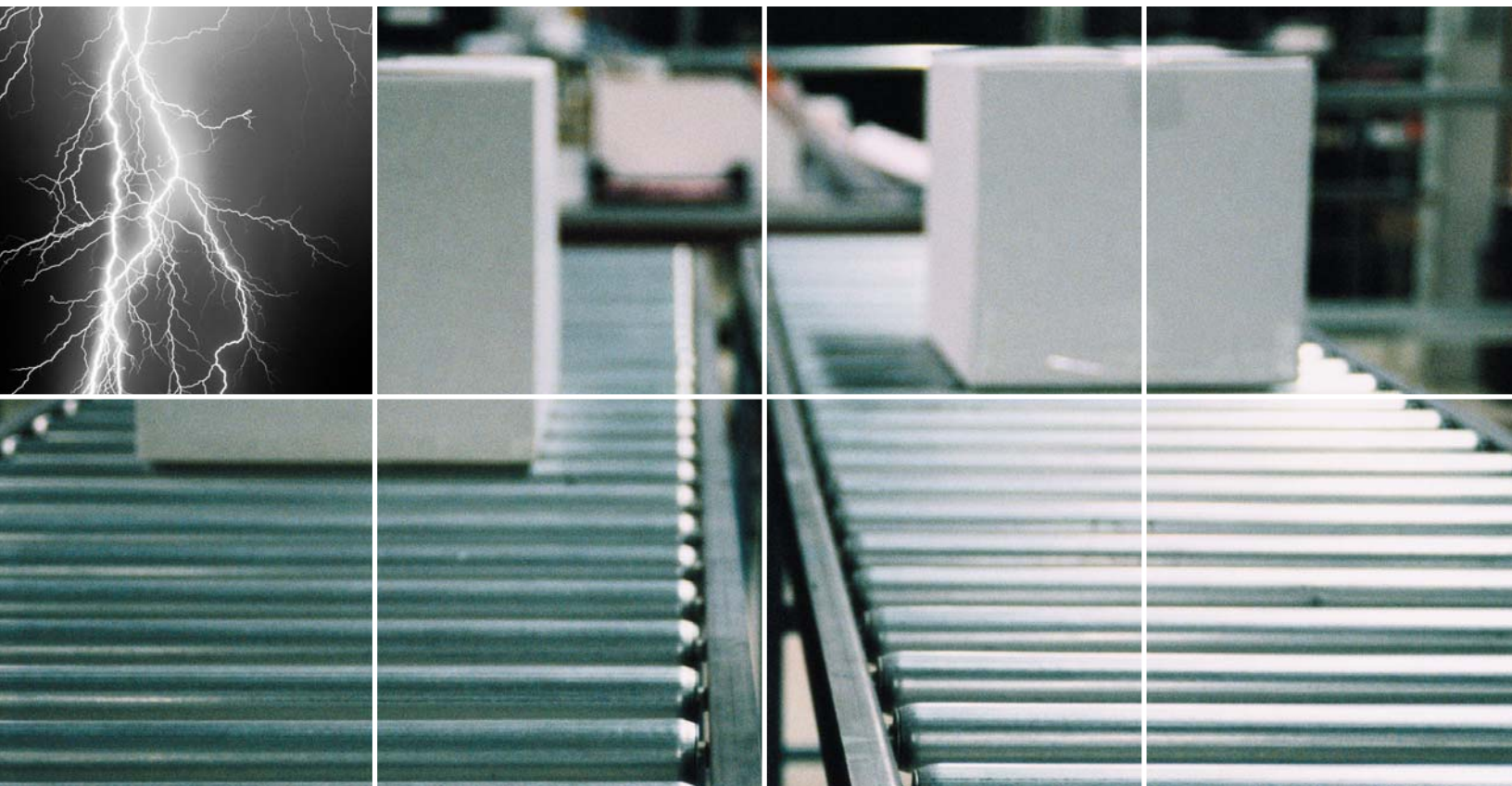


## **Energize your supply chain network – A European perspective**

*New competitive advantage from existing investments*



*An IBM Institute for Business Value executive brief*

IBM Business Consulting Services, through the IBM Institute for Business Value, develops fact-based strategic insights for senior business executives around critical industry-specific and cross-industry issues. This executive brief is based on an in-depth study by the Institute's research team. It is part of an ongoing commitment by IBM Business Consulting Services to provide analysis and viewpoints that help companies realize business value. You may contact the authors or send an e-mail to [iibv@us.ibm.com](mailto:iibv@us.ibm.com) for more information.

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## Introduction

IBM Business Consulting Services conducted the 2004 IBM European supply chain survey in partnership with *L'Usine Nouvelle* magazine. This survey identifies current practices, captures significant trends and establishes operational performance benchmarks in five key areas of supply chain management (SCM): new product development, supply chain planning, customer order management, procurement and logistics.

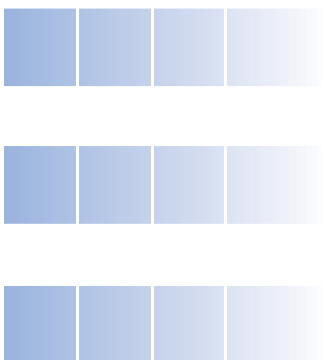
IBM and *L'Usine Nouvelle* have identified potential participants (based on the function in their company) and invited them to participate in the relevant on-line survey. Over 8,000 *L'Usine Nouvelle* subscribers throughout Europe have been contacted by the magazine to participate.

Surveys included 18 to 24 questions about overall business objectives, enabling technologies and current practices, as well as core performance data, such as level of resources (full time equivalent), cycle times or efficiency rates. There were a total of 1,174 respondents, the majority from the consumer products and industrial products industries, with limited representation from distribution and transportation, high technology, energy, services, retail and wholesale industries.

This major research project was performed to better understand where SCM is today in Europe and how it is evolving. This report places the research findings into an overall context and provides perspective on the continuing evolution of supply chain management principles.

## Executive summary

Supply chains are facing broader and deeper challenges than ever before. Traditional supply chain business models are giving way to the emergence of new horizontally integrated, high-performance, on demand supply chain networks. These new supply chain strategies open up competitive advantage opportunities to those able to execute with partners at a high level of performance. Companies that will not energize their supply chain through implementing new and innovative business models may face significant obstacles to delivering expected profitability on a long-term basis. Supply chain executives and managers identified three areas of focus: profitability, performance and partnership.



*Profitability* has become the new top objective of SCM. Pure cost reduction and pure revenue increase are secondary objectives if they do not lead to increased profitability. The quest for profitability is demonstrated through supply chain initiatives that can deliver a rapid return on investment.

There is renewed focus on *performance* in the supply chain. Companies are challenged to continuously improve their performance indicators (reduced time-to-market, reduced lead times, on-time delivery) and increasing their compliance (adherence to plan, perfect order). They are broadening the reach of their key performance indicators to measure the extended supply chain network that includes customers, suppliers, service providers and other partners.

Collaboration is becoming the next frontier of improvement to reach a new level of operational excellence. True *partnerships* are required to develop new product and services (faster, better and more complex), produce hybrid and cost-effective products and services, and deliver them to multiple channels.

During the past years, companies have focused on supply chain improvements with initiatives centered on operational excellence (rapid return on investment) and cost cutting. New SCM business models are required to meet the expected level of profitability, performance and partnership. Following best-in-class supply chain leaders, companies are now investigating how they can leverage the supply chain to outperform their competitors and progress in supply chain maturity.

### ***Key survey insights by functional area***

The survey revealed that supply chain executives are concentrating on operational excellence while meeting profitability and other business performance objectives. In each of the major process areas, responses indicate:

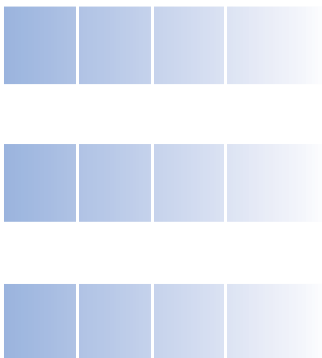
- *New product development (NPD) – Cost and time are paramount, driving the NPD Strategy.*

Product innovation management is essential to optimize the return on investment for NPD. Companies are developing strategies for cost reduction, such as increasing the level of commonality of components, platforms and assets for reuse and for revenue growth, such as improving speed-to-market. Also, many are implementing integrated, collaborative processes with partners to manage product change and new, derivative product launches.



- *Supply chain planning – It's all about sensing and responding.*  
Advanced planning systems and leading supply chain practices have been implemented or piloted to increase the responsiveness to customer demand. The complexity of products and markets results in companies extending their strategy to their end-to-end extended supply network. Leaders are increasing their capability to sense market changes while developing capabilities to respond faster through collaboration with partners.
- *Customer order management – Realtime processing leads to superior customer experience.*  
Order management processing is paramount to attainment of superior customer service and perfect order standards. On-time delivery and inability to fulfill sales orders due to out-of-stock continue to be challenges in meeting customer responsiveness and satisfaction targets. Companies are slow to embrace leading customer relationship management (CRM) practices of self-service, automated cross-selling and up-selling and purchasing customer focus groups.
- *Procurement – Globalizing to go to the next level of advantage.*  
The trend toward global sourcing is on the rise, with growth rates of over 20 percent from three years ago. Attainment of perfect order delivery to original request date is growing rapidly, but supplier lead times have remained somewhat static. Greater than 34 percent of the respondents indicated average supplier lead times of 20-plus days. Information technology focus is on integration of internal procurement and supplier management functions, as well as external integration with trading partners.
- *Logistics – Focusing on differentiating competencies through outsourcing.*  
Specifically in logistics transportation, warehousing/distribution and handling of product returns, outsourcing was a theme for the respondents. Companies are implementing flow-through strategies (cross-docking, merge-in-transit) to provide specialized logistics services by customer segment. Only 30 percent of the respondents are achieving order fill rates of 97 percent or greater and only 30 percent of the respondents are achieving ontime delivery rates of 97 percent or greater. New technologies, such as radio frequency identification (RFID) are creating significant change in logistics performance and inventory control.

The focus for the majority however, as evidenced by this year's results, has remained operational excellence attainment (*performance through partnership*) and managing the supply chain to deliver increased *profitability*. We have labeled this new focus: the three  $\pi$  model.

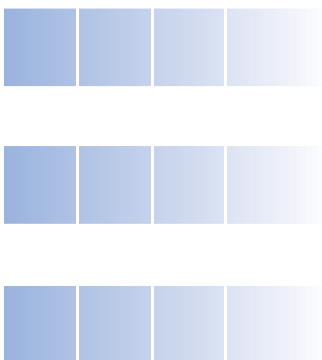


### ***New competitive advantage from existing investments: Profitability, performance, partnership***

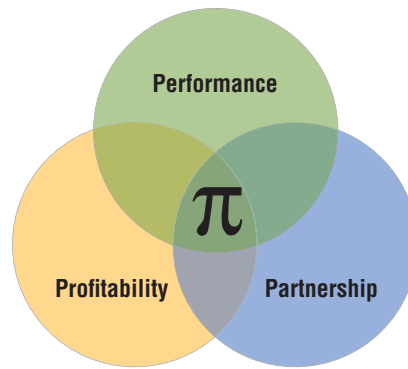
The continuous global and local economic fluctuations have increased the stress on manufacturing businesses. SCM processes are challenged to provide operationally excellent, lean, cost-effective and rapid delivery of products and services globally. Product lifecycles are becoming ever shorter as customer demand is becoming increasingly volatile. Markets, supply and operations are becoming progressively more global. Results of the 2004 IBM European supply chain survey show that key trends are emerging and evolving:

1. Supply chains increasingly include outsourcing and partnerships, presenting ever greater challenges in managing demand and supply, and controlling logistics spend.
2. Realtime and accurate access to relevant customer and supply chain operational data, such as inventory, orders and shipments is essential to meet customer service level requirements.
3. Pure product innovation is lessening in importance as focus moves toward the product time-to-market and lifecycle management to support higher sales and profitability objectives. There is also increased importance being placed on product "afterlife" management.
4. Optimizing supply chain performance, productivity and responsiveness is increasingly important to achieve cost- and service-level objectives.
5. Technology components with proven and rapid return-on-investment are favored to support critical supply chain processes, such as leaner manufacturing processes, consumer-driven supply chains and customer responsiveness. New technologies, such as RFID are changing the game in SCM.

