



AUTOMOTIVE

Global Location Strategy For Automotive Suppliers

KPMG INTERNATIONAL

Contents

Foreword	01
Introduction	02
Methodology and Sources	05
The Pattern of Globalization	06
A Strategic Deficit?	09
Location Driver: Growth	10
Location Driver: Cost	13
Location Driver: Innovation	15
Making Local R&D Work	16
Location Driver: Risk	18
Strategic Approaches	19
Conclusion	21

Foreword



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Global Chair

The financial and economic turmoil of recent months has hit many businesses hard, but none harder than the automotive industry. Suppliers in particular are under intense cost pressure, forcing them to look for new low-cost patterns of sourcing and manufacturing. But KPMG's latest research into Location Strategy suggests that if suppliers cannot devise integrated location strategies that embrace risk as well as cost, in the longer term they may lose out.

Our research points to a strategic deficit among supplier companies extending their operations across borders – and to the fact that this is likely to be a growing problem. Although overall capital flows to emerging economies fell in 2008 amid economic crisis, foreign direct investment actually increased*. We believe that auto suppliers making these investments are driven primarily by growth and cost considerations. In very few cases do these investments appear to form an integrated strategy that would embrace all globalization drivers, with the aim of developing a balanced global footprint that would be resilient in the face of changing conditions.

It is likely that the current downturn will cause many manufacturers to look for lower cost locations, and to refocus operations on regions where there is still economic growth. But costs and growth are not the only factors that should drive location strategy: companies should also look at their innovation needs, and at the opportunities for balancing risk in global businesses.

Companies face strong pressures to cut costs and meet customer requirements, immediately. These are important factors, and companies cannot neglect them. Yet as the current downturn shows us, today's location advantages can quickly turn into tomorrow's disadvantages. Now is the time to revisit location strategy, and seek a better balance of risk and opportunity.

* The Economist, 21 Feb 2009

Introduction

In the last two decades the automotive business has become a global, multi-location industry.

The pace of this transition from largely national markets and national manufacturing to global manufacturing for increasingly global markets has been astonishingly rapid and today's economic crisis, accompanied by sharply falling sales and profits, is only likely to speed up this transition as companies seek ways to increase revenues and reduce costs.

Many of the managers who lead today's largest automotive manufacturers – whether OEMs or suppliers – started their careers in an automotive world which began and ended with North America, Europe and Japan. Now those same industrial leaders operate in a world populated by an ever-increasing list of newly emerging economies, some of which did not even exist two decades ago, all clamoring for a place in the global automotive manufacturing network.

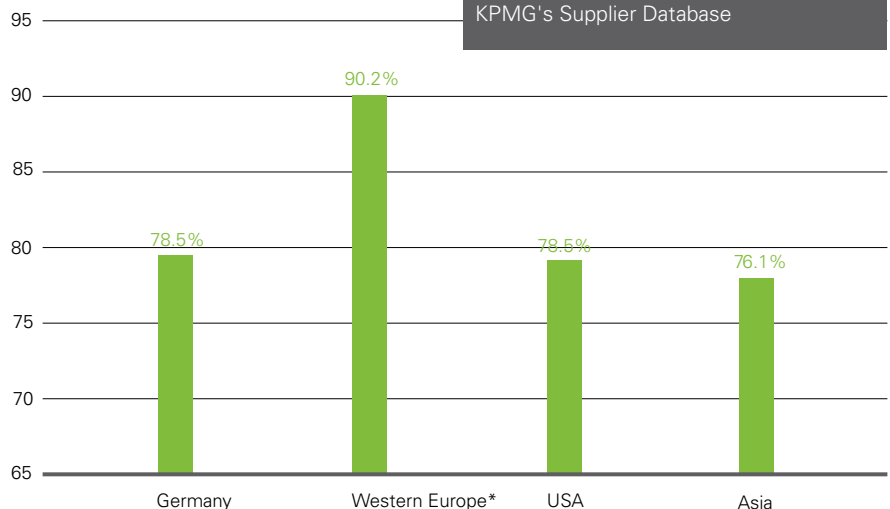
In 2005 KPMG released a study titled 'Global Location Management in the Automotive Supplier Industry.' That report considered how automotive suppliers manage all aspects of an expanded global footprint, from strategy through to location choice, plant monitoring and migration process.

KPMG's 2005 report outlined an integrated approach to location strategy. The present report seeks to explore the idea of integrated strategy more fully.

In this context 'location strategy' means an on-going process through which companies determine which markets to be in - in terms of both geographic and product markets - and

how they align their global footprint to serve those markets. Although related, in our definition "location strategy" is not the same as "location decision," which refers to the process of selecting the actual physical locations to establish new facilities (e.g. manufacturing plants) within a certain region.

Globalization Index
Location spread as percentage of all regions



Levels of globalization
Global footprint of automotive suppliers by originating region, 2008
Source: KPMG's Supplier Database

- Western European suppliers have plants almost all over the world and the highest globalization index (90.2 percent)
- German and U.S. suppliers are almost equally global
- Asian suppliers are slightly less globalized.

* Excluding Germany

Lower risk makes globalization more attractive: it is a 'pull factor'. Higher costs make globalization a necessity: this is a 'push factor'. Costs have also risen sharply. Despite recent falls, the average costs of industrial raw materials and energy are high and likely to remain high. In the longer term the cost of innovation has continued to rise while the return from individual product models has declined. In the context of recession and falling sales in many large economies, companies have to seek ways of achieving drastic improvements in their long-term cost and revenue structures. Globalization of operations remains one of the most important ways of meeting this cost pressure.

Our member firms' conversations with companies suggest that while cost pressure remains a very significant driver of globalization, it is not the most significant. The most important driver of globalization in the auto supplier industry is the imperative of growth. Even amid a global slowdown, the BRIC economies are predicted to continue growing considerably faster than the OECD economies where growth is expected to be barely positive in 2009, according to World Bank forecasts released in December 2008, China is expected to grow by 7.5 percent in 2009, while India will grow by 5.8 percent. The rest of the developing world will grow at 2.9 percent, the World Bank believes. Companies say they need to globalize their operational footprint to capture that growth.

Growth, cost, innovation, and risk are the key factors that we believe influence location strategy. The relations between all four factors create complexities: there is no simple answer to the question of how a company should shape its global operational structure.

In this report we look at companies' own interpretations of the growth, cost, innovation and risk drivers of their

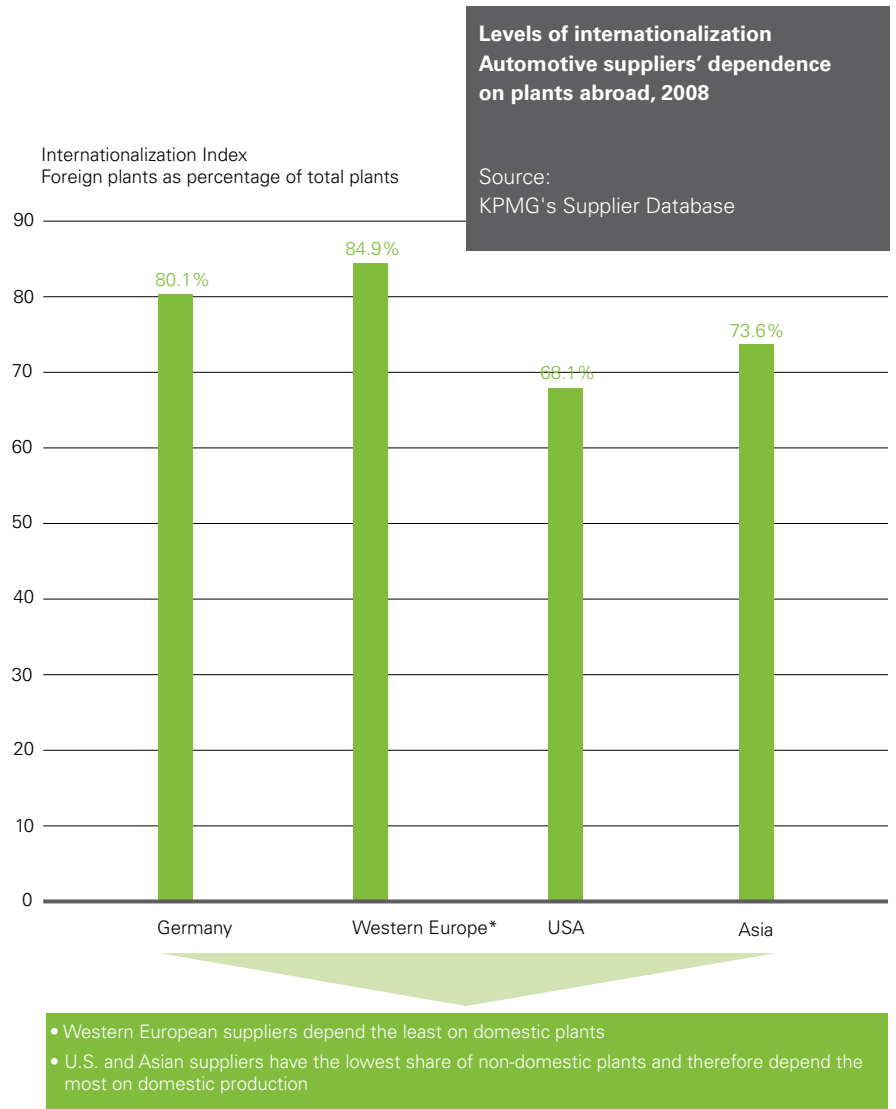
location strategy approaches. We asked suppliers whether they have a defined strategy that determines not only how they enter new markets but also how they align their global footprint with their overall business strategy. We asked them to rate the key factors influencing location strategy, and assessed the roles these factors play for various types of suppliers.

