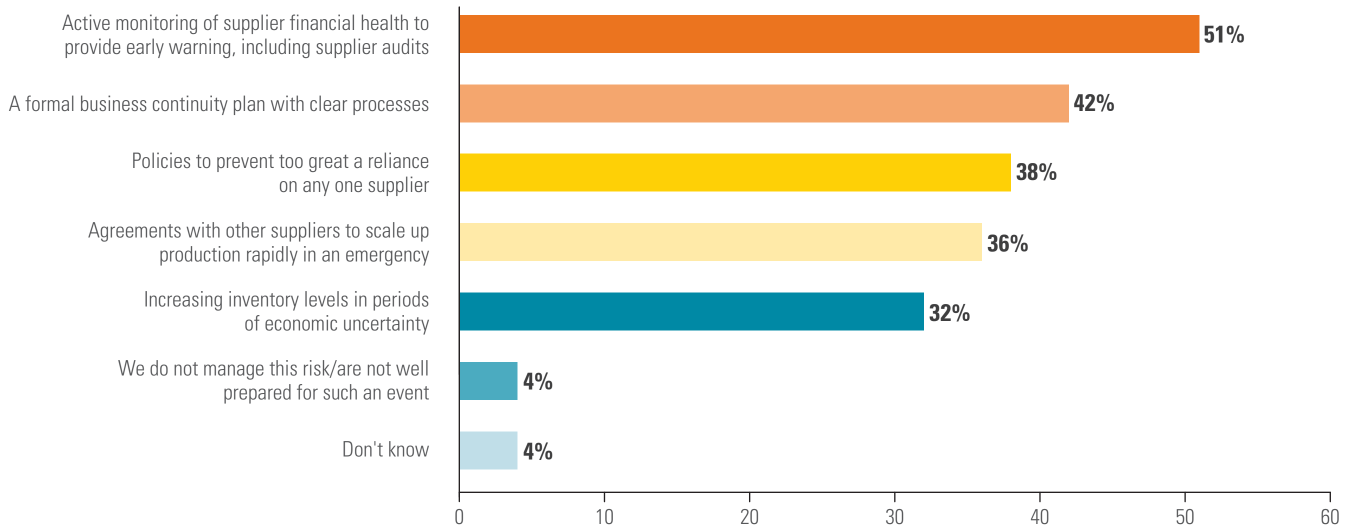
How do you avoid the risk of the abrupt removal of one of your two or three top suppliers?



Respondents were allowed multiple selections.
Source: KPMG International, 2010

Although the immediate cause of this increased attention to supplier risk is the downturn, it needs to be seen within a broader context. As companies have outsourced more functions to the supply chain, and are looking to become more reliant on fewer yet longer-term relationships, the risk if something goes wrong with a supplier has also grown. Manufacturers are looking for a select number of trusted companies with similar goals. As Mr Lynch puts it, "My goal is to build better partnerships with suppliers that have similar goals to our company. I want partners who can react quickly and provide us with high-quality, cost effective supplies and service." Mr Churchhouse of Rolls-Royce agrees, adding: "We are always looking for partners willing to share risk. There are plenty with sufficient scale and appetite, but you need people who are competent and bring capability."

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Graham Smith
Global Segment Leader
Engineering and Industrial Products

KPMG Comment

The severity of the recent recession will likely lead to long-term changes in the way companies in the Engineering and Industrial Products (E&IP) sector operate, according to KPMG's Global E&IP Segment Leader, Graham Smith.

Among these changes is a renewed emphasis on performance management, especially when it comes to cash and working capital. "No-one has the luxury of sorting performance issues out over time," says Smith. As a result, key indicators are now much more firmly embedded in the management review process. In addition, while companies have always had a keen eye on costs, they are making more ruthless assessments of their supply chain investments to calibrate where they're likely to get the best return. "Most have cut back expenses as much as they can," he says, "so the emphasis now is finding additional ways to lower the cost of doing business through process or structural redesign."

To that end, Smith sees leaders far more engaged in understanding what is driving their profitability. "The level of scrutiny is so much greater now," he adds, "and the performance reviews much more sophisticated. Companies really want to know to a fine degree where they are making their money and which customers, products and business units are the most valuable."

As companies strive to add value in each stage of the supply chain, Smith believes many will do so with a surgical hand. To accelerate R&D, for instance, E&IP companies might eye their weaker competitors as possible acquisition targets, but they'll integrate those assets far more selectively than in the past. Where some level of inefficiency used to be considered an inevitable side effect of growth, Smith says, "E&IP companies are becoming far more skilled at minimizing their operating footprint, focusing on the top line gains acquisitions can bring, but shedding unnecessary plants and equipment."