Supply chain executives and managers are now concerned about focus areas for SCM success: profitability, performance and partnership (see Figure 1).



**Figure 1. Supply chain management success criteria: The three  $\pi$  model.**

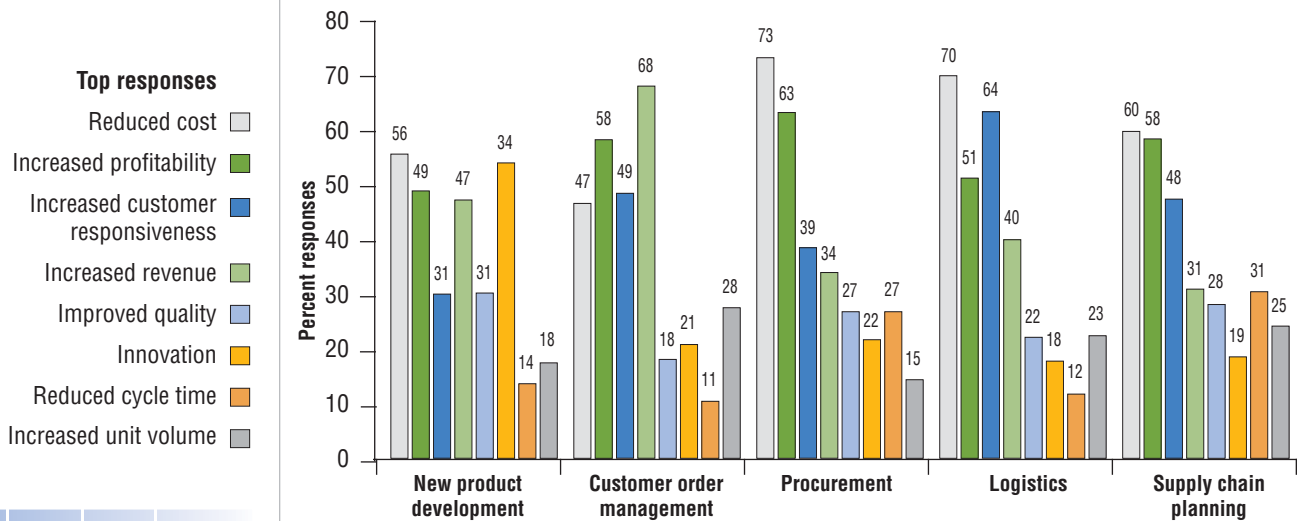


Source: IBM Business Consulting Services.

**Profitability**

Survey participants representing cross-industry sectors agreed that their main objectives were to increase profitability, reduce costs and increase revenue, but also to increase customer responsiveness to cope with greater uncertainty and volatility of demand. Increased customer responsiveness was also important for respondents. Research and development and product/services development executives also highlighted innovation as one of the top priorities to support profitability.

**Figure 2. Top objectives by supply chain process area.**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

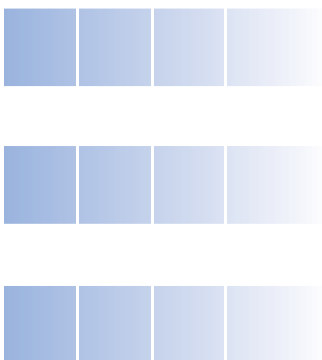
Traditionally, most companies have focused their SCM initiatives on cost reduction. Margin pressures are becoming increasingly severe, and supply chain performance is centered more and more on the overall business impact and shareholder value. As a result, companies need to reduce the fixed costs and capital requirements of supply chain operations and move to a more "variable" cost structure that can be controlled and managed in direct relationship to customer demand. Companies are focusing their efforts on their customers to deliver higher profits. This is true for all supply chain activities, including the development of new products.

### **Performance**

There is renewed attention on optimizing supply chain performance effectiveness to support profitability objectives. Performance objectives – when viewed from an end-to-end supply chain perspective – require realtime integrated visibility of key functions and processes with a multitude of supply chain network partners. By creating an environment of viable information, supply chain activities are proactively managed through:

1. Realtime access to transactional information to quickly identify root causes of issues
2. Shared information about plans, issues and actions that enables rapid decision making in collaboration with partners and service providers
3. Exception management through inter-company alert messaging, proactively warning a decision-maker if an action must be taken or a trend is emerging
4. Standardized and aligned measurements to monitor and assess daily performance
5. Scorecards and trend analysis of historical data to identify performance trends and recurring issues.

The survey shows that supply chain performance is being monitored for: "perfect order" attainment (on-time, right product, right price, damage free); cycle time reduction in new product time-to-market; and customer product delivery. Productivity initiatives and performance score-carding continue to target improvements in customer fill rates, retention, stock-outs, supplier order fill rates and lead times and inventory turns.





## Partnership

More and more, successful companies are organizing their supply chains horizontally (as opposed to the traditional functional silos) and are orchestrating end-to-end, extended supply chains (supply chain networks), integrating inside and outside of the four walls to the extended enterprise.

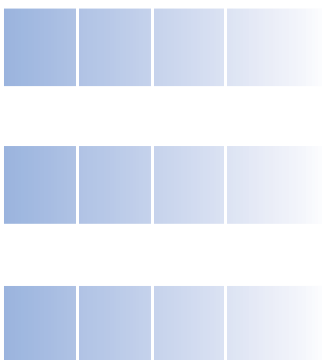
As businesses focus on their core capabilities, non-core supply chain processes are increasingly being outsourced. The use of outsourcing partners for cost and capability reasons has increased dramatically, expanding the number of players involved in delivering value to a customer. As the number of players increases, so do the complexities. To optimize efficiency and enable effective and responsive customer value delivery across the extended enterprise, collaboration, process and information integration and visibility with strategic supply chain partners is imperative.

According to survey results, many companies are continuing to focus efforts on partner collaboration and the need to coordinate/integrate supply chain event management to reduce latency and end-to-end supply chain cycle time. Supply chain managers are concerned about latency in the extended supply chain, which is the time from the occurrence of an unexpected event until resolution. Many companies are decreasing latency, as they focus on the synchronization of demand/supply and execution activities.

### *Innovative supply chain management performance is characterized by on demand maturity*

Survey responses illustrate the ongoing evolution of SCM. Companies progress from a static, non-integrated enterprise model through incremental steps –including functional optimization, horizontal process integration and automation, external collaboration and optimization – toward the vision of an on demand supply chain model that is integrated end-to-end across the business and with key partners, suppliers and customers.

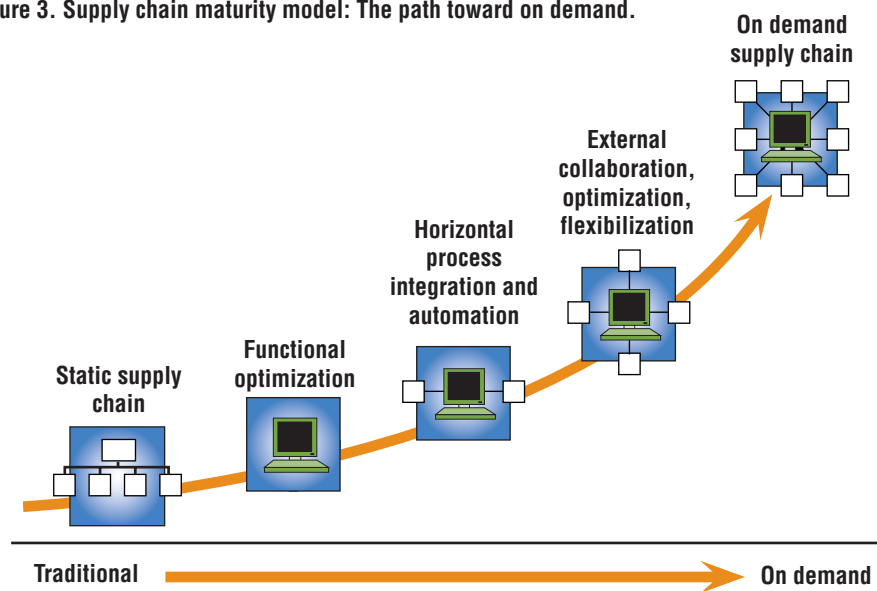
Survey results indicate that many companies are now advancing from functional excellence to horizontal process integration and automation by concentrating on improving a single supply chain process, such as warehouse management and integrating its supporting processes and information cross-functionally throughout the enterprise. There also appears to be some incremental progress in external collaboration with supply chain partners and constituents.



Attributes of a supply chain for the on demand world include:

- *Focused* – To identify core supply chain capabilities and strategic competencies to be managed in-house while selecting and orchestrating a network of strategic supply chain partners to manage the non-core and non-strategic tasks
- *Responsive* – To sense and respond with flexibility and speed to any customer demand, market opportunity, or external threat, no matter how frequent or sudden
- *Variable* – To build variable cost structures designed to execute at a high level of productivity, cost control, capital efficiency and financial predictability
- *Resilient* – To cope with threats, disruptions and changes while striving to control the impact on the efficiency of the overall supply chain.

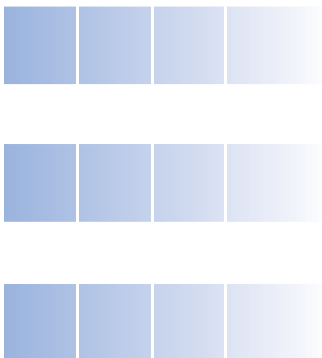
**Figure 3. Supply chain maturity model: The path toward on demand.**



Source: IBM Institute for Business Value.

### Survey results highlight need for energized supply chain to help increase profitability, performance and partnership

The survey provides insight into the adoption of leading practices by capturing significant trends and operational performance benchmarks. Across the end-to-end supply chain, survey respondents are adopting SCM advanced practices, sometimes with caution, on the road to supply chain maturity.

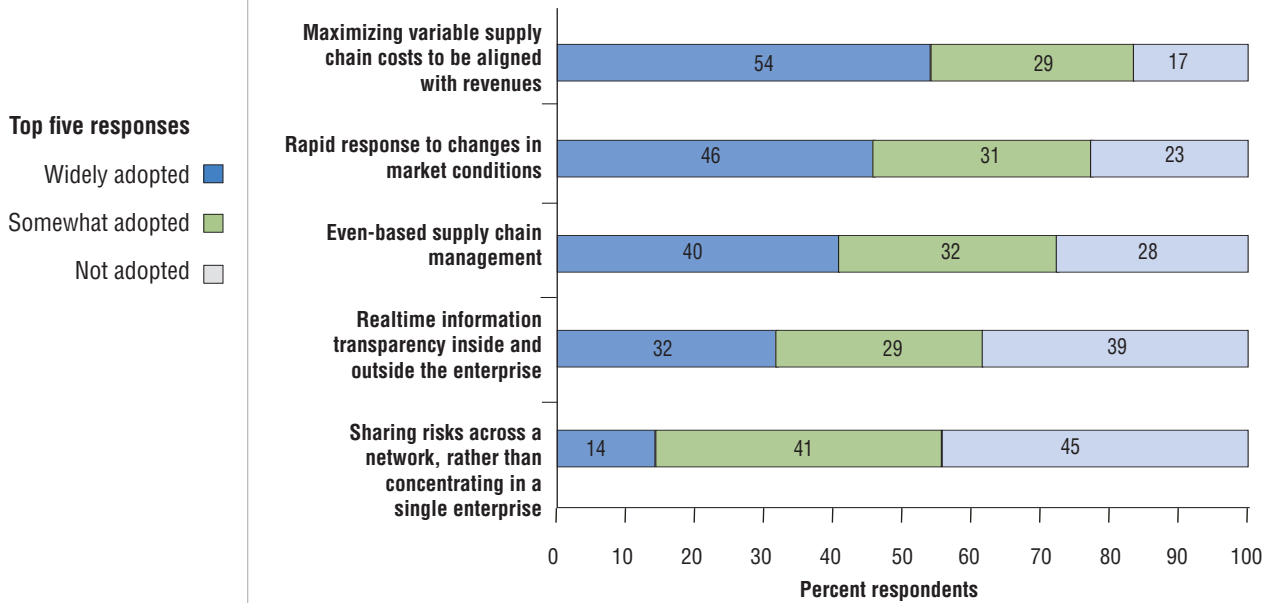


The turbulent market conditions and competitive environment of the early twenty-first century have raised the stakes for SCM. Over fifty-four percent of the survey respondents are widely aligning the supply chain costs with the revenues to increase their profitability.