Finally, we sought to determine whether there exist strategic lessons that can be applied across the supplier industry. Drawing such generalized conclusions is always challenging in a populous industry where companies differ greatly by product, by market, and also by culture.

Nevertheless, our conclusion is that generalized lessons do need to be

drawn and learned. If one thing is clear to us from the responses the supplier industry has given, it is that there is a strategic deficit when it comes to implementing an integrated location strategy. This appears to be the result of a combination of large powerful OEM customers, competitive pressures, and rapid globalization of all types of manufacturing operations. Location decisions have frequently been made in an ad hoc fashion, often reducing profit and reducing flexibility.

The automotive industry has achieved much by becoming global, opening new markets, enriching new economies, cutting costs and capturing new technologies. But it could do better.





KPMG member firms believe that an effective integrated location strategy should be able to answer the question ‘what markets must our business be in?’ Strategy informs location decision-making, which will also be determined by customer demands and the degree of flexibility of the manufacturing process. Strategy in turn will be informed by location monitoring which should track the risk and opportunity profile of possible locations, and also by the potential costs and the lessons learned from location migration.

Research for this report was undertaken against a background of increasing opportunity and increasing risk for automakers. Since 2005 the potential of emerging markets as operational locations has grown, as suppliers and assemblers see increasing sales, manufacturing and R&D opportunities in potentially growing markets such as China, India and Russia. Interest in established emerging market destinations such as Brazil has revived. And the traffic of globalization flows in all directions: as we note below, companies in the largest emerging economies are

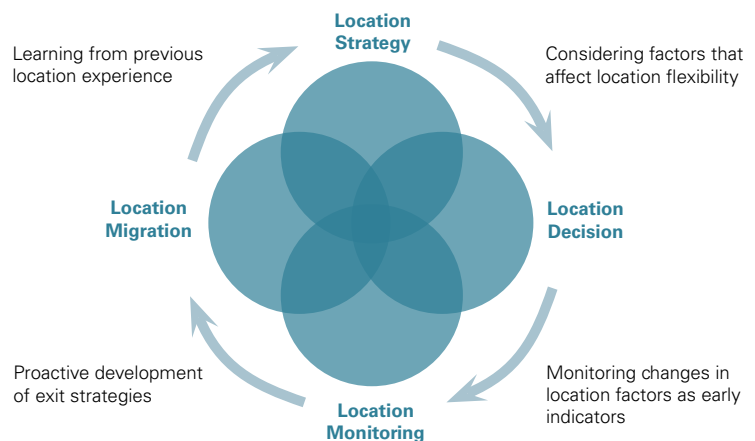
themselves following a strategy of migrating some of their manufacturing and R&D investment into the Organisation for Economic Co-operation and Development (OECD) economies.

This acceleration of globalization has been facilitated by a perceived

reduction of location risk. Brazil, India and China, for example, have all improved their reputations for stable economic management over the past decade. Political and financial risk is now rising once more as the global recession spreads to emerging economies, but it still remains historically low.

Integration of the tasks involved in global location management

Source:
KPMG International 2005 Survey of Global Location Management



Methodology and Sources

This report builds on KPMG's earlier work on automotive location decision-making published in 2005 under the title 'Global Location Management in the Automotive Supplier Industry.'

For the present report KPMG has drawn on three proprietary sources of data, as well as information available in the public domain. The first source is KPMG member firms' in-house auto supplier database. This database holds details of the manufacturing operations of more than two thirds of the world's top 100 automotive suppliers (the data at the time of publication covered 70 companies of which 68 are in the top 100 manufacturers based on annual sales), with coverage of the operations of 4,618 individual manufacturing facilities. Material derived from this database is sourced in the text as 'KPMG's Supplier Database'.

KPMG firms also conducted a location strategy survey among 25 large Tier 1 automotive suppliers, including companies from East and South Asia, Europe and the Americas. Responses to a structured questionnaire form the basis for much of the specific location strategy data in this report, including the majority of the graphic presentations. Material derived from this database is sourced in the text as 'KPMG's Supplier Survey 2008'.

Third, KPMG firms conducted discursive interviews with senior executives with strategy-setting responsibilities in 32 large automotive suppliers. These included the 25 companies that contributed to the location strategy questionnaire, together with seven more companies.

All company comments used in this report are drawn from interviews which were conducted on an unattributable basis.

The Pattern of Globalization

Globalization is nothing new: the automotive industry has been expanding across borders for the last 100 years. Many markets that today are the focus of a 'new' wave of automotive globalization have in fact a long history of participation in auto manufacture. Chevrolet, for example, began manufacturing passenger automobiles in India in the 1920s.

Nevertheless, volume migration of supplier manufacturing is a contemporary phenomenon. KPMG's Supplier Database shows that up to 1980, the supplier industry remained heavily concentrated on domestic production in the 'triad' of North America, Europe and Japan.

This era of domestic production for domestic customers ended quite suddenly after the 1970s, when in the first wave of globalization (roughly 1981 to 1990) manufacturing began to shift from the mature triad regions towards emerging economies in Asia.

Before 1980 automotive companies in the mature triad regions had tended to internationalize, rather than globalize. European suppliers had concentrated on investing across borders within Western Europe. Suppliers in the U.S. concentrated on investing in Europe, and to a lesser extent in Japan. Japanese suppliers meanwhile extended their operations primarily by investing in the U.S.

In the years after 1980, globalization brought a new pattern of investment. This is visible both in the regional patterns of manufacturing plant building and in ownership patterns across regions.

In the first wave of globalization from 1981 to 1990 suppliers in the triad regions began to make investments and build facilities in the fast growing 'tiger' economies of Asia such as

Thailand, Malaysia, the Philippines and South Korea. During this period China, South America and Eastern Europe attracted a very small proportion of total auto manufacturing investment.

During the 1990s, however, the second wave of globalization began to embrace the 'new' emerging economies of Asia – China and India – as well as the developed but neglected markets of South America.

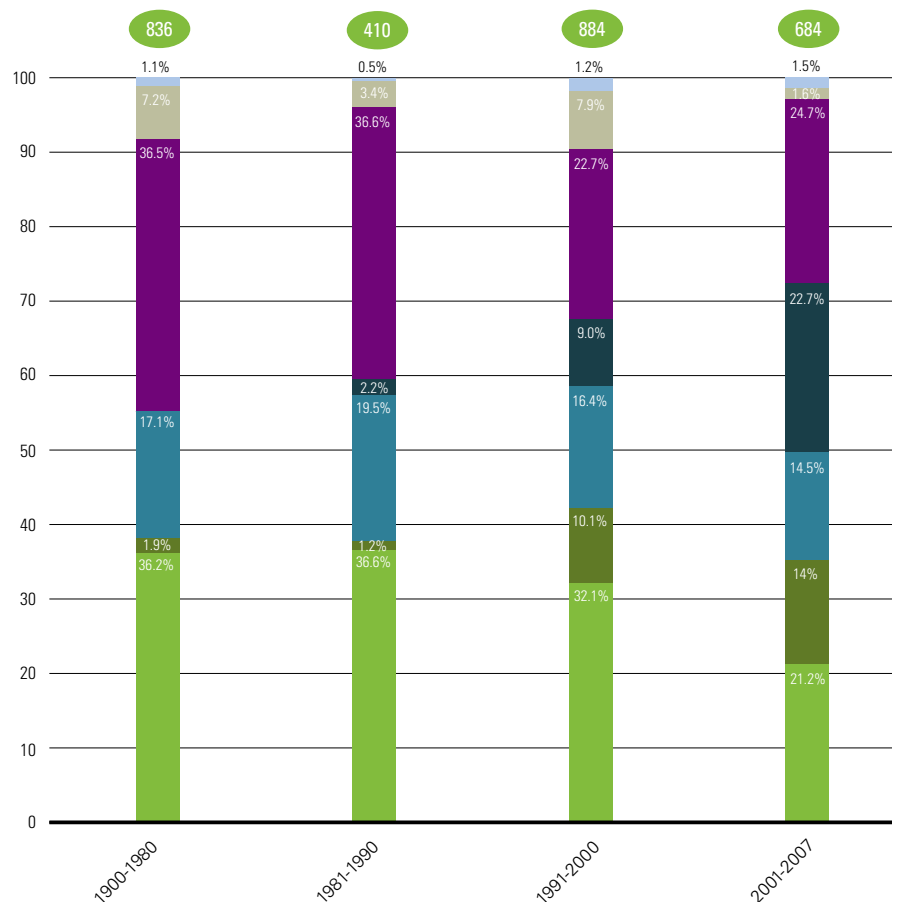
In this period (1991-2000) the number of plants built in China (as a proportion of all plants built worldwide by the 70 suppliers in KPMG's Supplier