The supply chain plays a key role in helping companies rebalance resources and support high-growth areas. As business needs change, that network must be able to help the business scale up or down. Such agility requires companies to evaluate the elements that comprise their supply chain in a more integrated fashion, factoring in political, economic, and social issues; areas that go beyond cost. "At the end

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of the day." says Smith, "it's about maximizing operating profit and that also means creating the most tax-effective supply chain."

Many are reshaping their offshoring programs to consolidate spending in more favorable tax and regulatory regimes. This adds both sophistication as well as a great deal more complexity. "These efforts are not for the faint hearted," says Smith. "You need a clear view of where you want to be in five years time. Otherwise, you'll be reacting to events rather than staying out in front of key market movements."

This approach also applies to managing risk. Like many sectors, E&IP saw many smaller suppliers go out of business over the last 18 months. For companies caught short, the result was line stoppages and delivery issues. "Supply chain strategy has not always been well thought through and properly executed," says Smith. "Too many organizations relied on sole source supplier relationships and a hands-off management approach, and that proved a dangerous place to be because if the supplier failed, you failed." There is nothing wrong with sole source supply as long as it is properly managed.

As companies enter longer term relationships with a more selective group of suppliers, they are also revisiting the terms of their contracts to mitigate downside risk and improve financial outcomes for both the company and the suppliers. In Smith's view, three factors distinguish better supply chain networks. They are: effective due diligence at the outset; continual monitoring, and rigorous performance management. "Like all relationships, the most effective supply chains are based on mutual trust and gain, such that both sides come out ahead when performance objectives are met," says Smith.

This extends to new forms of collaboration as well. "I wouldn't be surprised to see some big global E&IP companies enter into partnerships to develop things together," adds Smith. "That allows companies to spread the risk of product development but keep significant control of the IP."

Taken together, these measures can help E&IP companies ride out continued economic uncertainty with a supply chain that is better able to respond to the ups and downs of the business cycle.

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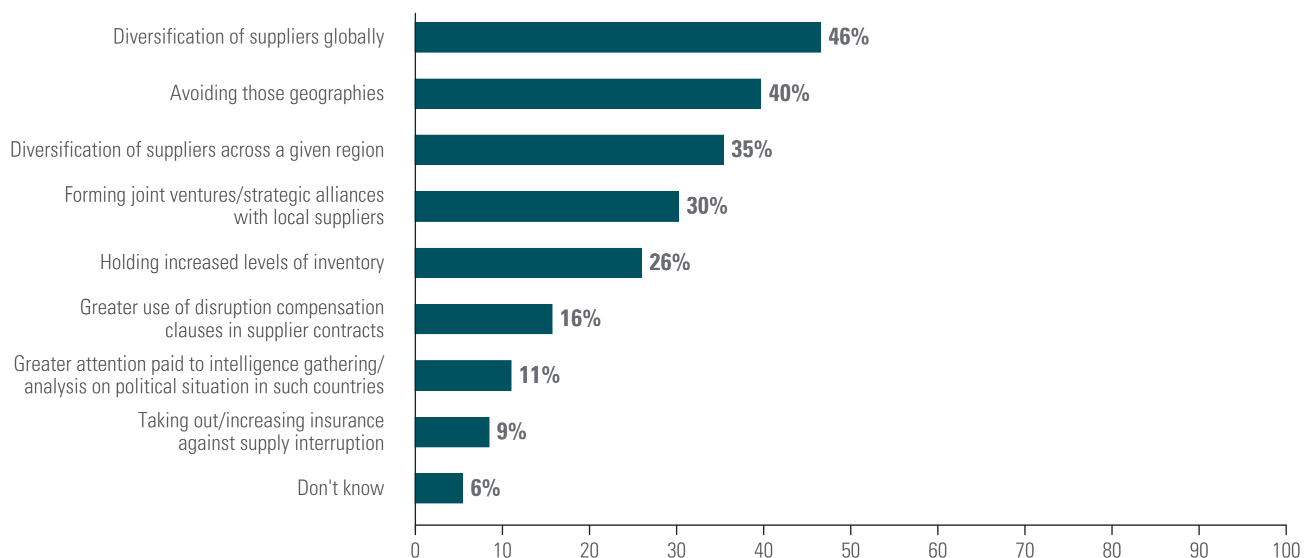
This view of partnership has even led some companies to help suppliers financially in certain circumstances. Philips and Rolls-Royce both used their own financial strength to provide financing facilities so that their suppliers could get easier access to payments. Tata Chemicals, on a case-by-case basis, considered how to help suppliers that were weakened by the downturn but still capable of surviving, by continuous dialogue on their requirements, honoring all contracts with them, and renegotiating payment terms. This is recognition that a supply chain with healthy strategic partners makes a company stronger.