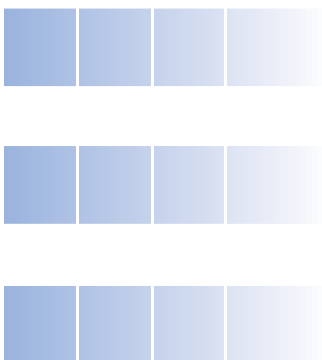
Companies ensure that costs are variable and can move up or down, based upon revenues. During revenue growth times, costs will go up, as expected. But if revenue declines, then costs will also go down when costs are aligned with revenue. Over seventy percent of the survey respondents have at least somewhat adopted rapid response practices to adjust to changes in market conditions and are moving towards event-based management.

Advanced supply chain management principles also include sharing risk outside the four walls of the company – with suppliers, partners and others, rather than concentrating inside. Fifty-five percent of the respondents report some risk-sharing across a network, rather than concentrating in a single enterprise, though only fourteen percent share risk "widely", while over forty-five percent have not adopted this practice.

**Figure 4. To what extent has each of the following supply chain practices been adopted at your site?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.



**Vision: Superior innovation of products and services, with rapid time-to-market, collaborative synergies and effective cost management are critical to attainment of the new supply chain network performance model.**

To respond to changes and conditions faster than traditional supply chains, advanced (mature) SCM practices are supported by applications and an open architecture that can enable rapid or realtime, accurate information visibility inside the company, as well as outside its four walls. Sixty-one percent of the survey respondents have adopted practices to enable realtime information transparency inside and outside the enterprise, though just thirty-two percent have widely adopted this fundamental capability. Thirty-nine percent have not, indicating yet another opportunity for improvement.

We have described the overall findings of the survey, explained how the three focus areas can support SCM strategies and improvement agendas, and reported on the new, required attributes of supply chains. We will now explore the results in detail, give our vision of the future and provide some recommendations on actions for organizations to consider as part of developing advanced or energized end-to-end SCM strategies.

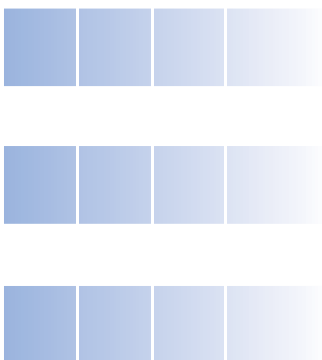
### ***Survey results from the five key areas of SCM***

#### **New product development is about profitability: Cost and time are paramount**

The accelerating pace of innovation and the growing ability of competitors to replicate new product features (and services) require NPD processes and solutions to reach a new level of performance. Companies failing to reach that level of performance will obtain fewer market successes and report reduced profits due to shortening product market life. Even if time-to-market has to be further reduced, development cycles have already been compressed through the use of new approaches for NPD. Companies will now develop strategies to master the cost of innovation (headcounts, infrastructure, technology and support) but also manage the implications of product lifecycle management (PLM) throughout the entire end-to-end supply chain.

Leading *NPD* practices include:

1. Product innovation management (market planning, portfolio and pipeline management)
2. Collaborative product development lifecycle management (extended enterprise):
  - Design with customers through collaborative requirements gathering
  - Collaborative product design with suppliers
  - Logistics and "get-to-market" requirements included in product/service design
3. Component, platform and asset commonality (increased component reuse)
4. Design outsourcing for non-core technologies

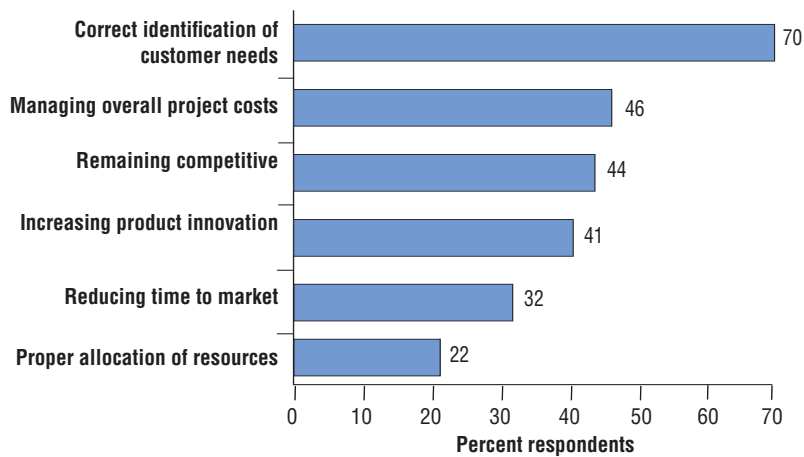


5. Multi-technology design process integration (for example, mechanical, electronics, software)
6. Optimizing investments in software technologies through virtual product design simulation and optimizing PLM software functions to address specific industry design issues. Use of grid-enabled technologies to validate product design against the virtual model.

**Survey findings**

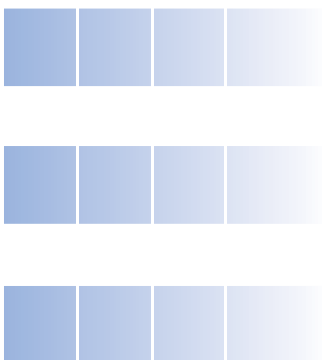
Cost reduction and Innovation are the main objectives shared by most of the respondents (over 50 percent each). New product development emphasis is on better service to customers, leaping the competition, and delivering innovative and cost effective products and service to market profitably.

**Figure 5. Management challenges for new product development efforts.**

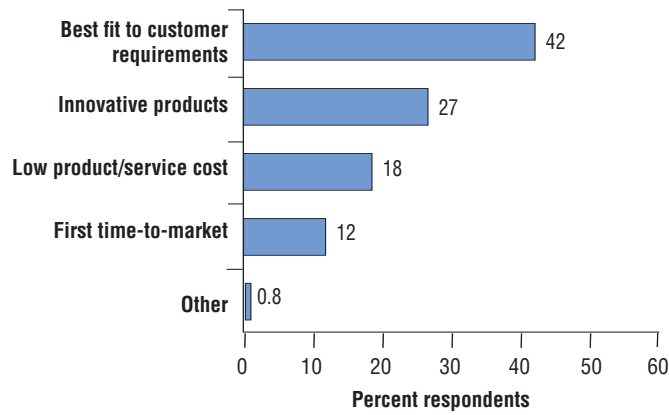


Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

Dynamically changing customer requirements and increased levels of global (multi-channel) competition create greater challenges for NPD efforts. Balancing changing customer requirements while managing costs and resources, is key to bringing new products and services to market in a timely fashion to meet profitability objectives.



**Figure 6. Primary strategy for NPD efforts.**

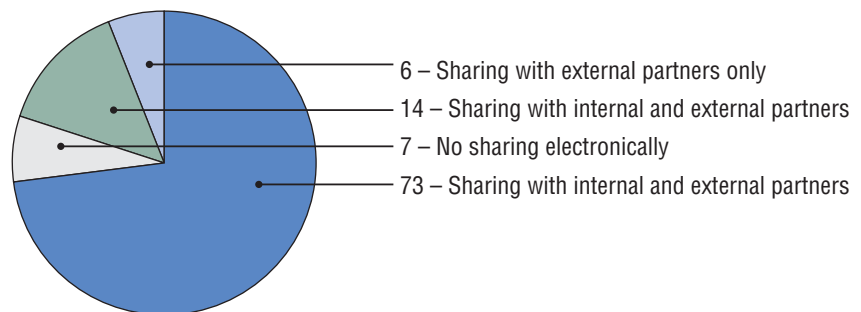


Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

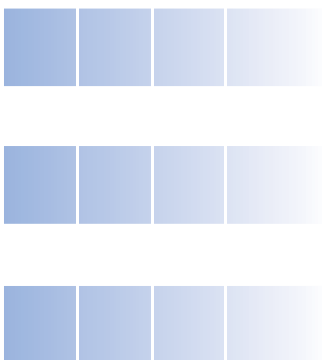
An innovation strategy is essential to gain a sustainable competitive advantage and leapfrog the competition. Forty-two percent of the respondents have developed an NPD approach focused on customer requirements. The continuous innovation strategy is critical at a time when customer requirements are more unpredictable due to globalization. Twenty-seven percent of the companies are focusing on developing innovative products in order to increase their profitability. This is particularly true for those that identify innovation as one of the top three objectives (thirty-five percent).

Combining product/service innovation with a focus on changing customer requirements is the balancing strategy of new product development success. Partnerships and internal collaboration with manufacturing require companies to be able to share technical documents (drawings, specifications, and the like).

**Figure 7. To what degree are product drawings and specifications shared electronically with internal and external partners?**



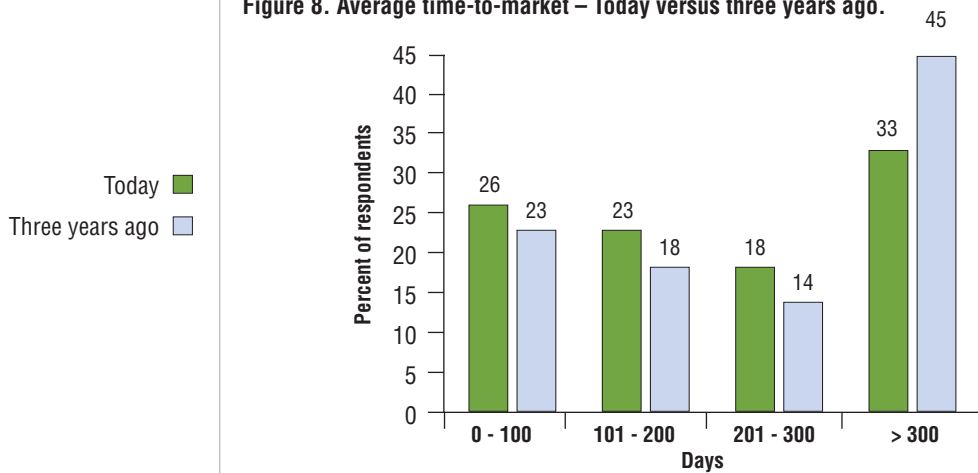
Note: Responses expressed in percent.  
Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.



Seventy-nine percent of companies share NPD documents with external partners and only seven percent do not share them at all. Large companies tend to be more open to sharing technical documents with external partners.

Companies not only have to harness the development challenges, but also increase their performance for NPD by being able to reduce the time-to-market and keep their development projects on track. There has been a steady improvement in time-to-market, driven by the implementation of stronger development processes and systems to support it.