Building of plants per time period by supplier origins [%]

Source: KPMG's Supplier Database 2008

Key

- Africa
- South America
- North America
- China
- Asia
- Eastern Europe
- Western Europe
- Number of plants



- Nearly 75 percent of plants built 1900-1980 and 1981-1990 were built in Europe (including Germany) and North America
- From 1991-2000 suppliers built most of their plants (42.2 percent) in Europe.
- The share of plants built in Asia increased rapidly over all time periods and reached 37.1 percent in 2001-2010.

Database) rose to 9 percent from only 2.2 percent during the previous decade. The proportion also rose in South America (from 3.4 percent to 7.9 percent). Yet the biggest rise was recorded by Eastern Europe, where the proportion of all worldwide plant building rose from 1.2 percent to 10.1 percent.

The third phase of globalization, from 2000 onwards, has seen an even greater concentration of plant building in China and Eastern Europe, but at the expense of the rest of Asia, South America and Western Europe. The proportion of plants built in China has risen to 22.7 percent, and that in Eastern Europe to 14 percent.

The pattern of ownership of these facilities confirms the largely cross-border nature of these facilities. As the

chart on page five shows, ownership of regional plants is now widely distributed: while it is still true that U.S., European and Asian suppliers all continue to own and operate the majority of their manufacturing plants in their home region, they also now own a very significant proportion of capacity both in other regions of the triad, and in new markets.

U.S. suppliers remain the most concentrated in their domestic region; nevertheless the proportion of U.S. ownership of all manufacturing facilities in Europe is now close to 40 percent. U.S. suppliers also own the single largest share of supplier manufacturing capacity in India (47 percent) and the second-largest share in South America (42 percent), when compared with Western European and Asian suppliers.

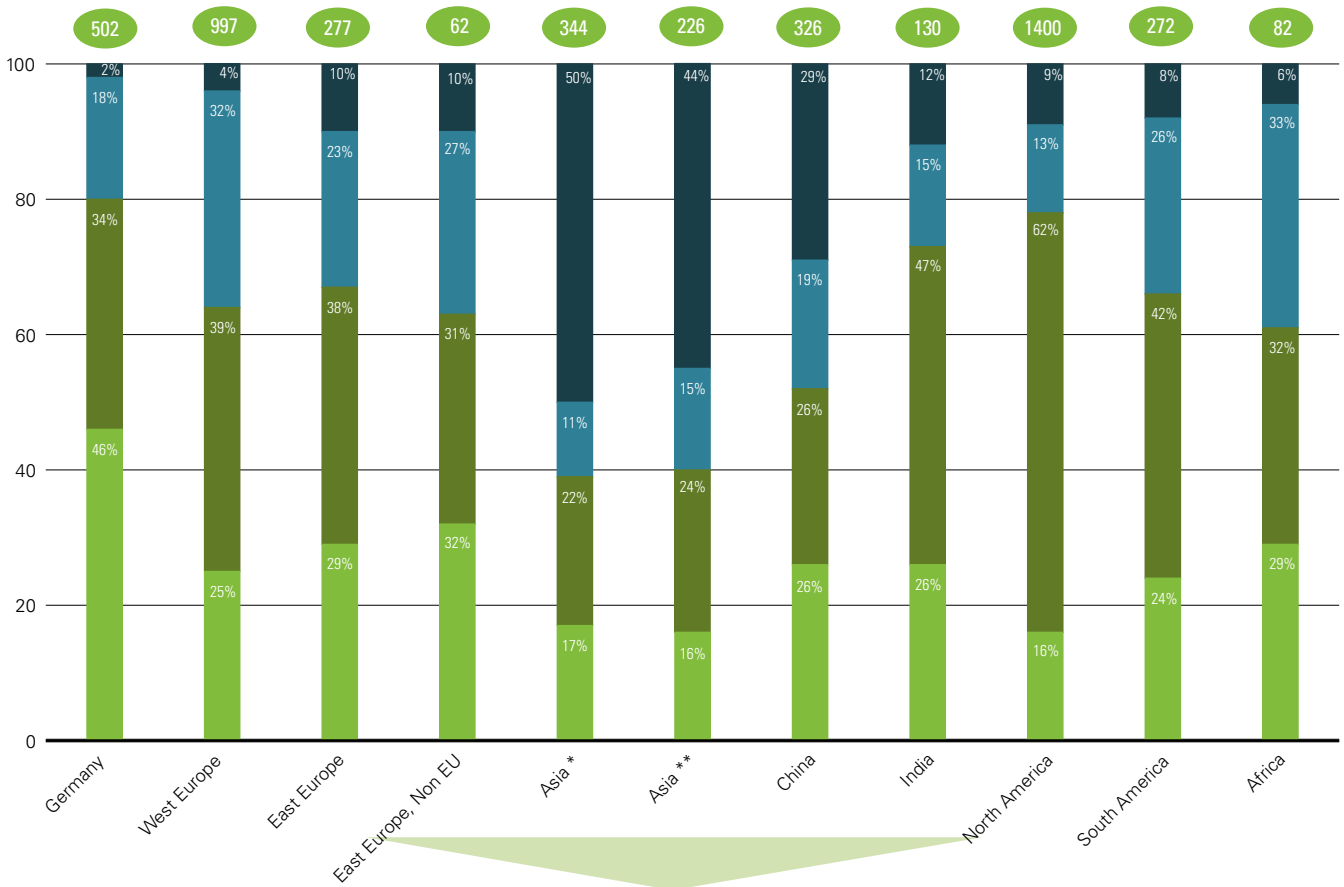
European suppliers' cross-border investment in manufacturing is most concentrated in Asia (for example European suppliers own 45 percent of plants in China, compared with 26 percent for U.S. makers and only 29 percent for all Asian suppliers). They also own 50 percent of plants in South America and 62 percent of plants in Africa.

Breakdown of plants per region by supplier origins [%]

Source: KPMG's Supplier Database

Key

- Asia
- Western Europe
- USA
- Germany
- Number of plants per region



- Domestic production still plays a very important role for the suppliers in the sample (32-62 percent of plants in each region belong to domestic suppliers)
- German and Western European suppliers are well represented over the world, U.S. suppliers are over represented in the home market (62 percent), Japanese and South Korean companies dominate the Asian market, but have lower than average representation in India and have low share of plants in other regions (<10 percent)

* Asia I - Japan, South Korea
 ** Asia II - Rest of Asia

Asian suppliers remain surprisingly little-represented in Western Europe with only 3 percent of plants although investment in both EU and non-EU Eastern Europe is much higher, representing 10 percent of all plants. They are dominant in Japan and Korea ('Asia I') with 50 percent of plants, and also in the rest of Asia excluding China and India ('Asia II') with 44 percent of plants. Asian suppliers own 29 percent of all plants in China, behind Western European suppliers but ahead of U.S. suppliers. In the U.S. itself Asian suppliers account for only 9 percent of the manufacturing stock.

These are the patterns of globalization over the last three decades – a clear trend of the migration of manufacturing across borders, led by European and U.S. suppliers, and, over time, favoring Asia above other alternative locations. Yet how much of this massive relocation of corporate resources has been informed by long-term location strategy, and how much by short-term pressures or tactical relocations, is another question.