When addressing supplier risk, for certain companies the solution is to stop using any outside supplier rather than build improved relationships. In the last two years, 33 percent of all respondents have brought back in-house parts of the supply chain that were previously outsourced, and 40 percent are considering doing so because of a growing appreciation of costs and risks. This does not necessarily mean a huge change. Leggett & Platt, for example, has re-established a logistics operation in the United States, rather than rely on contractors. Nevertheless, it may be a strategy worth considering for companies that are seeking greater control or believe that current potential partners involve too much risk.

Looking beyond supplier risk, however, the picture ceases to be one of increased attention to detail. Instead, the survey suggests that too often companies prefer to avoid risks rather than understand them – which may mean that they pass up on opportunities. The preferred strategy of 40 percent of respondents to any political or regulatory volatility is to avoid such regions altogether – the second most frequent response. The most common answer is to diversify globally. Only 11 percent seek to understand better the political situation they may be facing.

How are you mitigating the risk of political/regulatory volatility in supplier locations disrupting your supply chain?



Respondents were allowed multiple selections.
Source: KPMG International, 2010

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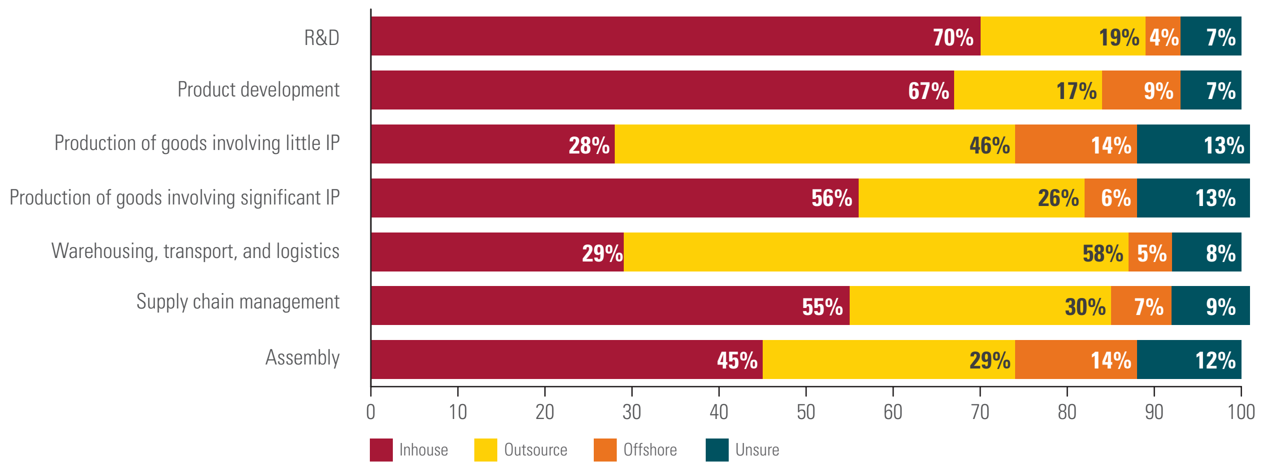
However prudent this might seem, a good example of where this can hurt companies is in the area of IP. IP is the lifeblood of a company, and safeguarding it is a key issue: although cost and quality top the list of supplier concerns, over one in five (22 percent) respondents list IP protection among their company's biggest supply chain worries, and more than a quarter (26 percent) expect it to be so in two years. Accordingly, R&D and product development are the parts of the supply chain companies are least likely to outsource altogether.

Going forward, which elements of the supply chain is your company more likely to outsource, to locate offshore, or to keep in house?