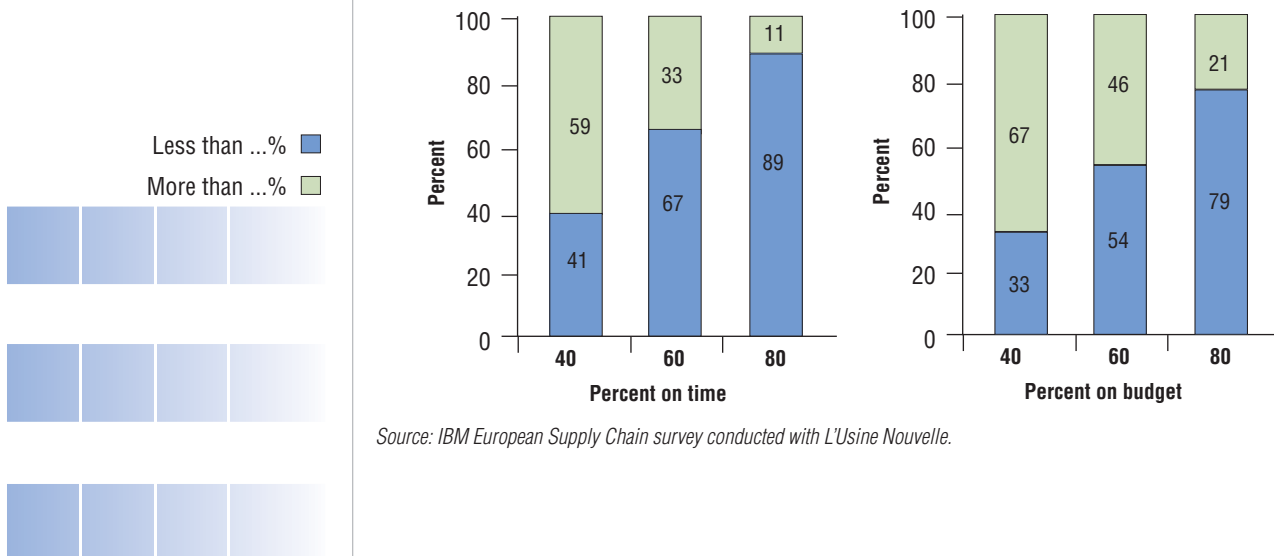
**Figure 8. Average time-to-market – Today versus three years ago.**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

Companies have reduced their time-to-market in the last three years. The average time-to-market has been reduced from 369 to 310 days (-16 percent) and the median time-to-market has dropped from 300 to 210 days (-30 percent). This indicates that companies are becoming much more responsive to the market requirements.

**Figure 9. Products launched on time and budget.**

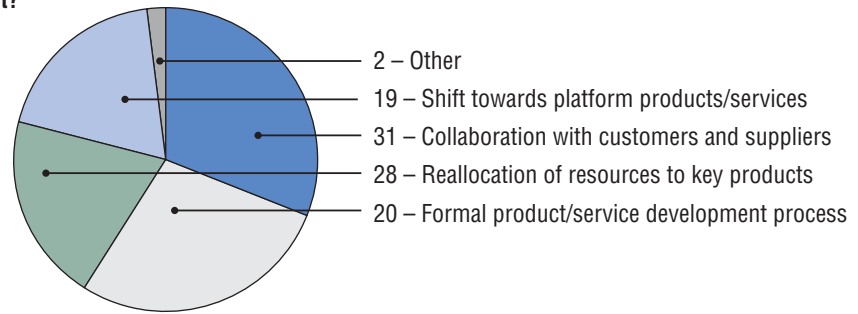


Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

Nevertheless, further analysis shows that only 11 percent of the respondents launch at least 80 percent of their projects on time, while 21 percent reach 80 percent or greater on budget attainment. This shows that despite the emphasis on time-to-market reduction initiatives, most have continued to miss their time-to-market and cost management objectives. This had a dramatic impact on profitability since significant profits usually come just after product launch (impact varies by industry).

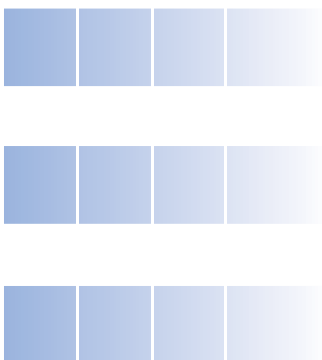
Companies that list innovation as one of their top three objectives tend to have better performance on time-to-market and are more compliant with both the planned costs and the schedule. Companies have already identified areas of improvement to reduce both time-to-market and development costs.

**Figure 10. Actions with most significant impact on reducing your site's product development time-to-market?**



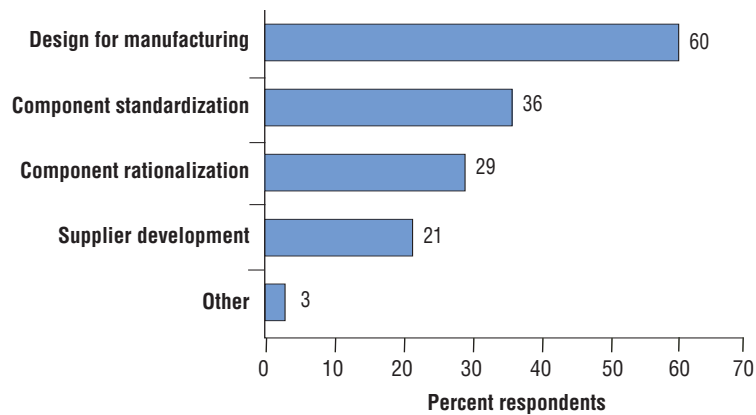
*Note: Responses expressed in percent.  
Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.*

Collaboration with customers and suppliers is considered the best way to better sense customer requirements and propagate the information up the supply chain to suppliers. The reallocation of resources is a way to increase performance of the NPD processes by focusing on key products. Formal processes are required to both optimize the internal resources (headcounts and technical means) and build a framework to engage in NPD collaboration with business partners.





**Figure 11. Actions with most significant impact on reducing your site's product development cost?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

*Recommended actions: To deliver superior innovation of products and services, with rapid time-to-market*

1. Create superior innovation processes of products and services to meet customer needs in collaboration with supply chain design and executive partners
2. Develop and implement solutions and systems to enable superior PLM leading practices and processes
3. Create superior capabilities for managing the evolution of the product lifecycle from launch to service to phase out in a networked supply chain environment.

When successfully implemented, these actions will facilitate achieving the objectives of:

- *Profitability* through standardized components
- *Performance* by designing products/services you can manufacture and deliver to market rapidly
- *Partnership* by leveraging your supplier's development capabilities.

### **Supply chain planning: It's all about sensing and responding**

The increasing volatility of customer demand and the supply shocks generated by the environment require supply chains to become more responsive and more adaptive. Companies are also focusing their operations on core competencies, increasingly outsourcing more of their operations and collaborating with an increasing number of supply chain partners.

**Vision: Demand-driven synchronization of supply chain planning and execution activities, in collaboration with suppliers and partners, is paramount to achieving the new profitability and performance objectives of the new, energized SCM model.**

As supply chains become more complex and less linear, due to both external constraints and opportunities, supply networks planning and collaboration will become the new standard. The competition among companies is now shadowed by a competition among supply chains.

Leading *supply chain planning* practices include:

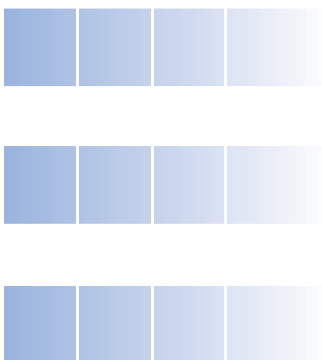
1. Specialized and differentiated supply chain strategies based upon customer segmentation, customized service levels and strategic planning (asset optimization, make or buy strategies)
2. Collaborative planning and forecasting with customers, including continuous replenishment programs for customers, shared management of inventory (visibility)
3. Price optimization based on profitability (plan to optimize profitability)
4. Collaborative planning and forecasting with suppliers
5. Multi-site inventory optimization
6. Price optimization based on profitability (plan to optimize profitability).

#### *Survey findings*

Political and economic uncertainty has resulted in increased costs or decreased sales for half of the surveyed sites and has therefore impacted their profitability. Nineteen percent of the respondents also report that lead times have been negatively impacted, despite their supply chain efforts. Sixty percent are considering both increased profitability and reduced cost as their top objectives for today's business environment. Customer responsiveness is the third top objective of most respondents (48 percent).

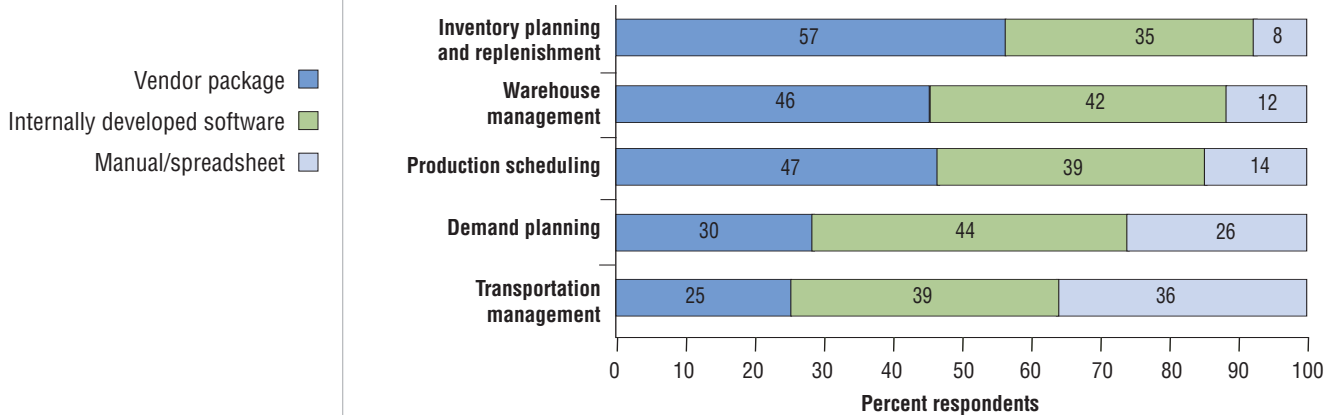
These figures demonstrate that companies have developed a clear understanding of the fact that their sustainability will depend on their ability to be responsive, resilient and variable in order to drive superior financial performance.

Large company sites (over 100 million revenue) put even more emphasis on customer responsiveness (60 percent). This shows a renewed shift toward customer focus. Two out of three have implemented supply chain planning systems to increase their planning performance.



Applications for supply chain planning, especially for inventory planning and replenishment are widely used – both vendor applications and custom-developed applications. Companies are progressively adopting planning tools to increase both productivity and profitability. System-based supply chain planning has now reached a level of maturity.

**Figure 12. For each supply chain process listed below, indicate the system/technology used.**

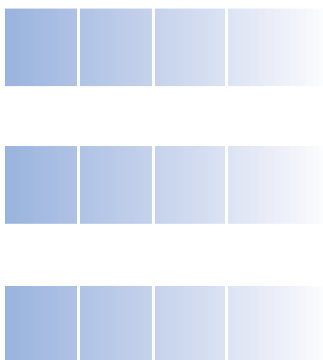


Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

A more detailed analysis shows that the level of adoption is heavily dependent upon the size of the company. The majority of large company sites (revenue > 100 million) have implemented systems (vendor packages - internally developed software) for inventory planning (79 percent - 21 percent), production scheduling (47 percent - 39 percent) or warehouse management (75 percent - 17 percent).

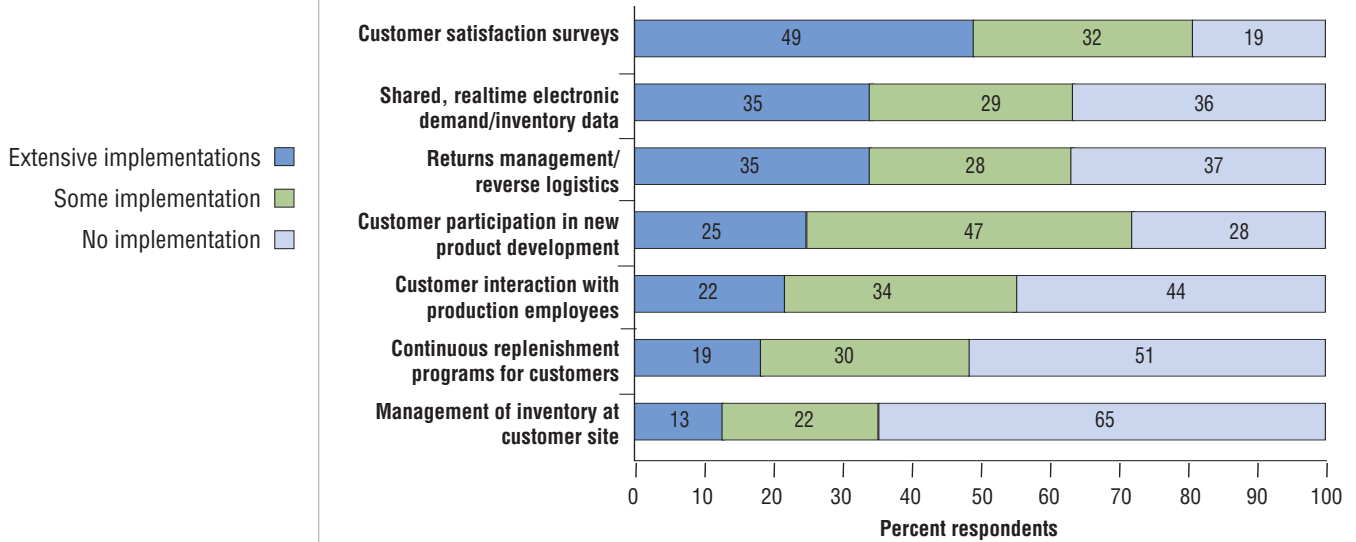
Twenty-six percent (resp. 36 percent) are using manual spreadsheet manipulation for demand planning (resp. transportation management systems). There are a few assumptions that can be made to account for this lack of automation and manual management techniques. One might be that these companies have not fully implemented S&OP processes to support the integration of Sales Forecasting and Supply Planning; another that outsourcing of transportation management to multiple partners has resulted in a lower level of automation.