The recent history of globalized auto manufacturing suggests that for many companies, robust strategy has been conspicuous by its absence. The most striking case is the relocation of facilities to South America. During the 1990s there was a surge in auto investment in the region – South America accounted for 7.9 percent of all new supplier plants worldwide in KPMG's Supplier Database during 1991-2000, compared with 3.4 percent during the previous decade. In particular, plants were established in Chile, in Argentina, and in Brazil.

Such investment decisions may have been dictated by a lack of market forecasting, or by pressure from OEM clients, irrespective of the outlook for manufacturing in the country or region. In the event, the auto manufacture business in Chile, which was profitable only in the context of direct government support, disappeared virtually overnight when government support was withdrawn. Auto manufacturing in Argentina collapsed in the aftermath of the country's

official debt crisis and default in the late 1990s. In Brazil erratic growth and confidence meant that despite the continuing potential of the market, many companies found they had over-invested.

In interviews, some companies and industry insiders say they see signs that such scramble-to-manufacture conditions may be developing today in other markets, as vehicle manufacturers encourage suppliers to enter markets such as Russia and other non-EU East European locations in order to fulfil local content requirements.

If companies are to manage such pressures and form a viable long-term location strategy, they should analyse the business drivers that determine the real benefits available in specific locations. They should also assess the potential for finding new growth, for cutting existing costs, for facilitating innovation, and for limiting risk.



A Strategic Deficit?

Unsurprisingly, most suppliers we interviewed considered a wide range of factors influencing their global location strategy, and most said they had a location strategy review process (although a significant minority said they did not have such a review process).

A Chinese supplier, for example, said 'we review our location strategy and plan once a year. However, we also formulate a five year plan as well. The business development department organizes the meeting to decide the location strategy. We analyze the strategy for new market entry and the location of our plants. We evaluate the cost, resource access, potential customers and market size of the new location. Every year we also review the production process and network.'

Many companies prefer to focus on just a handful of factors, and they are usually similar factors. For example, an Indian supplier comments 'the most important criteria that we review are the fiscal benefits of relocating to a particular region or country. We would try to judge if costs are rising or falling within a particular geography. We also try to evaluate our ability to hire and retain talent within a particular geography.' Some even outsource the process of forming location strategy: a Canadian supplier says 'we hire a consulting firm in order to help us identify a region where it would be beneficial to set-up operations. After evaluating various parameters with officers and executives within our company the results are finally presented to the board of directors who make the final decision.'

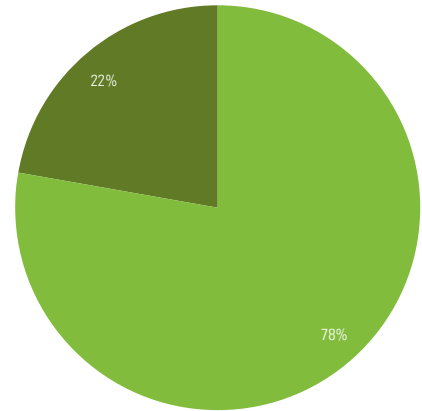
However, while companies are clearly reviewing many factors that may shape a location decision, they rarely articulate a need to integrate such reviews into the wider business plan. A U.S. supplier comes closest, saying 'we start by performing a sourcing analysis. We review the landed cost and the opportunity cost. We also review the location pattern of our customers, the volume of sales that we can generate and the cost of supplying to our customers. Therefore, we would review the cost structure and potential market growth before making the final decision.'

Do you have a regular planning and review process for your location strategy?

Source: KPMG's Supplier Survey 2008

Key

- Yes
- No

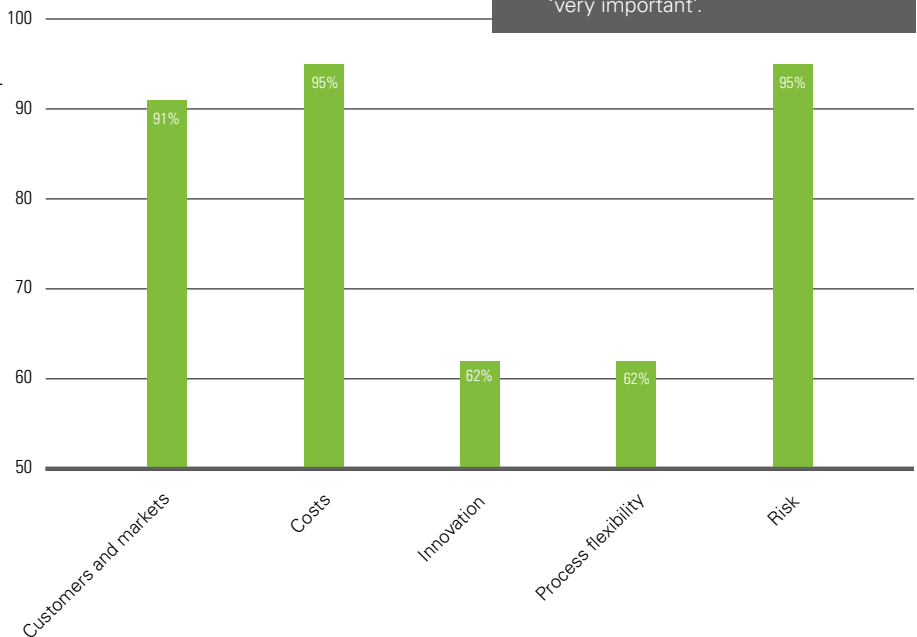


How important are these criteria in forming location strategy?

Source: KPMG's Supplier Survey 2008

Key

- Percentage of respondents answering 'important' or 'very important'.



Location Driver: Growth

The search for growth is a primary driver of manufacturing relocation. Emerging economies have significantly higher trend rates of growth than mature economies: this is the inevitable result of the arrival of large-scale capital investment in low-wage and low-cost economies.

This growth differential has been growing more acute in the recent period. As many U.S. and some European economies began to slow during 2007, and in many cases to move towards recession, the relative strength of emerging economies has become more apparent. While the U.S. and several European economies struggle to register growth rates that are positive, China, India and Brazil all continue to grow at rates well above the world GDP growth average.

This growth differential is a powerful incentive for globalization in the automotive industry – an industry challenged by low sales growth and

declining margins in mature markets. The world’s automotive assemblers want to capture market share in the fastest growing markets of the near future – and they want their chosen suppliers to be with them. Suppliers for their part also want to be part of the growth story, serving not only their traditional global OEM customers but also the emerging local auto makers who are capturing new markets with low cost and often innovative products, such as China’s Chery Auto and India’s Tata Motors.

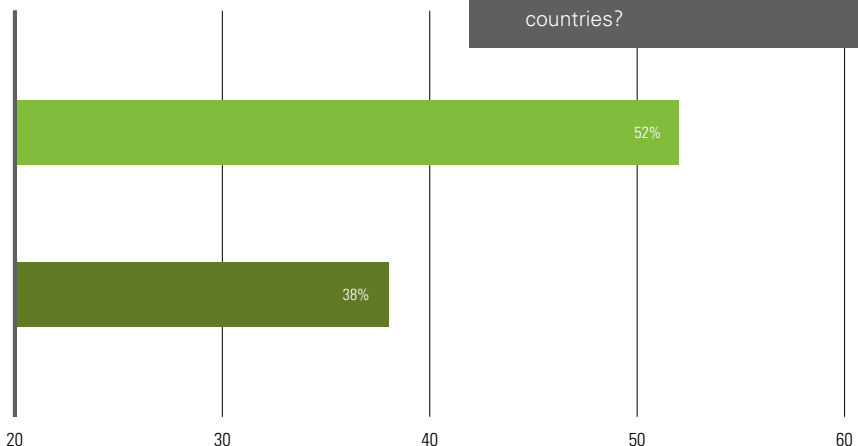
As one German supplier puts it: ‘those who don’t grow won’t survive.’

Finding growth: follow the customer.

The Tier 1 suppliers that participated in the KPMG’s Supplier Survey are likely to experience more client pressure to relocate than lower tier suppliers, as Tier 1 products are generally more sensitive to distance from assembly operations.

‘How physically close you have to be to your client depends a lot on the characteristics of the product,’ says a German Tier 1 supplier. ‘We consider that if you need to deliver ‘just in time’ products you can still be up to 200 kilometres from that client. But if you need to deliver ‘just in sequence’ that

Percentage of respondents answering ‘yes’.



Do your customers exert pressure on you to: manufacture in close proximity / manufacture in low-cost countries?

Source:
KPMG’s Supplier Survey 2008

Key

- To manufacture in close proximity?
- To manufacture in low-cost countries?

means you cannot be further than five kilometres.'