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Marty Phillips
Global Segment Leader
Aerospace and Defense

KPMG Comment

Although the Aerospace and Defense (A&D) industry is used to swings in the business cycle, increased competition within the commercial airline business and projected cuts in government spending threaten to create a new paradigm for the industry. Within the United States, a series of procurement reforms will remove an unprecedented $400 billion from the budget. Similar changes are taking shape in Europe. The private sector has also felt the pinch, cutting back flights and charging a host of new fees in an effort to combat volatile fuel prices and a drop off in business travel. "There will be a dramatic shift in thinking about cost," says Marty Phillips, Global A&D Segment Leader, "Given the proposed pullback in defense spending and difficult commercial environment, available revenue and capital investment dollars will drop and price competition will intensify."

In response, A&D companies are exploring opportunities in adjacent sectors, repurposing innovations in technology and logistics for new applications in areas such as homeland and perimeter security. Some are also looking at new markets, such as India. The latter, while promising, comes with its own constraints. Says Phillips, "Companies are going to have to 'pay to play' and develop either a captive supply chain or some kind of joint venture to create a supporting infrastructure for this otherwise nascent industry in India."

While these moves will help the top line, the bottom line, of course, is cost. "There's a lot of portfolio shaping going on and a lot of internal restructuring," says Phillips. In that respect, the industry has long been a first mover. "Aerospace led the industrial sectors in letting their major sub-assemblies go in the mid-1980s," he notes. "Then they let software go. Now they're experimenting with outsourcing technical and design elements."

Those changes have not come without learning pains. "There's a difference in spreading financial risk versus technical risk," notes Phillips. "Some companies realized they moved too quickly in sourcing higher-value, more design intensive processes. This led to problems when vendors proved unable to deliver the quality needed or did not have the resources to withstand the economic shocks of the past few years. In response, some A&D companies are reacquiring elements of their supply chain to better control the process.

As to how companies will weather the prospective severe budget pressures, Phillips is optimistic about the sector's resilience. "They are masters at spreading risk in the supply chain."

China presents a particular IP challenge. According to a recent Economist Intelligence Unit survey of more than 1,000 executives, 57 percent consider China's weak rule of law – notably poor IP protection – to be that country's leading barrier to growth in the next decade[2]. Respondents to the current survey share this concern. They look to China largely for low-end jobs: production of goods involving little IP, assembly, and warehousing. The case is the opposite for the United States; respondents are looking to that country to carry out work that involves more IP.

Which elements of your supply chain will be fulfilled in the countries where you expect sourcing to increase the most?

	Sourcing from China	Sourcing from United States
R&D	29%	64%
Production of goods involving significant IP	33%	45%
Product development	36%	50%
Supply chain management	46%	45%
Warehousing, transport, and logistics	51%	36%
Assembly	55%	41%
Production of goods involving little IP	72%	32%

Source: KPMG International, 2010

But keeping IP out of China entirely is not necessarily the optimal solution, as it eliminates the ability to benefit from an increasingly strong and innovative technological base from which other sectors, such as information technology and pharmaceuticals, are already profiting. Philips, which has more than 1,500 patents in the country, is one such example. Notes Mr de Vries: "We have cases where we have local innovations in China that we leverage on a global basis." This requires a focused effort to protect IP in the country. The company has been pursuing a concerted strategy for nearly a decade that includes both active enforcement of its rights and public education. It has also founded three IP academies at major universities to raise awareness of the issue. This example illustrates how understanding the nature of this risk and protecting oneself accordingly can yield greater advantages than simply avoiding it.

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[2] Economist Intelligence Unit, *The big tilt: the rise of the East and what it means for business*. February 2010.

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Andrew (Andy) Williams
AsPac Diversified Industrials Leader

KPMG Comment

While the West might look to China as a bargain destination for low-cost, low-IP manufacturing and supply, China views itself far differently. "There's a tendency to see the Asia Pacific region one-dimensionally, as a low-cost center for manufacturing and supply," says Andy Williams, KPMG's regional head of Diversified Industrials (DI) in Asia Pacific. "The reality is far more dynamic."

Although China has an abundant labor pool equipped to service basic manufacturing needs, the country is churning out an increasing number of highly skilled university graduates. Combined with a fast-growing economy, a stable currency and a powerful central government, China is a self-confident nation that sees itself fully capable of producing world-leading innovation.

"That it's not exactly there yet is not indicative of its potential, nor its ambition," observes Williams.