A deeper analysis indicates that those that have implemented a vendor package for demand planning, Inventory planning or production scheduling are showing the best performance in terms of the site's average production schedule attainment for a planning period (about 90 percent). Companies that have implemented an internally developed customized software solution for demand planning, inventory



planning or production scheduling are showing medium strong performance for that same measurement (83 percent, 88 percent, 89 percent). Those that have not implemented a system solution for demand planning, inventory planning or production scheduling are showing the worst performance in this area (83 percent, 73 percent, 81 percent). With the exception of Customer-satisfaction surveys, less than 35 percent of the respondents have extensively implemented advanced customer practices, but 50 percent have at least piloted these practices.

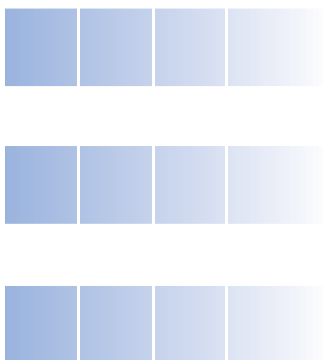
**Figure 13. To what extent have the following customer practices been implemented at your site?**



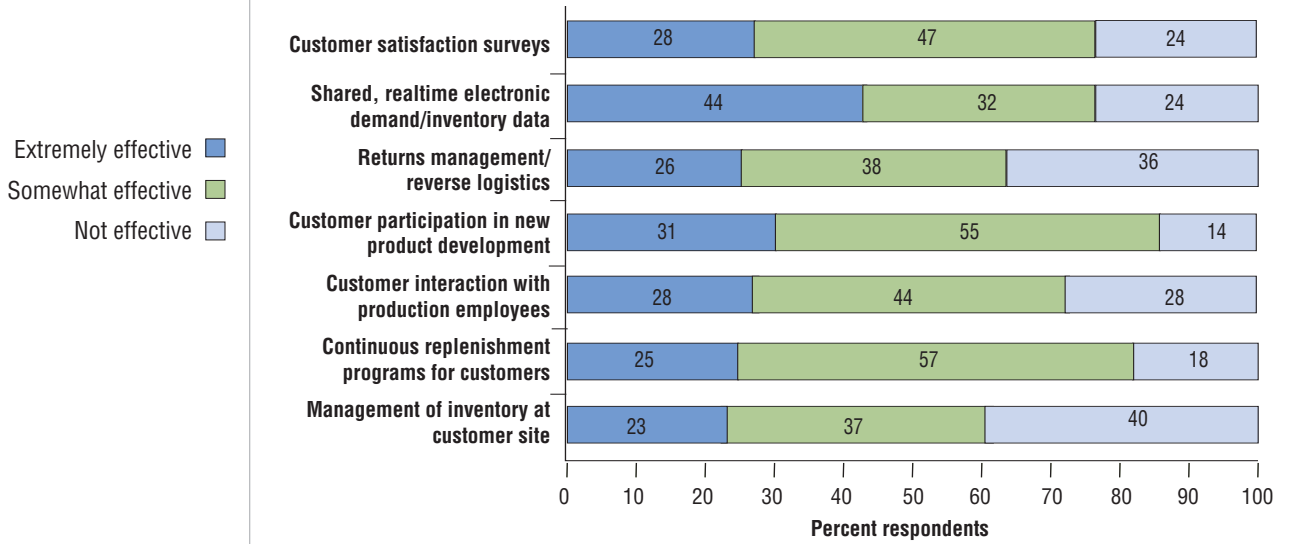
Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

Further analysis shows that companies are implementing both "soft" collaborative customer practices (such as customer satisfaction surveys) and "hard" collaborative customer practices (such as shared, realtime electronic demand and inventory data or returns management). Hard collaborative customer practices require business partners to develop a high level of trust and transparency to develop a solid supply chain partnership.

A deeper analysis shows that large companies demonstrate a higher degree of adoption for both the extensive implementations of these practices and the pilot implementation. This indicates a trend toward the adoption of these practices.



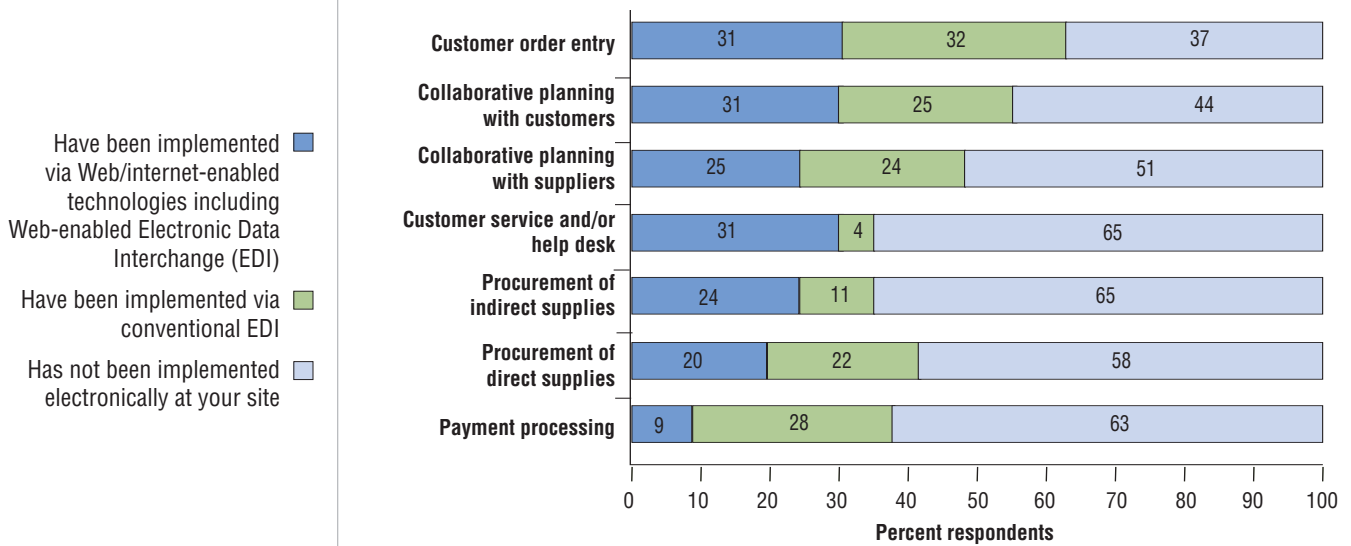
**Figure 14. If implemented, how effective has each practice been in reaching your site's top three objectives?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

The overwhelming majority of respondents (at least 60 percent) consider that the implementation of these leading practices proved to be somewhat or very effective in supporting their objectives (profitability). Furthermore, those that have extensively implemented these practices also recognize their level of effectiveness.

**Figure 15. Indicate which of the listed processes ...**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.



Companies are increasingly adopting collaborative supply chain practices, such as collaborative planning with customers or suppliers. This trend is again reinforced for large companies: over 60 percent have implemented collaborative planning with suppliers. Consumer products and high-tech companies show a higher level of adoption of collaborative planning with customers, whereas industrial companies have focused on implementing collaborative planning with suppliers.

*Recommended actions: Demand-driven synchronization to eliminate supply chain waste (time, inventory, effort, money)*

1. Implement a robust capability to sense and respond to customer demands and other critical events as they occur
2. Create superior responsiveness and cost/profit performance models to decide on the best supply response to optimize opportunities or resolve problems with speed and flexibility
3. Develop and implement the ability to execute across the networked Supply Chain in a synchronized way.

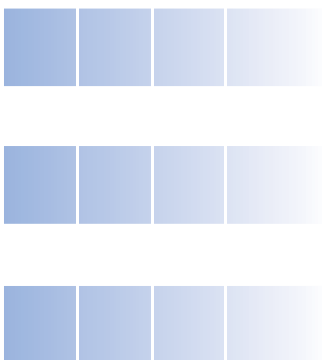
When successfully implemented, these actions will facilitate achieving the objectives of:

- *Profitability* through segmentation of customer product/service strategies with pricing optimization for profitability
- *Performance* by implementing realtime demand information to achieve "actual" forecasts
- *Partnership* through collaborative planning and forecasting with customers and suppliers.

**Customer order management: Realtime processing leads to superior customer experience**

Customers are becoming more demanding. Their expectations are evolving toward greater levels of service and response with higher degrees of product and service customization. Empowered customers expect on-time delivery, self-service with realtime order configuration and status information, with product/service bundles priced optimally. New customer and distribution channels are being created, enhanced by technological innovations and geographical expansion. Existing channels are under pressure and require constant change to retain market position. Customer satisfaction, continued sales growth and retention depend upon accurate and efficient order management and fulfillment.

**Vision: Profitability achievement will require a passion for customer retention and growth. The new value chain network strategies are driven by customer-facing business models.**



Leading *customer order management* practices include:

1. Supply chains that can respond "on demand" to shifting customer requirements and fluctuating demand signals
2. Realtime visibility and event monitoring of customer, product and supply information throughout the supply chain
3. CRM tightly integrated with supply chain planning and execution processes
4. Single face to the customer across business units, with order configuration and dynamic pricing
5. Conditioning demand based upon available supply, including pricing and promotions
6. Sell and promote based upon current inventory make/supply position, with ability to provide up-sell and cross-sell opportunities
7. Supply chain partners (suppliers, service providers) integrated to provide differentiated customer segment product/service bundling and superior customer service levels.

#### *Survey findings*

Increased revenue and increased profitability are the top drivers of customer order management performance. This centered attention on growth and profitability is probably resulting from the economic market conditions of the past few years, but may be a short-term view. Customer responsiveness leads to customer retention and revenue growth. In the longer term view, concentration on customer-facing initiatives and improvements will be significant to profitability achievement. When asked "Which of the following does your site regard as its top three objectives?" over 68 percent responded with increased revenue, while 58 percent named increased profitability and 49 percent cited increased customer responsiveness. Reduced cost ranked 47 percent, followed by improved quality, increased unit volume, reduced cycle time and innovation. Interestingly, larger companies ranked reduced cycle time over increasing unit volume and innovation. Companies with sales order processing time of less than one hour cited increased profitability as their predominate objective (greater than 80 percent).