A small majority of these suppliers report that they do experience pressure from their OEM clients to follow them to low-cost country locations. Suppliers producing customer-specific products are most likely to report client pressure; global commodity suppliers consider cost and quality the most important factors in determining location, but 60 percent of those suppliers also report customer pressure to relocate. Such suppliers must balance the costs of client dependence with the advantages of participation in what are potentially growth markets.

'It was when we followed a German vehicle maker to Brazil that we realized that you have to avoid building a plant for one customer, because of course the business declined,' says a German supplier. 'You have to spread your risk more widely if you want to be able to offer quality'

This same supplier adds: 'the risk of dependence is why we have not built a plant in China. We do not want to

be dependent on another German vehicle maker, and we could not be confident of sufficient orders from other customers. The customer wants us there, but suppliers can say 'no' if they want to.'

Despite the risks associated with customer dependence, our interviews suggest that this remains the dominant pattern of migration for some companies, and particularly Japanese companies. 'Existing customers should be retained,' says one large Japanese supplier. 'Japanese OEMs generally produce in the region where they sell – suppliers must follow them.'

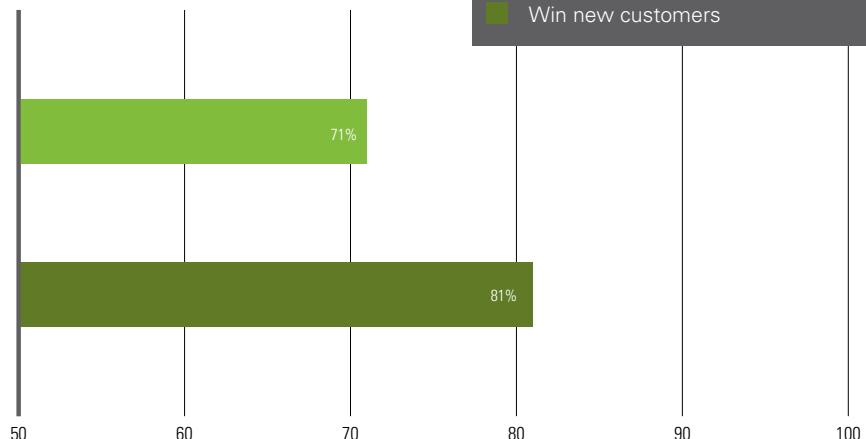
Finding growth: winning new customers. Among companies participating in the KPMG's Supplier Survey, importance was attached almost equally to winning new customers and serving existing customers. However, it also appears that companies building or acquiring new manufacturing capacity in China and in India appear to be less concerned about proximity to existing customers than companies in other markets (a fact that may well be

ascribed to the relatively high growth rate in both economies).

Some companies do enter new markets entirely focused on winning new customers, although this is rare. 'When we went to the U.S. we did that without any guaranteed customer orders,' says a German Tier 1 supplier. 'We considered that this was a market where we actually needed to invest first, and then get orders. We needed to have production facilities in place so that customers could visit us. And the result was that we have carved out a 100 percent market share in our niche in North America.'

Other companies and particularly Japanese companies take the opposite approach. 'The first criterion is to follow the customer,' says a Japanese supplier. 'It is only later that we might look for new customers. For example, we supply Suzuki, Honda and Toyota from our facility in Central and Eastern Europe. It is only later that we will try to sell to European OEMs as well.'

Percentage of respondents answering 'important' or 'very important'.

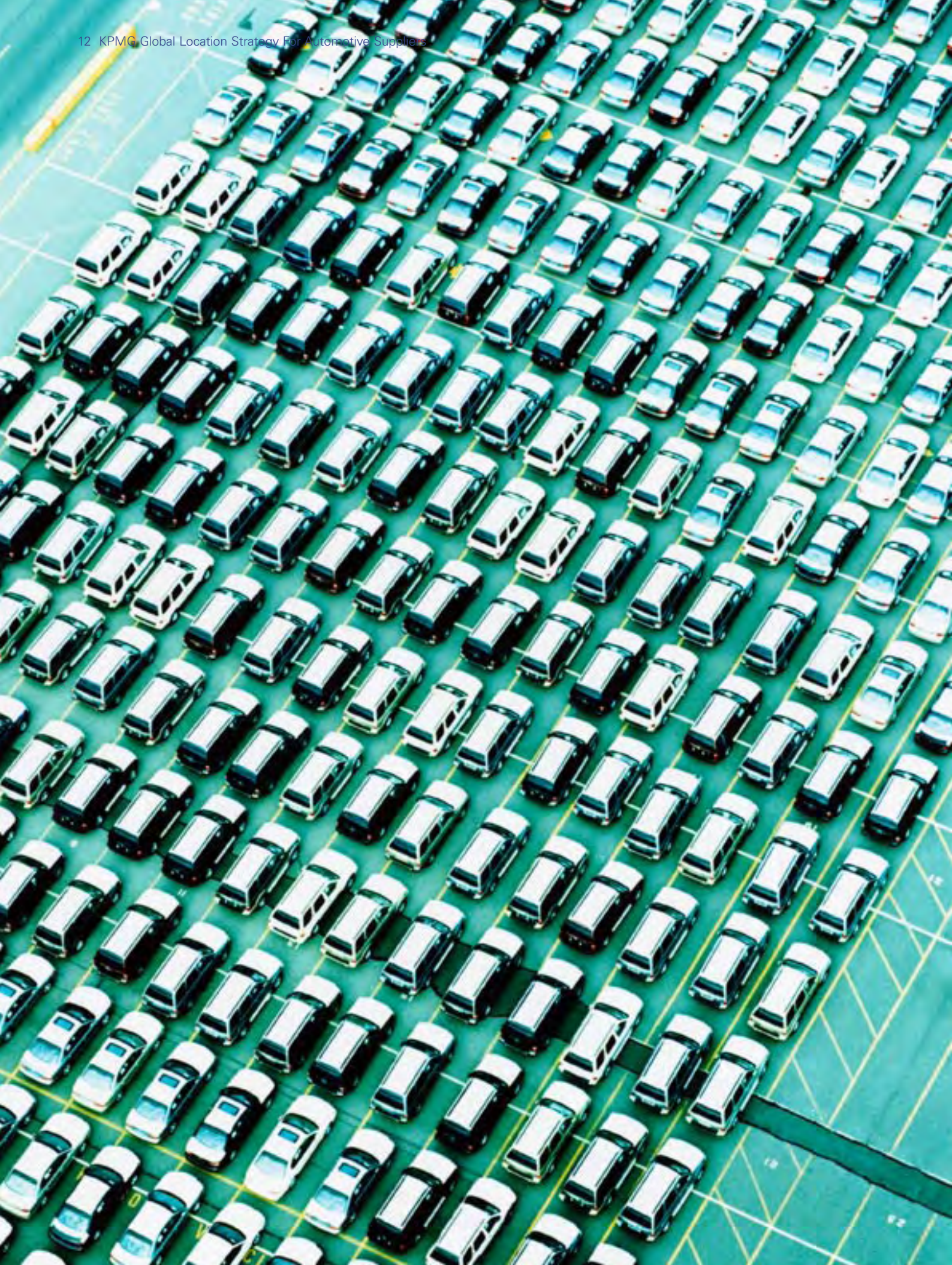


How important are these factors when setting up a plant in a new country?