"There's a danger in underestimating China" he adds. "A shift in the balance of the global economy is already driving a change in perception about the country. When Zhejiang Geely bought Volvo earlier this year, that progression accelerated." It's this quiet but rapid advance in capabilities that Williams thinks could take foreign businesses off guard. Although China is still on a learning curve when it comes to meeting outsourcing and supply needs on a global level, it's bent on narrowing the gap swiftly. The same is true of the region in general. Certain new lower-cost markets have emerged as competency hotspots for specialized needs. For instance, the Philippines, with their educated, largely English-speaking talent pool is fast becoming the 'go-to' spot for key back office functions such as call centers and finance, while Vietnam, already a strong manufacturing center, is investing heavily in becoming a logistics leader.

"But," Williams cautions, "it's important to recognize that while labor costs in emerging markets such as Thailand and Malaysia are often lower than China and other traditional sourcing destinations, other factors, such as infrastructure preparedness, educational readiness, and legal and regulatory issues, can add cost in other ways." And those invisible costs, he adds, can become far more expensive in the long run.

Likewise supply chain enhancements in Asia should support and reinforce the overall business strategy as much as capitalizing on lower cost opportunities.

To realize supply chain cost and performance improvement objectives, Williams suggests "DI companies need to look across the whole supply chain and ask: 'How do I get the right quality; and what locations offer me the best overall returns once I factor tax, regulatory, legal, labor needs and other issues into the mix?'"

Rather than diving in to address cost issues within the current sourcing and supply chain model, DI companies need to pull back and think about their overall business objectives first: 'How do I get my product to market faster, better, cheaper?' And, 'Who is best placed to help me meet that need from a business perspective?'

Perversely, the best way to take cost out is by investing. While foreign multinationals haven't exactly had an arms-length relationship with China, the approach tends to be impositional and not sufficiently collaborative. "Instead of, 'Here are three problems my company needs help with'," says Williams, "they are more likely to say, 'Here are the three things we'd like you to do.'" One way of making that investment is by engaging more actively in the day-to-day management of the supply chain, whether through acquisition, joint venture or other partnership. "Putting skin in the game by actively engaging with local businesses and demonstrating a long-term commitment," Williams observes, "can enable more productive relationships and allow greater control over risk and cost."

To move up the value chain and begin those conversations with in-country partners, foreign multinationals need to foster the right relationships with Chinese and local governments, particularly in light of China and Asia's growing importance as a consumer market. No longer just a source for low-cost materials and resources, these markets are the driving force behind current and future demand. As a result, high performing DI companies will focus considerable effort in building and formalizing relationships with their Asian supply base. "Don't be afraid to have the same discussions with your Chinese suppliers as you would your North American or European ones. If anything, business in Asia is even more relational than in the West," says Williams.

"It's easy to take cost out," he concludes. "When it comes to the supply chain, what's far harder, is figuring out where to strategically invest."

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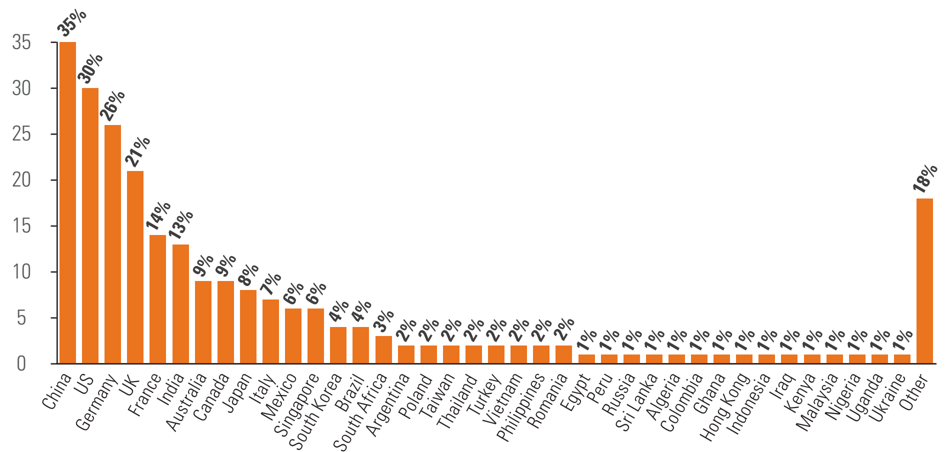
Changing Supply Chain Geography?