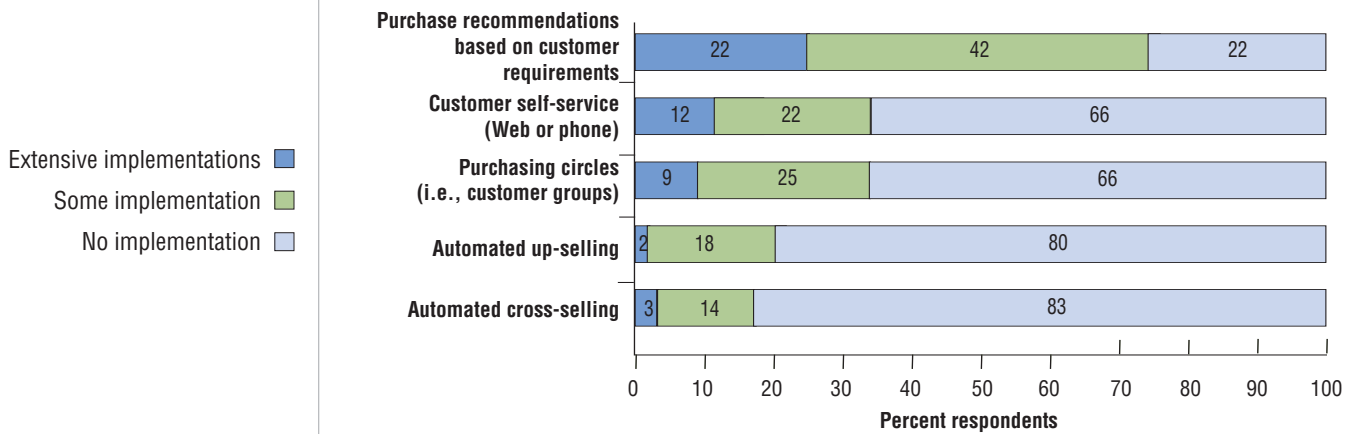


With the major objective of increasing profitability, one should note that 30 percent of the respondents indicated that they don't even classify customers – those that do primarily classify them on sales volume, versus profitability contribution.

Leading, complex, high-volume product companies, such as the high-technology industry have shown that classifying their customer base and differentiating their product/service offerings increase profitability and revenue growth.

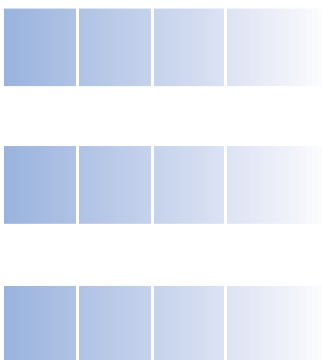
CRM practices influence customer demand and support increased revenue and profitability objectives, yet few companies have embraced these principles. As shown in Figure 16, only a handful of companies have extensive implementations of these leading practices and few have embraced these practices to any degree. Of the CRM practice implementations, however 50 to 90 percent found them somewhat effective, on average.

**Figure 16. To what extent have the following CRM practices been implemented?**



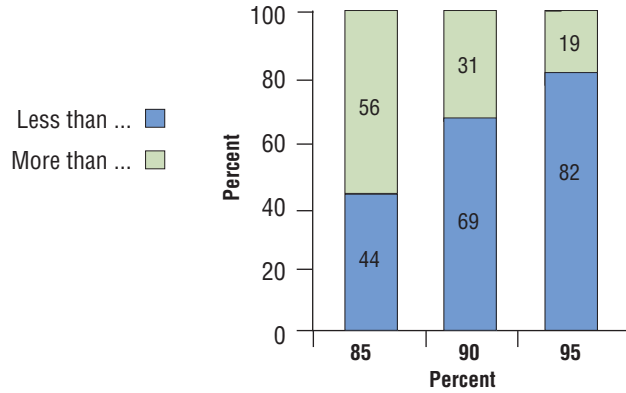
Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

There is no correlation between customer self-service (that is, Internet or kiosk order entry and configuration) implementations and sales order processing time. There is no correlation between "purchase recommendations based on customer requirements" implementation and the level of customer retention. With the price of getting a new customer estimated at about ten times that of maintaining a current customer, knowing how to deliver customer value consistently and repeatedly may be the best investment a company can make.





**Figure 17. What percentage of your total annual sales orders is fulfilled on time to customer commit date?**

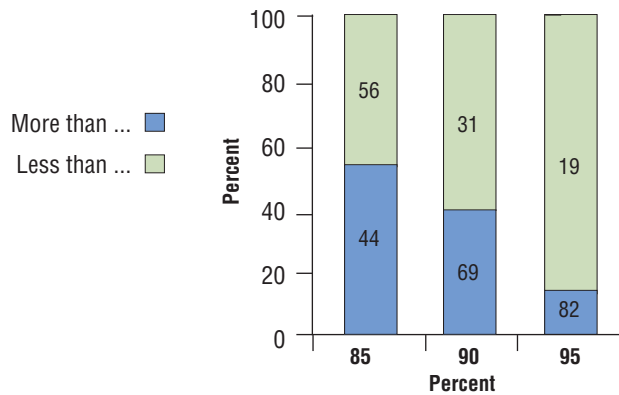


Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

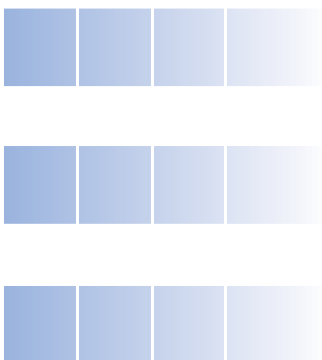
On time delivery (OTD) continues to be a key performance indicator for customer satisfaction. In today's marketplace 93-94 percent OTD is acceptable, but higher levels of performance are usually expected, although targets vary by industry.

Thirty-one percent of the respondents are experiencing on-time delivery rates of 90 percent or greater, but only 19 percent are achieving 95 percent or greater OTD. This would indicate that there is clear room for improvement for nearly 70 percent of the companies.

**Figure 18. What percentage of your total annual sales orders is not fulfilled due to stock-outs?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

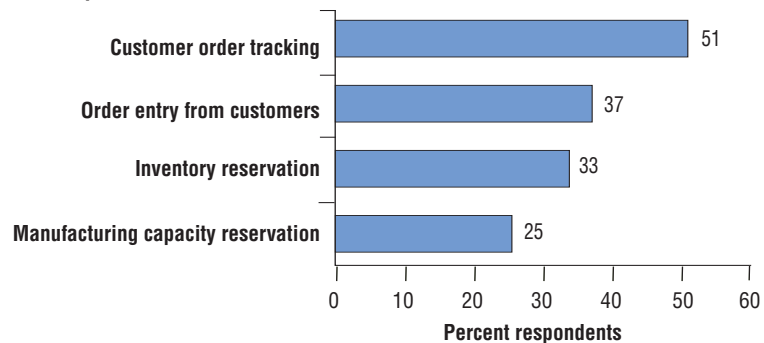


Inability to fulfill sales orders due to out-of-stock continues to be a challenge in meeting customer responsiveness and satisfaction targets. 41 percent of the respondents are experiencing inability to fulfill at least one percent of the sales orders due to stock-outs, with 14 percent even not able to fulfill at least 5 percent of the sales orders. Companies with stock-outs of less than 5 percent have higher customer retention rates than companies with stock-outs from 5 to 100 percent. All companies with a customer retention rate higher than 95 percent have a stock-out rate lower than 1 percent.

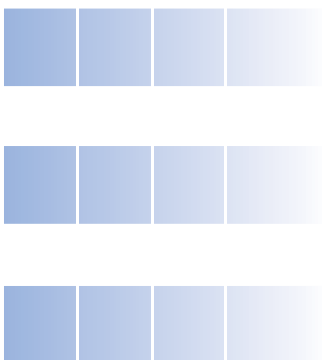
Sales order processing times are long. Forty-five percent of the cross-industry respondents require more than three hours, on average, to process sales orders. Twenty-two percent of the respondents even require more than 20 hours to process the sales orders. Supporting these long customer sales order cycle times are the means in which sales orders are received. Despite the e-commerce economy, many companies continue to receive customer sales orders through telephone (call centers), facsimile and mail. Survey results were surprising, in that 78 percent of the respondents receive sales orders via fax or mail (30 percent telephone), while only 22 percent are utilizing the internet. Direct systems connect and electronic data interchange (EDI) utilization were surprisingly low. Web-EDI has already outpaced EDI with twenty-four percent having at least piloted Web-EDI compared with 15 percent having at least piloted EDI. Projections for 2007 indicate some lessening of using manual means to process customer sales orders – with Internet / Web-EDI usage increasing significantly to 58 percent.

Realtime customer sales order processing, for purposes of this survey, was defined as an average of one to three hours of processing time. Results indicated that realtime order management processing is primarily in customer order tracking, customer order entry and inventory reservation.

**Figure 19. For your specific site, which of the following customer order management functions have realtime capabilities?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.



Customer retention rates of 95-100 percent correlate to rapid order management processing:

- Customer order tracking – 64 percent in the 95-100 range
- Order entry from customers – 41 percent in the 95-100 range
- Inventory reservation – 36 percent in the 95-100 range
- Manufacturing capacity reservation – 32 percent in the 95-100 range.

With the need to process customer orders faster, the trend toward smaller order size continues. Order line item size continues to diminish. Over 70 percent of the respondents indicate that the number of line items per sales order is averaging one to five line items.

Customer order management information technology is evolving, but slowly. Vendor packages are used primarily for order processing and customer service. However, a significant number of custom-developed applications are still being used (49 percent custom applications for order processing, 54 percent for customer service and 40 percent for returns management). IT integration is primarily with financial systems (billing/invoicing, accounts receivable, general ledger, customer credit) with some integration of supply chain functions (production and logistics). Interestingly, half of the respondents have weak or no interfaces to sales force automation, yet these same supply chain managers report increasing profitability as their primary objective.

*Recommended actions: New customer-facing business models are required to achieve profitable global growth*

1. Implement new integrated, multi-channel, business models for serving the customer and responding to relentless customer pressures
2. Create supply chain execution capabilities which provide fast, flexible, efficient and transparent response to changing customer demands
3. Develop and implement customer-driven supply chain networks with demand and responsiveness driven in realtime with supply events supported by customer self-service capabilities and end-to-end supply chain visibility and decision-making.



**Vision: New and energized procurement and supplier management practices include integration with finance, enterprise stakeholders and partners.**

When successfully implemented, these actions will facilitate achieving the objectives of:

- *Profitability* through conditioning demand based upon available supply. Pushing products and services to customer segments through up-sell, cross-sell configured order recommendations
- *Performance* by implementing realtime visibility and event monitoring of demand information to achieve "actual" forecasts
- *Partnership* through collaborative planning and forecasting with customers and suppliers.

### **Procurement: Globalizing to go to the next level of advantage**

The trend toward global sourcing and increasing use of partners for supply is set to continue, fueling the growth of networked supply chains. Driving this trend is the imperative not only to seek unit cost advantage, but also to secure best market capabilities and to share risks in collaboration with partners. As procurement and supplier management processes mature, they are becoming an extension along the supply chain where companies focus on continued streamlining of internal functions (internal collaboration initiatives), as well as external collaboration with suppliers and partners for joint design, planning, product management and execution. Leading companies are creating supply network transparency as they consolidate global purchases, develop global best sources, aggregate demand with external partners and leverage procurement to reshape the supply chain.

Leading *procurement* practices include:

1. Establishing a strong procurement infrastructure to execute on strategic supply initiatives, using an empowered organization structure, fully integrated to the stakeholder and finance organization
2. Rationalization of global and regional supplier base. Supplier managed inventory and replenishment
3. Integration of sourcing and procurement (purchase, receive, inspect) through payment processes (automated reconciliation) enabled by realtime information
4. Full spend visibility and tracking, compliance management
5. e-sourcing to manage request for information/quotation activities, requests for proposal and supplier awards
6. e-procurement order processing for non-strategic goods and services
7. Cash flow forecasting and control
8. Procurement performance monitoring and supplier scorecards.