Source:
KPMG's Supplier Survey 2008

Key

- Follow existing customers
- Win new customers



Location Driver: Cost

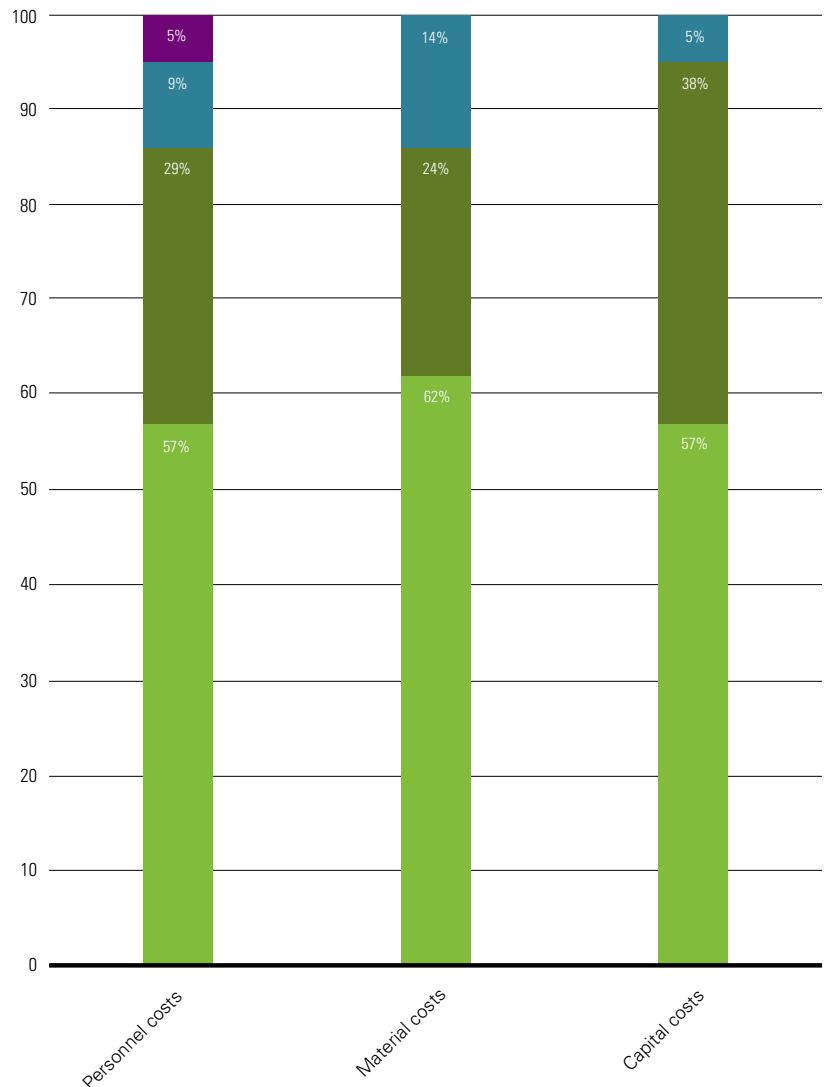
It is a truism that automotive manufacturers need to reduce costs year on year, and that this need is transmitted directly to suppliers. For example a European Tier I supplier of passenger car assemblies with over U.S.\$3.5 billion of annual sales says that 'our customers insist we reduce costs every year. Customer demands mean that we have to take millions of euro out of our cost structure every year'.

How important are these cost savings when establishing plants in foreign countries?

Source:
KPMG's Supplier Survey 2008

Key

- Not important
- Less important
- Important
- Very Important



The KPMG's Supplier Survey shows that cost is only one motivating factor for companies entering new markets: expansion decisions are also driven by the need to grow, by the need to capture skills and technology, and by the need to reduce or hedge financial and operational risks. And for companies that report that they are primarily motivated by cost considerations, optimizing existing production facilities may be more important than relocation of production.

Cutting costs: production optimization is more important than relocation. Almost all companies participating in the survey consider that production optimization in existing operations is a more important cost reduction strategy than relocation. For example, a German supplier with production in Hungary, Ukraine, China and Mexico says 'relocation for cost optimization is a largely exhausted strategy. In the future the focus will be more on process optimization.'

Cutting costs: materials cost in new markets is the key opportunity. Among those companies that are primarily motivated by costs to invest in new markets, the opportunity to

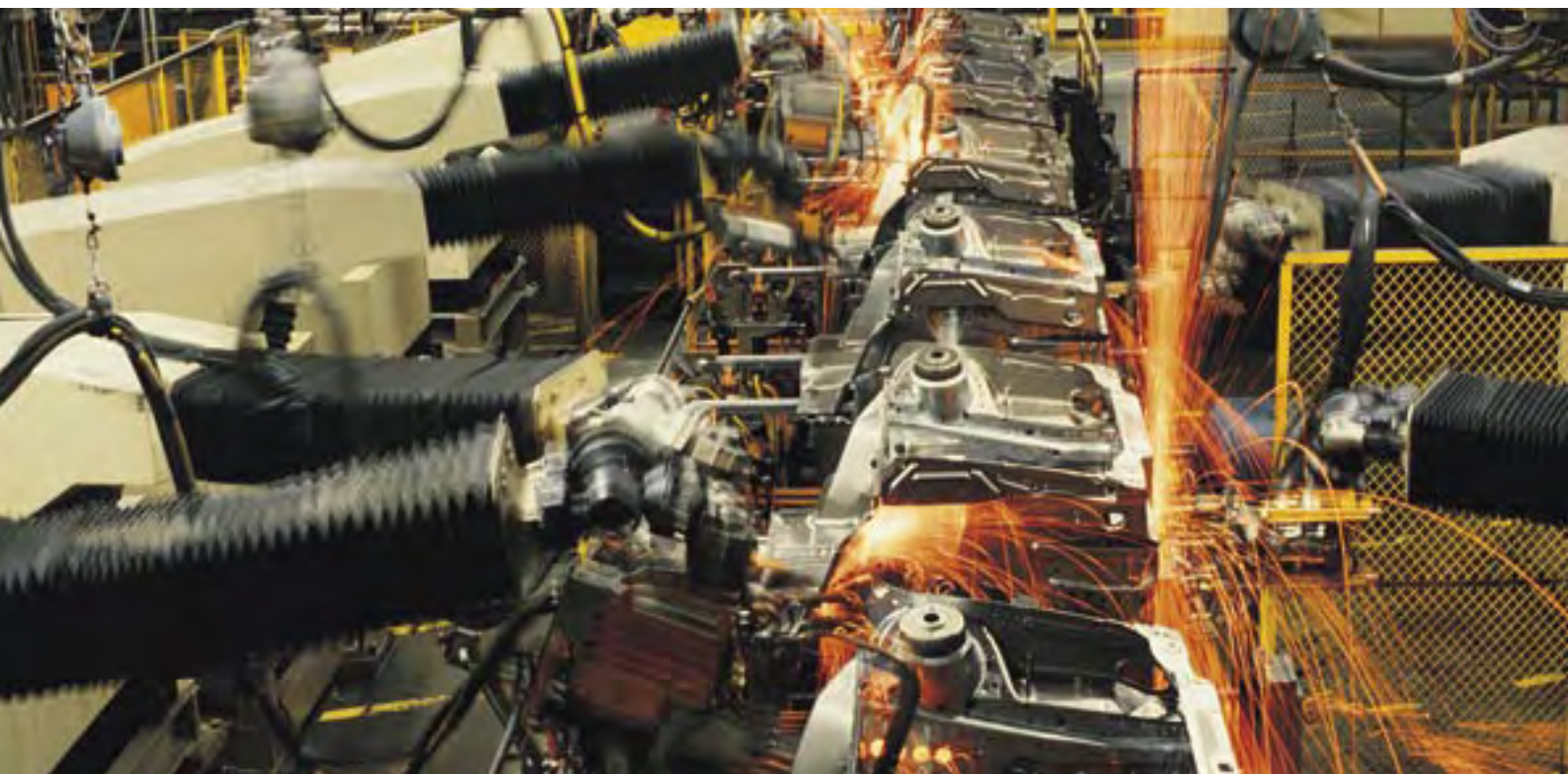
lower material costs is considered marginally more important than labor or capital costs. This surprising result reflects the fact that companies still find that the costs of internationally traded raw materials and partially processed commodities such as automotive steel remain cheaper in some lower-cost economies. 'The most important supply-chain consideration that we include while determining our location strategy is the cost of production, including the cost of raw materials,' according to one Indian supplier. Yet companies also note that such cost advantages are by no means guaranteed in emerging markets. A U.S. supplier comments 'we usually expect cost savings in all areas such as energy, land, labor, local government incentives, and local sourcing of cheaper materials. However sometimes due to opportunity costs such as decrease in materials quality, we were not able to achieve all the planned cost savings.'

Cutting costs: logistics cost in new markets is the key constraint. Companies remain concerned about the cost of complexity that may be introduced when operations become distributed over several locations that

may be separated by large distances, and may be in numerous jurisdictions. 'Labor cost advantage usually comes with logistics cost disadvantage', says a German Tier 1 supplier, while a U.S. supplier adds that when entering new markets the key concern is 'supply-chain factors such as inbound transport costs in the case of raw materials and outbound transport costs to get the product to the customers. We also consider the capacity of the overall infrastructure to handle the total production volume.'

The companies interviewed also cite a wide range of other cost drivers of relocation. These include government incentives, regional interest rates, wages and trade agreements. An Australian supplier comments 'it will ultimately depend on... the lowest landed cost. For example, the FTA* between Australia and Thailand may make this the lowest landed cost location. If an FTA did not exist, China may offer the lowest landed cost.'

* FTA Free Trade Agreement



Location Driver: Innovation

The relative importance of innovation as a location driver is increasing.