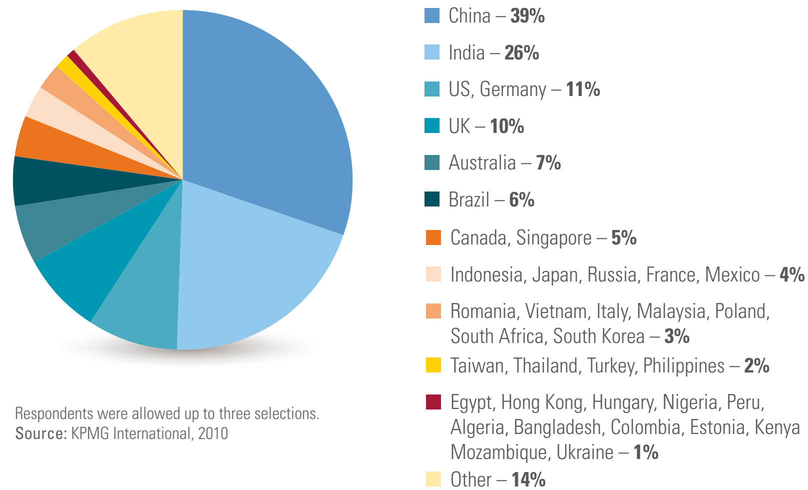
Finding the best way to tap the value of global sourcing is a perennial supply chain issue. The rise of Chinese manufacturing is one of the major economic stories of recent decades, and the survey indicates that it is likely to continue. According to respondents, China is the most common primary sourcing location of any country (cited by 35 percent). By a long margin, more also plan to invest there in the next two years (39 percent) than any other country. India comes next, at 26 percent. Conversely, companies expect to do less business with developed countries: the locations where the most expect to cut sourcing are the United States (18 percent), the United Kingdom (10 percent), and Germany (9 percent). The primary reason, cited by 69 percent of those leaving these three countries, is cost.

What are your current primary sourcing locations?



Respondents were allowed up to three selections.
Source: KPMG International, 2010

During the next two years, from which countries do you expect to increase sourcing the most?



Respondents were allowed up to three selections.
Source: KPMG International, 2010

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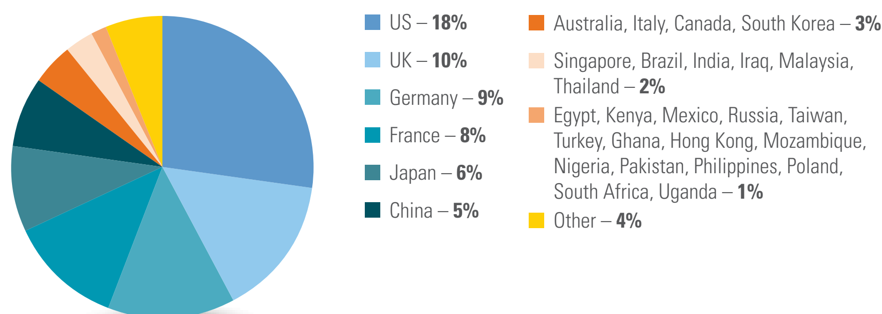
During the next two years, from which countries do you expect to decrease sourcing the most?



Respondents were allowed up to three selections.
Source: KPMG International, 2010

While this is consistent with the stereotype of a completely globalized manufacturing sector abandoning developed countries for the low costs of Asia, the survey presents a more complex picture. Although companies may intend to source less from the developed world, these countries are still important players: after China, the United States (30 percent), Germany (26 percent), and the United Kingdom (21 percent) are still the primary sourcing locations for respondents. In addition, nearly as many respondents expect to increase sourcing from Germany and Britain as expect to cut back significantly in these countries.

Moreover, supply chains have a strong regional character too often ignored in stories about a flat world. As the accompanying chart shows, China and the United States are important for respondents in every region. After that, proximity provides a clear advantage.

Leading primary countries of supply by region of respondent

Respondent Location	Asia-Pacific		North America		Western Europe	
Leading primary country of supply	China	52%	US	48%	Germany	41%
	India	28%	China	35%	France	30%
	US	26%	Germany	22%	China	30%
	Australia	24%	Canada	19%	UK	25%
	Japan	15%	UK	18%	US	20%
	UK	15%	Mexico	16%	India	11%

Source: KPMG International, 2010

Near-sourcing has several advantages, the most obvious of which is lowered transport cost. It makes sense to buy low-value, high-volume goods close to home. As Mr Connelly puts it, "You can't ship popcorn." But it can also be an issue for high-value inputs: Mr Churchhouse says that some items for Rolls-Royce are so big that transport expenses become material. Near-sourcing also allows improved scalability, with local providers being the more economical providers of small orders.