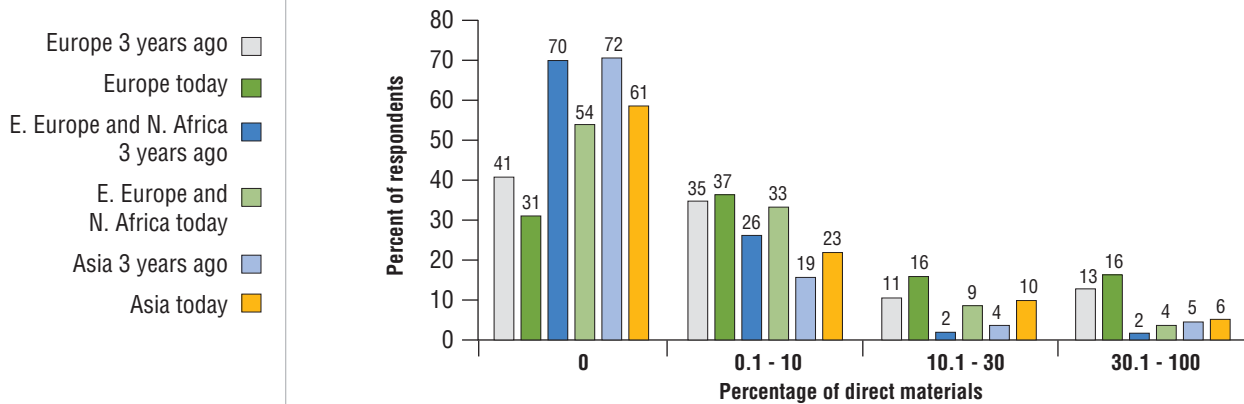


*Survey findings*

Increased profitability, reduced cost and improved customer responsive/service are the top drivers of procurement performance. When asked "Which of the following does your site regard as its top three objectives?" over 73 percent cited increased profitability, while 63 percent mentioned reduced procurement cost. Thirty-nine percent responded that increased customer responsiveness was their third major objective.

The trend toward global sourcing is on the rise. As indicated in Figure 20, sourcing outside of Europe has been growing on average from 13 percent 3 years ago to 16 percent today. Sourcing from Eastern Europe and North Africa has been growing on average from 2.8 percent 3 years ago to 5.9 percent today. Sourcing from Asia has been growing on average from 4.2 percent 3 years ago to 6.6 percent today.

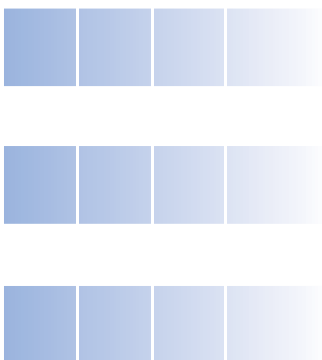
**Figure 20. What percentage of your site's direct materials is sourced outside of the EU?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

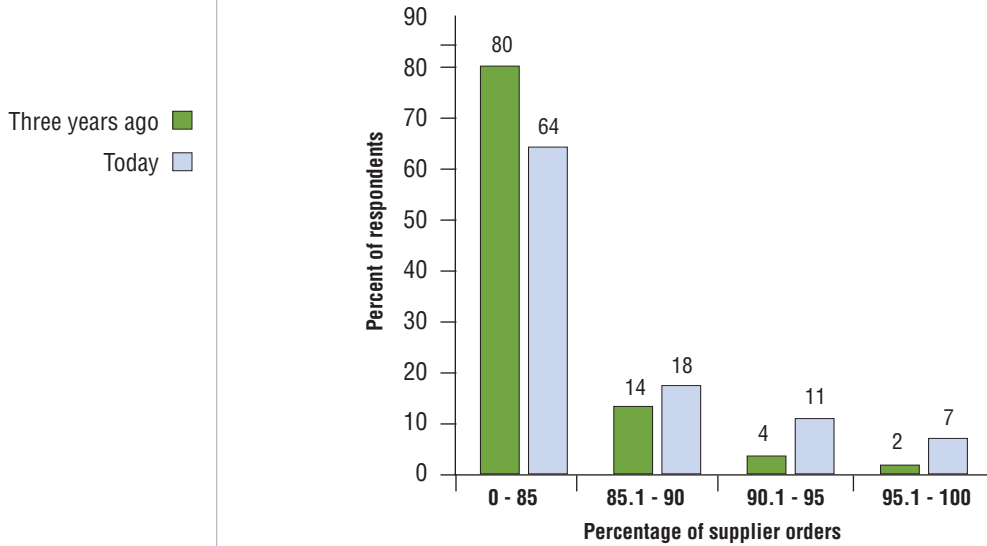
On average, respondents neglect to formally measure supplier relationship performance – 62 percent have either not implemented formal supplier scorecards or have implemented scorecards for some active suppliers. However, 62 percent of the large company respondents have systematically implemented score-carding for active suppliers at least.

The proportion of large companies attaining perfect order delivery to original request date is growing rapidly. Median on-time delivery has grown from 67 percent 3 years ago up to 77 percent today.



Yet, the results concerning supplier lead times have remained largely the same. The average response indicated greater than 34 percent of companies had lead times of 20-plus days and at least 10 days for over 59 percent of the respondents. Sixty-seven percent of these same respondents have measured no improvement or even an increase over the last 3 years in supplier lead time performance.

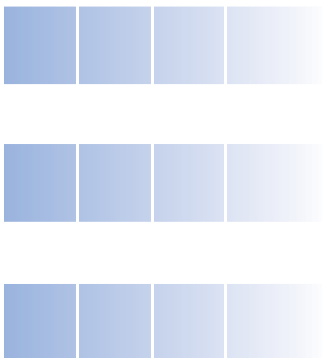
**Figure 21. What percentage of supplier orders is delivered by the original request date?**



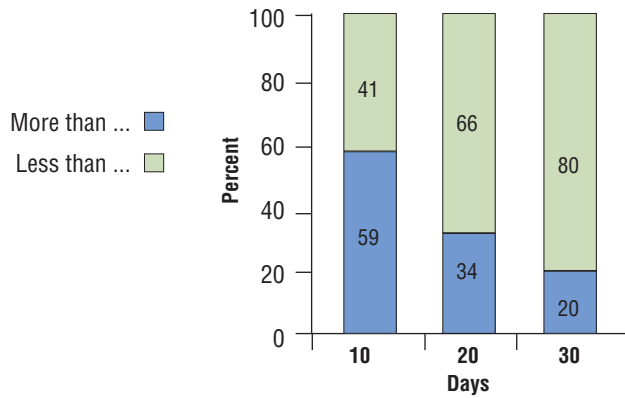
Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

While 68 percent of all company respondents have reported more than 4 turns per year, only 22 percent achieved over 4 turns per year, on average.

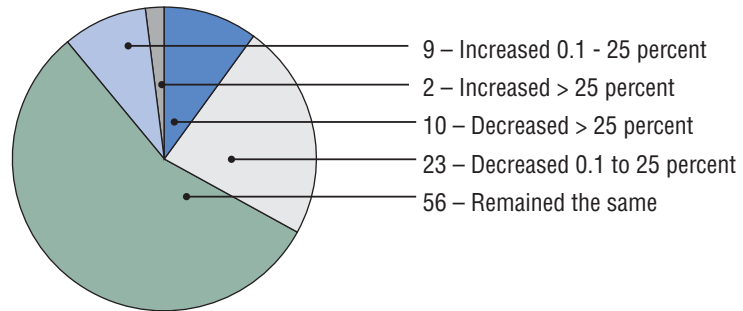
Companies from the retail and consumer products industries have reported higher inventory turns (over 30 percent with more than 12 turns) than companies from automotive, industrial products and aerospace and defense industries (less than 15 percent with more than 12 turns).



**Figure 22. What is your site's average supplier lead-time on purchased materials?**



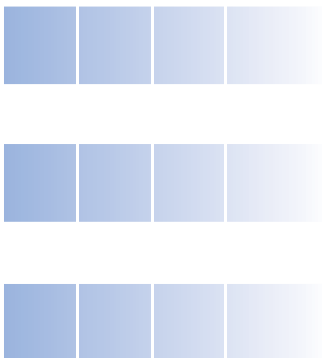
**Over the past three years, how have your site's supplier lead times changed, and by what percent?**



*Note: Responses expressed in percent.  
Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.*

Companies have selectively invested in information technology, favoring solutions for internal supply chain integration and exchange of order and demand data with external partners. If most of the respondents do not plan to invest in procurement systems (with the exception of supply chain integration and EDI), 40 to 60 percent of the large company respondents have invested or are planning to invest in supply chain integration (both internal and external with trading partners), data exchange (EDI and private online trade exchange) and third-party catalog management.

Although most respondents have automated purchasing systems (48 percent vendor packages, 35 percent internally developed, 17 percent manual/spreadsheet), supplier selection and contract management functions are largely performed manually. Over 50 percent of the respondents are using manual/spreadsheet means to evaluate supplier performance and manage contracts.



**Vision: Logistics networks and processes must be variable and flexible to grow or diminish according to demand. They must be fast-to-action (responsive) to compete – supply chain to supply chain.**



*Recommended actions: Procurement excellence creates value for the end-to-end networked supply chain*

1. Develop and implement global sourcing and supply networks with end-to-end visibility and adaptability – networks of supply chain partners that sense and respond in a coordinated fashion to changes in their environment
2. Transform procurement and supplier management performance through a renewed focus on operations procurement excellence internally, and in managing the performance of partners and suppliers in the networked supply chain
3. Implement collaborative supplier relationship management and execution processes including inventory replenishment, procurement, quality, returns management and performance management.

When successfully implemented, these actions will facilitate achieving the objectives of:

- *Profitability* through the implementation of "procure-to-pay" realtime visibility to manage procurement processes profitably
- *Performance* by proactively managing procurement activities with supplier scorecards and event monitoring of exception events
- *Partnership* by reengineering procurement and supplier management processes, integrating both finance and stakeholders.

### **Logistics: Focusing on differentiating competencies through outsourcing**

As today's global markets continue increasing in complexity, leading companies are challenged to manage their logistics network while delivering operational excellence and high customer service levels. Distribution complexities are growing as companies compete in multi-channels, while new channels (for example, Internet) expand. Innovative new technologies, such as RFID continue to emerge to enhance inventory tracking and distribution capabilities.

Leading *logistics* practices include:

1. Specialized and value-added logistics services based upon customer segmentation.

Outsourcing of non-differentiating activities

2. Rationalization of distribution networks and regionalization of components (facilities, processes, people and technologies)
3. Flow through or cross-docking and direct-to-store strategies. Virtual inventory and merge-in-transit strategies



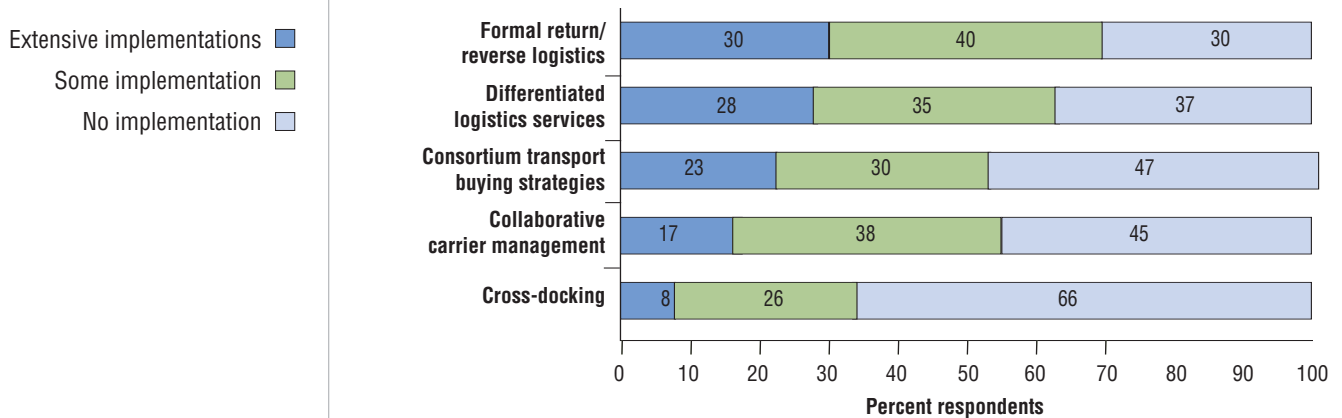
4. Use of supply chain event management technologies to monitor, alert and respond to changes and events proactively
5. Web-enabled transportation management and inventory tracking capabilities
6. Returns management with closed loop (reverse logistics) processes and quality assurance programs
7. Implementation of tax-efficient and tax-effective distribution structures.