In part, this is due to the increasing role of product innovation in the automotive industry; over the last 10 years the pace of innovation has accelerated and the degree of innovation-dependence has grown. According to a study of the Asian automotive industry from the Asian Development Bank, a vehicle manufactured in 2000 had on average double the number of electronic functions of a vehicle manufactured in 1990¹.

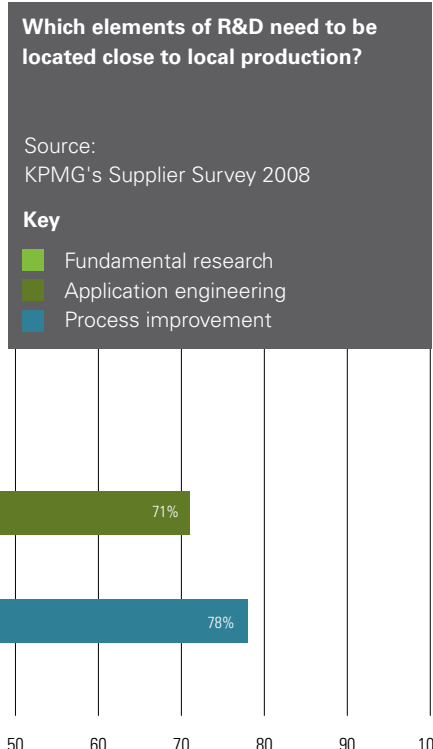
While innovation has intensified, the sales volume to support the costs of this product innovation has failed to materialize. In the U.S., for example, average annual sales per vehicle fell by one quarter between 1980 and 1999². Price and income trends mean that sales volumes are unlikely to be rebuilt in the developed industrial markets – on the contrary, they are likely to fall further. In these markets the average price of a new car has doubled over the last 20 years, but average incomes have only risen by 50 percent – and this price-income gap continues to widen³, implying further falls in sales volumes if costs cannot be cut.

These trends are driving a multi-directional globalization of innovation in the supplier industry. Established companies in the automotive triad need both to cut the costs of innovation, and find new sources of technology and process innovation. Suppliers in emerging economies need to acquire rather than just develop technologies and R&D skills in order to gain the innovation critical mass that will allow them to compete as global suppliers.

Companies participating in the KPMG's Supplier Survey divide roughly equally between those who believe that R&D should be located close to production, and those who are happy with geographically separated R&D and production. These responses suggest that a minority of companies plan to relocate R&D to emerging markets, despite cost pressures.

Companies who believe that R&D should be located close to production tend not to be planning R&D

relocations. They believe that R&D for process improvement is more important than R&D for application engineering, and their R&D centers are most likely to be located in Western Europe and Asia, followed by North America. In contrast, companies willing to operate R&D centers remote from production are predisposed to relocate production facilities, although most of these companies say that innovation is a less important criterion than cost, growth, or risk.



1: The Automotive Supply Chain, Global Trends And Asian Perspectives ADB Jan 2002
 2: Asian Development Bank
 3: Car Innovation 2015, Oliver Wyman, 2007



Making Local R&D Work

Although results from the KPMG's Supplier Survey suggest that automotive suppliers remain conservative about shifting R&D to locations remote from the economies where they are headquartered, some of the most innovative technology achievements in the industry have come from just such globalized R&D networks. The record of some leading companies suggests that the rewards of truly globalised R&D can be commensurate with the risks.

In the case of the Tata Nano low-cost car due to be released in the Indian market during 2009, a large number of European suppliers developed or re-engineered technology locally to meet Tata's goal of producing a modern vehicle costing no more than U.S.\$2,500. Germany's Bosch, for example, redesigned existing products including the starter motor, electric

generator and electronic ignition, splitting development between its design centres in Germany and India. Another supplier, GKN, spent a year using design engineers from France, Italy and India who collaborated to design a driveshaft specifically for the Nano.

In Indian operations suppliers' R&D capabilities remain largely focused on adaptation and localization. In Brazil, however, where alternative fuels such as ethanol have been widely available since 1979 when the first 'flex-fuel' (gasoline and ethanol) vehicles were introduced, supplier R&D in the local market has been considerably more intensive. The present generation of flex-fuel engine management technology was first developed by Bosch in Brazil, and developed further by the Brazilian subsidiary of Magneti Marelli, now part of Fiat. Delphi Automotive Systems has also developed a comparable technology

at its Brazilian subsidiary. All three suppliers have announced a new generation of flex-fuel technology that eliminates the need for a secondary gasoline supply to start the vehicle, due for introduction in 2009 – the Brazilian subsidiary of Magneti Marelli winning one of the 2008 Automotive News suppliers' innovation awards for the R&D work involved.

The responses suggest that companies remain conservative on R&D location; in most cases they are not ready to relocate R&D to emerging or low-cost economies. Where companies have relocated R&D or plan to do so, they remain reluctant to relocate fundamental research; they are more likely to relocate development functions designed to localize production.

Relocating R&D: for most suppliers domestic location remains dominant.

Few companies tell us they are planning to invest in R&D facilities far from their home markets; even investments in near neighbors with comparable cultures are treated cautiously. For example, a Japanese supplier plans R&D in China because the company feels that China is too big to ignore: ‘we are currently considering setting up an R&D center within China,’ concedes the company. ‘This is primarily because of the potential market size in China.’ And where companies do plan in principle to invest in localized R&D, they prefer that R&D function to remain limited in scope. One of the largest U.S. automotive suppliers says ‘an R&D function ... close to local production must be specific to the type of manufacturing plant that is set up – for instance, we would ... have an R&D center on process improvement close to a unit that has an assembly line.’

Relocating R&D: emerging market companies want globalized R&D.

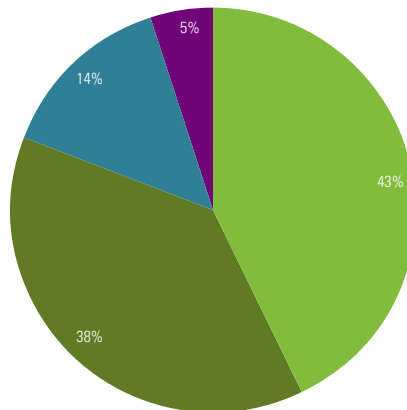
Suppliers in emerging markets take a diametrically opposed view: they want to capture skills and technology by buying or locating R&D resources in developed economies. An Indian supplier says ‘we would look to set up R&D centers within developed countries such as Japan and some parts of Europe.’ And a Chinese supplier adds ‘we would like to set up an R&D center within Italy, France or the United States since there are large companies in our business in Western Europe and North America. This would enable us to learn new technologies and would help us get many global insights.’

In shaping the location structure, how important is currency hedging / resource hedging?

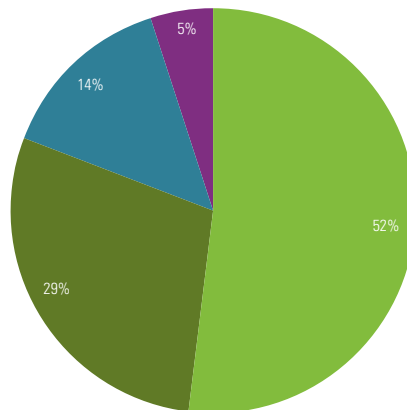
Source:
KPMG's Supplier Survey 2008

Key

- Very Important
- Important
- Less important
- Not important



Currency hedging



Resource hedging

Location Driver: Risk

Suppliers taking part in the KPMG's Supplier Survey consider risk to be one of the costs of locating in new or emerging markets, and not one of the opportunities.

Although the KPMG questionnaire asked open-ended questions about risk in the context of location strategy, companies chose to answer as if risk was endemic in new and emerging market location choices. While most companies rated both resource hedging and currency hedging as either 'important' or 'very important', in discursive interviews it became clear that companies saw resource hedging as a way of mitigating new location risk rather than an opportunity to mitigate existing risk in the business.

Most companies believed that globalization was inherently risky: for example, an Australian supplier said that 'emerging markets are still developing, and we don't think there would have been the same cost savings available in the past.' This same supplier added 'our OEM customers exert pressure for us to be globally cost competitive – they want whatever

scenario gives them the lowest cost and most manageable risk.'

Risk assessment: political, financial and currency risks are all low on companies' agendas. In responses to questions in the KPMG's Supplier Survey and in subsequent interviews, KPMG found that although companies considered that globalization was risky, key risks were not identified in detail, or evaluated. Political risk, currency risk or overall financial risk were conspicuous by their absence in corporate assessments of location strategy. When asked what information was critical to making investments in new locations, only 12 percent of companies mentioned information relating to political or economic risk factors. A German supplier said 'political and legal aspects contribute to the profitability calculation in the form of risk discounts ... we invest in interesting markets if that profitability calculation is good,' while an Indian supplier listed 'political stability' along with costs and tax incentives, and a Malaysian supplier listed 'political stability' along with labor costs and regional demand.