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Gerhard Dauner
European Diversified Industrials Leader

KPMG Comment

Gerhard Dauner, KPMG's Diversified Industrials Leader across our Europe LLP member firm network, sees the sector retaining a positive outlook despite recent market turbulence. "The industry is diversified in two ways," says Dauner, "both in terms of the breadth of the companies that comprise it as well as the range of countries in which they operate." But while those built-in buffers may hedge the industry on a sector level, Dauner's clients share many of the same basic cost and cash concerns echoed in the survey.

With internal cost cutting programs already in effect, his clients knew they had to find ways to shave expenses across their wider operating footprint. "I've seen companies become far more engaged in working with suppliers to improve process efficiency and effect more far-reaching savings," Dauner adds.

Perhaps because there's nothing like a crisis for focusing attention, the fiscal well-being of key suppliers has become a more urgent priority as companies in the sector considered whether the economic crisis might have affected their suppliers' quality controls. As a way to step up their risk management efforts, some built special task forces or established departments to assess financial data, review quality reports, and develop reliable measures to gauge risk.

In addition, many European companies in the automotive, engineering and industrial manufacturing industries restructured their supply chains to minimize volatility, in some cases regionalizing their distribution and logistics network. To improve oversight, Dauner states, "Companies are also taking a more active role in managing the supplier relationship and encouraging their suppliers, in turn, to become more adaptive to changing business conditions."

Although some clients chose to bring certain operations closer to home in response to economic uncertainty, Dauner believes that in the long run companies are likely to pursue a more diversified global supply chain as they fine tune their abilities to balance risks and cost. "Supply chains are never static," he notes, "but are continually evolving with the aim of delivering sustainable growth."

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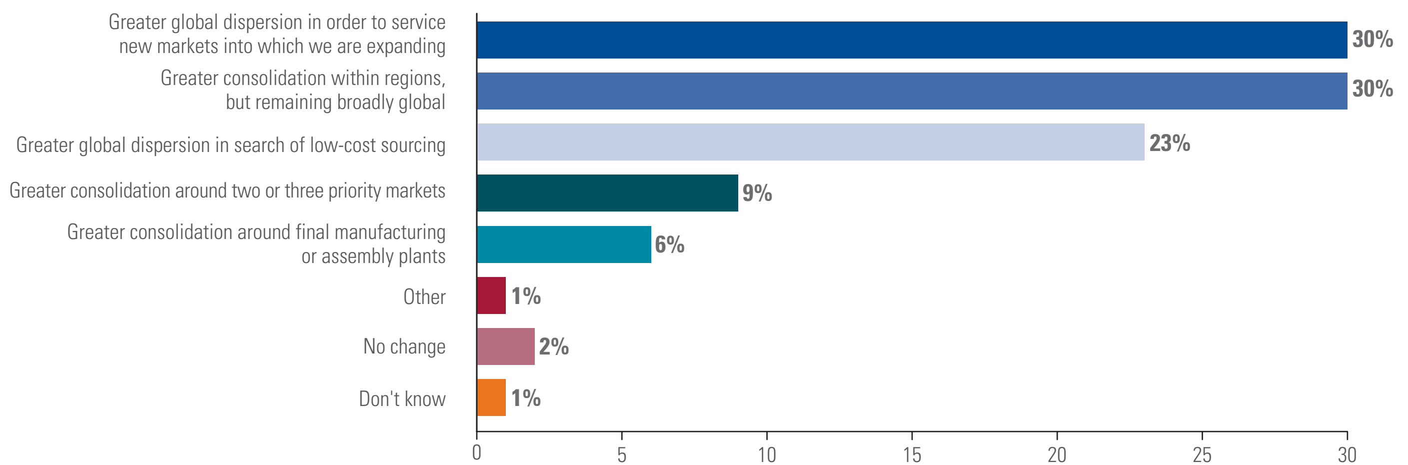
There are also risk benefits to near-sourcing: 47 percent of respondents are moving toward a business model where suppliers are kept close to manufacturing or assembly plants, in order to reduce supply chain risk. For example, non-cost related transport issues – the distance of the supplier from the next stage of the supply chain and the reliability of transport – are leading supplier concerns for 28 percent of respondents right now, and 37 percent expect at least one of these to be a major worry in two years. Near-sourcing also clearly brings benefits such as lower currency risk and greater security of supply. Nevertheless, it may not always be an option. Rolls-Royce, says Mr Churchhouse, simply cannot avoid the challenges inherent in a global supply chain.