*Survey findings*

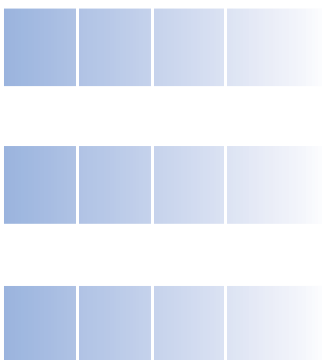
Over 70 percent of the respondents indicated reduced costs as their primary objective. Increased customer responsiveness was the next objective with 64 percent, followed by increased profitability with 54 percent and increased revenue with 40 percent. Of the high-tech companies represented, over 80 percent indicated that they are focused on increasing customer responsiveness. Consumer products companies stress profitability, cost reduction and customer responsiveness as their primary objectives. Retail companies are emphasizing improved quality, customer responsiveness and reduced costs.

Logistics leading practices are slowly being embraced by large companies. Most are focused on differentiated logistics services by customer segment and "flow through" strategies.

**Figure 23. To what extent have the following practices been implemented at your site?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

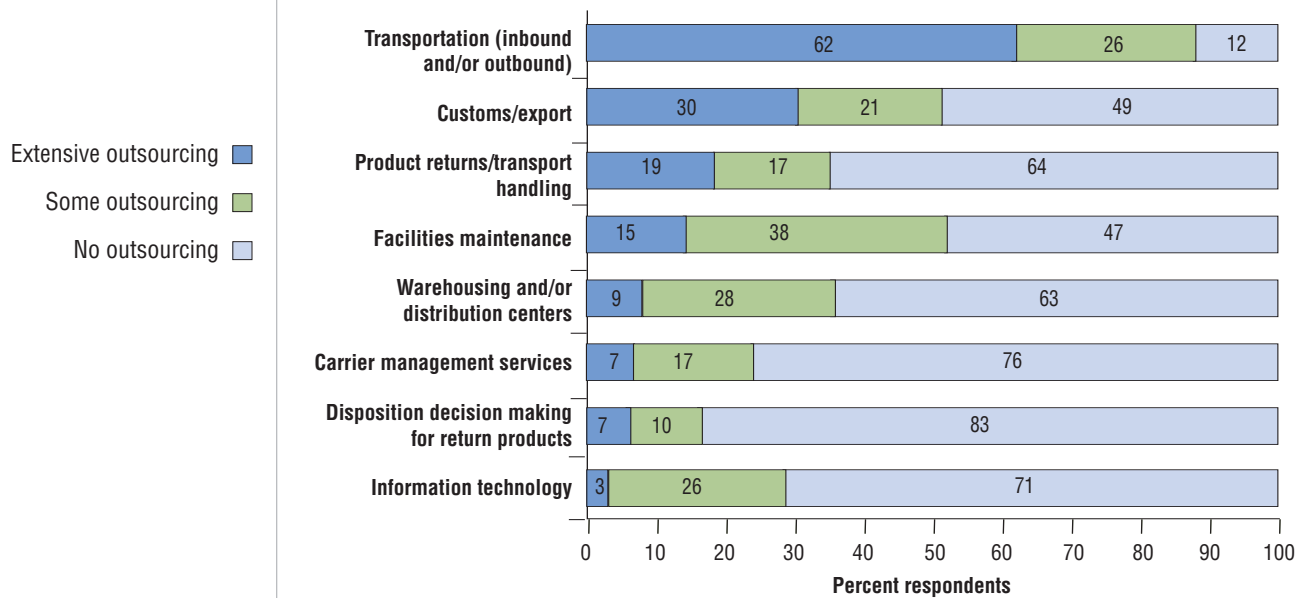


As seen in Figure 23, there is little progress in collaborative carrier management programs and consortium transport buying strategies. Over 70 percent of the respondents have formal process or supporting technology enabling implementations of returns management and reverse logistics operations.

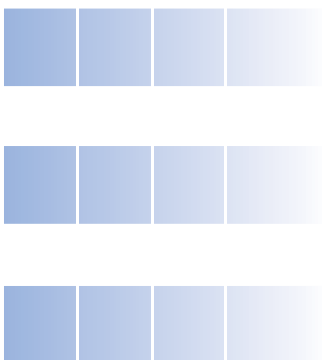
Evaluating logistics performance criteria correlated with leading practices, results show that companies that have implemented differentiated logistics services have a better average order fill rates (93 percent) compared with the ones that have not implemented it at all (89 percent average order fill rate). Companies that have not implemented flow through or cross docking strategies are experiencing higher customer order cycle times (8 days instead of 5 days).

Outsourcing of logistics functions continues predominately in the areas of transportation, customs/export services, handling of product returns, facilities maintenance and warehousing.

**Figure 24. To what extent has each of the following business functions been outsourced at your site for logistics functions?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.



This trend appears to be consistent within the past three years as companies continue to outsource discrete functions in transportation and warehousing, while maintaining carrier management (contract management) and disposition decision making for returned products in-house.

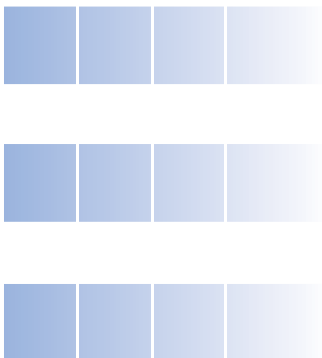
Companies have increased the level of outsourcing of product returns to meet new regulations such as the treatment of Waste from Electric and Electronic Equipment (WEEE). With the maturity of integrated transportation and distribution management systems, we might expect to see a trend toward more insourcing (bringing back in-house) of freight bill audit and payment components.

Of those functions which are outsourced, most responded that they have been effective in reaching the desired objectives:

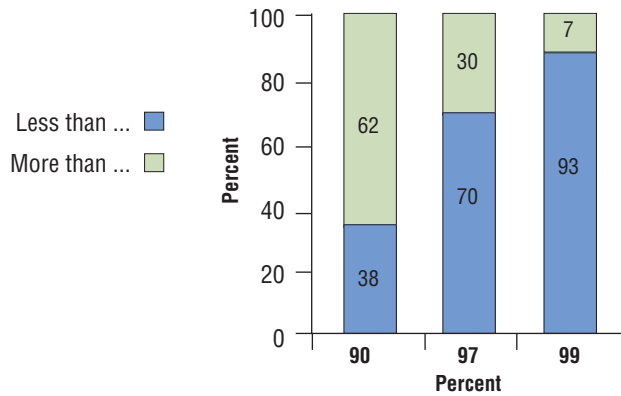
- Disposition decision making for returned products: 54 percent extremely effective, 38 percent somewhat effective
- Warehousing/distribution center management: 37 percent extremely effective, 63 percent somewhat effective
- Transportation management: 34 percent extremely effective, 61 percent somewhat effective
- Carrier management services: 34 percent extremely effective, 55 percent somewhat effective
- Customs/export management: 33 percent extremely effective, 63 percent somewhat effective.

However, it is noteworthy that in the areas of facilities maintenance and IT services respondents have a 10 percent or greater dissatisfaction rating.

Over 70 percent of the respondents are utilizing vendor packages or custom applications for warehousing and transportation. To plan and manage labor and material flow, only 26 percent of the respondents are utilizing vendor packages, whereby 40 percent are using internally developed software and 34 percent are still using spreadsheets or manual methods. Orders fill rates of 97 percent and above were achieved by those companies with vendor package or custom applications (over 35 percent) as opposed to those with no formal applications (less than 25 percent). Customer order cycle time decreased on average with vendor package implementations.



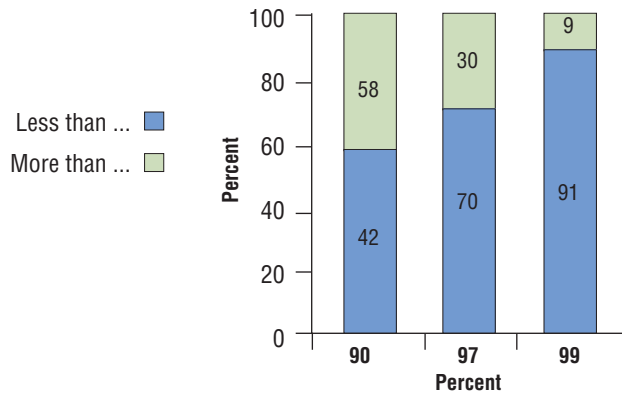
**Figure 25. What is your site's order fill rate?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

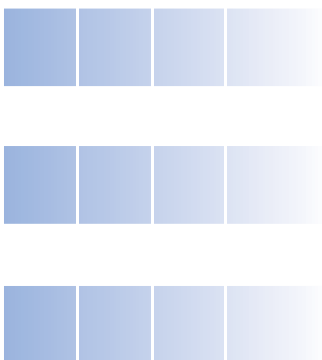
As seen in Figure 25, 30 percent of the respondents only maintain order fill rates of 97 percent or greater juxtaposed by 30 percent with on-time delivery rates of 97 percent or greater. The median order fill rate is equal to 95 percent and the median on-time delivery rate is equal to 94.5 percent.

**Figure 26. What is your site's on time delivery?**



Source: IBM European Supply Chain survey conducted with L'Usine Nouvelle.

Sixty percent of the respondents reported current customer order cycle time lower than 5 days compared with 46 percent only 3 years ago. Twenty-eight percent of the respondents reported current customer order cycle time higher than 10 days compared with 46 percent only 3 years ago. The lowest order cycle times of less than 5 days were reported in the consumer products (74 percent) and distribution/ transportation (100 percent) industries.



Typically, transportation and distribution functions are the largest process or activity cost buckets in the supply chain. Total logistics costs (transportation plus distribution costs) averages cross-industry were 61 percent achieving under ten percent of sales. The cross-industry median logistics cost is nine percent of sales.

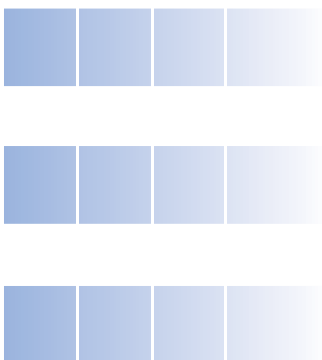
Forty-eight percent of industrial products companies report logistics costs lower than 5 percent compared with 29 percent from the consumer products industry. Order fill rates of 97 percent and above were achieved by those companies more often (48 percent) with a less than 5 percent logistics cost to sales ratio than by those (30 percent) with more than 5 percent logistics cost to sales ratio.

*Recommended actions: Focused and variable logistics network structures and processes are required for supply chain success in today's global economy*

1. Create competitive "fit for purpose" supply chain structures by focusing on differentiating competencies which support the customer value proposition and exploit the advantages of global sourcing and networked supply chains.
2. To accommodate the variability brought about by customer demand fluctuations and changing requirements, develop and implement dynamic and adaptive supply chain logistics structures. Control and marshal logistics assets and virtual assets acquired through outsourcing and partnerships in realtime. Integrate the entire end-to-end global logistics network and manage event exceptions proactively.
3. Create competitive advantage through aggressive exploitation of new supply chain technologies (for example, RFID) and reduced cost of operations through new ways to deliver and finance technology infrastructure.

When successfully implemented, these actions will facilitate achieving the objectives of:

- *Profitability* by driving down fixed cost by adopting flow through strategies and reverse logistics management practices
- *Performance* through implementing realtime visibility and event management technologies, and RFID to manage assets and logistics event performance
- *Partnership* by rationalizing the logistics network and outsourcing non-differentiating activities to partners.



## Conclusion

Today's business environment is rapidly and dynamically changing. Leading companies have demonstrated that supply chain management not only concerns operational excellence and cost reduction objectives, but more and more are focused on developing new business strategies. By managing these new business models, companies are able to outperform competition and to satisfy customers, while contributing to shareholder value.

Our research has highlighted three major areas of focus to meet the new business agenda:

1. Profitability
2. Performance
3. Partnership

Companies that intend to transform their SCM processes and supply chain networks into a competitive advantage need to excel not only in one or two of the three focus areas, but in all of them. The insights presented in this report provide a framework for companies to begin redefining their strategies, fine-tuning their performance objectives, and continuing the transformation journey of supply chain evolution towards maturity – thus, energizing the supply chain to deliver superior performance and increased profitability.

## About the author

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## Advisors

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