No company reported having an explicitly risk-adjusted investment strategy; most often companies reported making opportunistic investments based on a 'default setting' of the most optimistic risk assessment. The conclusion that many companies lack a risk-adjusted investment strategy is inescapable.



Strategic Approaches

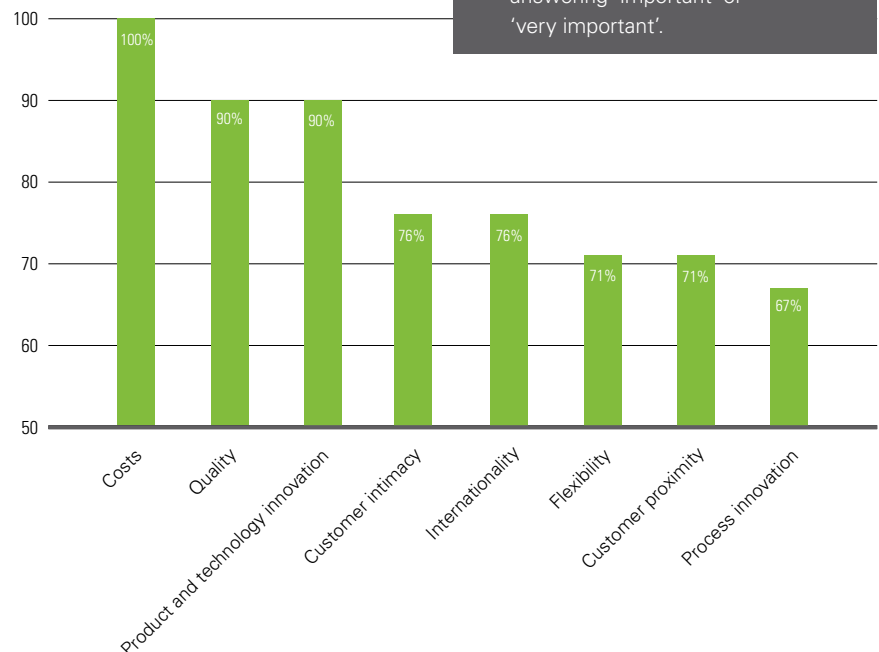
The KPMG's Supplier Survey suggests strongly that there is a strategic deficit among supplier companies extending their operations across borders. Companies are driven primarily by growth and cost considerations; they are finding an increasing need to exploit the innovation opportunities of new locations; in a few cases they see globalization as a risk management opportunity. But in very few cases do they appear to form an integrated strategy that would embrace all of these globalization drivers, with the aim of developing a balanced global footprint that would be resilient in the face of changing conditions.

For example, when asked what was the most important information they evaluated in the formation of their strategies, companies typically cited a range of current growth and cost indicators that might make any location attractive, but in very few cases cited forecast information that might take account of future alterations in the attractiveness of locations. An Indian supplier, for example, said that the most important information to be evaluated was 'the customer base and competitive factors based on availability of raw material and skilled resources.' A Canadian supplier said that the most important criteria were 'the availability of cheap labor and the return on investment,' while a Korean supplier said that 'the most important factors that we consider are the availability of low cost raw materials and labor.'

These comments are typical of the responses given in the KPMG's Supplier Survey. In most cases companies view potential locations on a 'single country' view, and do not evaluate them in a regional or global business context. They focus on a best case of cost and growth opportunities

in a specific location, and in some cases on innovation opportunities, but seldom review risks to the best case.

How should companies refine location strategy into something that adjusts for risk and will yield a balanced global footprint that will be resistant to events and cycles?



Based on the responses given to our survey of suppliers already operating globalized operations, KPMG believes that companies should consider enlarging their strategic approach in a number of ways. In particular, companies should:

- **Balance external business drivers of their location strategy.**

Companies say they are driven to expand operations across borders by the need to find growth, to reduce costs, to facilitate innovation and to manage risks. Yet in many cases the upside and downside of all these factors may be more subtle or less clear than companies commonly suppose. Where markets offer the promise of **growth**, companies should consider how consistent that growth will be over the term of the investment. They might consider whether it is necessary to locate in a given economy or even region to access the expected growth. Where companies seek to reduce **costs**, they should also consider whether direct cost reductions in areas like labour and raw materials are accompanied by indirect cost increases in areas like logistics and quality assurance. Where companies seek to facilitate **innovation**, they should consider whether risks and costs are best balanced by a conservative strategy of centralized R&D or a radical strategy of globally distributed R&D. And in seeking to manage **risks**, companies need to understand that globalized operations may offer risk mitigation opportunities through the hedging of production, currency exposure and raw materials sourcing, as well as the increased risk challenges inherent in global operations.

- **Consider the contribution of internal strengths and limitations.**

There is no one way that companies should go about forming a strategy for globalization, because companies are different. An understanding of

the intrinsic nature of the company should contribute to the formation of strategy: a company with a strongly centralized structure or command-and-control culture is unlikely to be successful with the same kind of globalization strategy as a decentralized organization with widely distributed decision-making. The intrinsic nature of the business should also contribute: some automotive suppliers may manufacture complex assemblies with many variants that need to be sequenced exactly and demand very close geographical links with OEM clients, while others may manufacture generic products that do not demand a specific geographical presence. Other factors such as the capital intensity of the business, the degree of reliance on other suppliers and the need for skills and stability of workforce will also shape strategy according to intrinsic business demands.

- **Consider the relative values of entry and exit strategies.** Risks and costs must determine the entry and exit strategy, say companies: where risk is high, whether due to untested markets or an untested operating environment, costs need to be correspondingly low. Where revenues are better assured, companies may make larger and more long-term investments. Greenfield investments are the preferred entry strategy for the majority of companies surveyed in this report, as they offer full control: 'it is easier to control operations if the plant is fully owned by our company,' says a Japanese supplier, while a Chinese company comments 'greenfield ... helps us to avoid a culture conflict with acquired companies.' However, greenfield investment may be costly relative to other options, not least because of the time needed to establish profitability. Acquisitions are potentially cheaper, as most acquired companies come with an immediate revenue stream. 'We prefer

acquisitions as we automatically get the customers, resources and the track record of the company,' says a South African supplier. The company adds 'I feel that greenfield would end up in a long battle for the company to establish itself.' However, suitable acquisition targets may be hard to find in emerging markets, and acquisition risks may be high: a German supplier comments that 'takeover risks may be critical, due to the lack of accounting standards in some Indian, Chinese and Russian companies.'

Conclusion

The combined results of the KPMG's Supplier Survey and KPMG's Supplier Database show that the cycle of globalization of automotive supplier operations is continuing. Suppliers are both expanding operations across borders, and moving existing capacity across borders. Yet there is evidence that they continue to do so in an ad-hoc fashion that may not fully adjust for both the risks and the opportunities of globalization. Many companies continue to exhibit a strategy deficit.

There are many possible reasons for such a non-strategic approach. The reason most often cited by suppliers themselves is that OEM customers often ask suppliers to relocate near new OEM plants irrespective of the supplier's overall location strategy.

Yet some suppliers say that companies sometimes overestimate the significance of customer demands for given location decisions. 'It is not correct to suppose that OEMs always dictate terms to suppliers,' comments a German supplier. 'For example the OEM may be willing to accept higher prices because they want their suppliers to survive. Where there is a conflict you can usually find a solution that accommodates both parties.'

Lack of information, excessive optimism, and unfamiliarity with the principles of global manufacturing strategy may also play a role. It is also possible that the relentless growth of new markets over the last five years has helped persuade companies that almost any location strategy that exposes them to high new-market growth and low new-market costs is likely to succeed.

If so, the financial and economic turmoil of recent months should serve as a reminder that location strategy needs to adjust for risk as well as opportunity.

No location in the world has proved to be immune from the effects of the downturn and the freezing of financial markets: sources of long-term capital have dried up, costs of current financing have risen, currencies have gyrated wildly and automotive demand has collapsed. These are all risks that can be anticipated - at least in principle - by a balanced location strategy. And as companies look forward to the likely shape of the recovery, strategic positioning will be vital if opportunities in both restructuring industries and recovering markets are to be captured.

An integrated strategy is one that balances the sometimes competing drivers of growth, costs, innovation and risks. It should consider the advantages and disadvantages of location decisions in the light not only of the intrinsic nature of the business, but also the intrinsic nature of the company. And it can help companies consider the long-term costs and returns of individual entry and exit approaches to global investment.

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