While cost and risk will continue to be major issues in the distribution of supply chains, other factors look likely to shape sourcing geography as well. In particular, a significant minority of respondents reports that their companies are rethinking the link between supply chain organization and customers: thirty-seven percent expect to strategically select suppliers near target markets over the next two years.

What this means in practice is still unclear. At a broad level, given the relative strength of demand in emerging markets compared with developed ones, the geography of a supply chain built around customers will have much in common with one built around low-cost suppliers. Moreover, the same driver of change can lead to very different results: In the coming two years, 30 percent expect greater dispersion in their supply chain to better serve global markets, but 28 percent foresee more clustering in areas of the greatest expected demand.

Which best describes the shift you foresee in your company's supply chain in the next two years?



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Case Study

Philips

Building the supply chain around the customer

Philips has been rethinking not just the shape of its supply chain, but its underlying rationale, says Maarten de Vries, global head of purchasing. The direction is clear: the company, he says is "looking to evolve an integrated supply chain, transforming it for customer value." Rather than looking at everything in light of the needs of the company's business units and how they produce goods, the company now focuses on "the way we deliver our products and solutions in different business models." Mr de Vries cites warehousing and distribution as an example. Previously, several supply chains would have served the needs of various individual product lines. Now, he says, "we are moving to a situation where there is one common distribution platform per region, which should serve different business models and customers needs, and be much more customer-centric."

The approach also has advantages internal to the business. Mr de Vries notes that it is easier in such a system to integrate the supply chains of acquired companies, for example. The big benefits, though, are in better serving consumers: the new approach allows innovations that would have been difficult under the previous system. Data from on-the-shelf inventory tracking in its consumer lifestyle stores, for example, is now fed directly into the supply chain, allowing better forecasting of how frequently stocks will need to be replenished. The result has been a significant increase in sales as products are on the shelves when needed.

Looking toward the future, Mr de Vries expects further improvements: "We will move more toward regional supply chains where we can do late customization in the region itself, in order to create higher agility to serve customers better."

There is no universal view on the importance of such a shift. A majority do not even see such a change happening, and in some cases doing the opposite would be an improvement financially. Tata Chemicals, for example, has elements of its inorganic chemicals supply chains servicing India, Kenya, the United States and the United Kingdom. It is considering integrating these and housing them in Singapore, in order to obtain significant efficiency and tax benefits.

Where supply chains do more closely reflect existing and potential markets, the underlying reasons also vary. For some companies, such change is an outgrowth of their own facilities already being dispersed to serve customers. Sometimes only local suppliers will do: For example, U.S. Steel tries to buy locally for its Eastern and Central European operations "because the service level there is very high", Mr Lynch says. He adds that, as a company that has made many acquisitions, some facilities have equipment that cannot be serviced anywhere but by skilled local suppliers. However, his company does use non-local suppliers, as needed, to help drive competition and alleviate any local vendor constraints such as time and materials availability.

For other firms, market dynamics will bring suppliers physically closer to companies' manufacturing sites because transportation costs are lower. Referring to a new manufacturing facility Rolls-Royce is building in Asia, Mr Churchhouse says, "We expect that supply chains will coalesce around it. We are facilitating but not forcing."

Still other companies, as the Philips case study shows, are seeing the changing relationship between customers and supply chains as an opportunity for a strategic rethink. Although no clear consensus on best practice is emerging – and is unlikely to until the world's economic situation becomes more steady – companies might benefit from taking the opportunity to consider where there might be advantages to rearranging supply chains that go beyond low-cost sourcing.

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Conclusion

The downturn has not led to uniform changes of the world's large industrial manufacturing firms' supply chains, but it has encouraged them to experiment with a variety of approaches to address current cost concerns and position themselves for the recovery. Executives should review their own strategies to get ahead of possible incipient trends:

- Companies rating their supply chains as above average are establishing longer-lasting, deeper partnerships with a smaller number of suppliers. Manufacturers should consider strategic suppliers with which they can genuinely collaborate, how the partnership can help the enterprise – particularly with innovation – and when to give help as well as when to request it.
- Companies need to review supply chain risk not merely in light of supplier risk arising from the downturn – although that is certainly important. They should be mindful of broader, non-financial risks, and consider how a better understanding of risks could lead to an exploitation of opportunities.
- The interaction between the geography of a business' customers, operations, and supply chain should be reviewed to see if companies are using the best selection of sourcing locations to tap into unique sources of talent and supply while minimizing risk. They should also consider production requirements, customer service, and potential growth in new and existing markets.

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