

# Change in the Chain: Supply Chain Transformation in the High-Tech Industry

---

WHITE PAPER

Sponsored by: UPS

Simon Ellis  
November 2010

---

## EXECUTIVE SUMMARY

High-tech companies operate in a complex supply chain environment where fragile inventory, complicated products, rapid product life cycles, and narrow margins put constant pressure on market share and financial performance. The global recession of 2008 and 2009 hit the high-tech industry hard, with many companies experiencing double-digit sales declines and profit erosion. In that context, it is interesting to take the pulse of high tech as global markets gradually recover. Based on the results of a recent IDC Manufacturing Insights survey of 125 high-tech companies, there is certainly reason for optimism:

1. Given an inability, at least in the short term to medium term, to materially affect demand and sales growth, many companies have focused on successfully preserving their bottom lines with aggressive cost containment and capital preservation efforts. The survey results clearly reflect this behavior.
2. However, it is encouraging that, in the context of the past two years, high-tech companies have done what they can to keep an eye on the customer/consumer with efforts to improve service levels and be more responsive to demand fluctuations.
3. In terms of new capabilities, high-tech companies will be investing more heavily in visibility in order to be more responsive to marketplace changes. Best-in-class companies that have greater transparency both upstream and downstream in the supply chain are better able to anticipate issues before they become major problems — managing proactively rather than reactively.
4. In the discussion of future plans, we are left with the distinct impression that high-tech companies are intent on getting their internal house in order while focusing on core capabilities and core markets. This is not an unreasonable approach given the past couple of years and the slowness of the economic recovery, and it is interesting that the supply chain aspect most likely to contribute to future success is the flexibility resulting from a variable cost structure. IDC Manufacturing Insights sees this across the industry, not only in obvious areas such as outsourcing but also in areas such as IT, product innovation, and reverse logistics.

## IN THIS WHITE PAPER

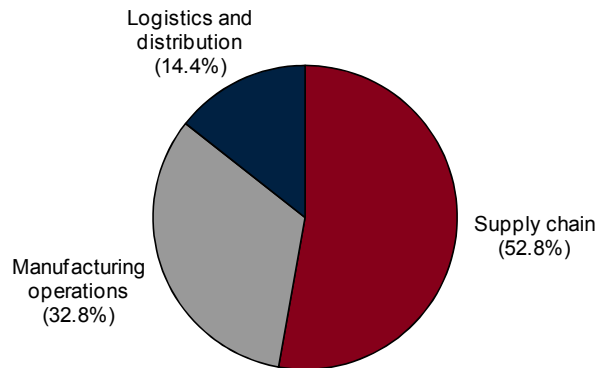
In this white paper, IDC Manufacturing Insights looks at the state of the high-tech manufacturing industry, focusing on key lessons from the economic downturn of the past couple of years and how those lessons will impact companies' business and supply chain priorities to drive "change in the chain." In order to get as current a view as possible, we recently conducted a survey of 125 high-tech companies for their perspectives on the past two years, as well as the near-term horizon. In addition, we conducted 11 in-depth interviews with high-tech executives to gain a deeper understanding of some of the complex issues facing the industry as well as to probe some of the survey responses.

### Demographics

The survey that underpins this white paper was conducted in August 2010 and comprised 125 senior high-tech supply chain professionals. The specific areas of responsibility are listed in Figure 1.

**FIGURE 1**

Survey Respondent Job Roles



**n = 125**

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

The breadth of respondents across manufacturing and the supply chain provides a balanced perspective of both challenges and opportunities. The survey also includes respondents at all levels of the organization, from those who contribute to the executive strategy to those who execute the strategy through tactics and operations, again providing a balanced view of both challenges and opportunities.

---

## Summary of Key Findings

The following are some of the key findings from our survey of 125 high-tech companies:

- **Finding #1.** Cost containment has been the top priority for high-tech companies, and their supply chains, for the past couple of years, and it will remain so for the immediate future.
- **Finding #2.** Despite the cost focus, high-tech companies have not lost sight of their customers and have attempted, within budgetary constraints, to look for ways to drive improved service performance.
- **Finding #3.** Supply chain visibility is the most important "new" capability for high-tech supply chains for the next two years.
- **Finding #4.** Responsiveness to customer needs is viewed as the top initiative expected to drive change in the high-tech supply chain.
- **Finding #5.** Attempting to recover lost sales and taking advantage of weakened competitors are not high business priorities for high-tech companies in 2010–2011.

## METHODOLOGY

IDC conducted telephone surveys with supply chain stakeholders at 125 high-tech firms in the United States. Surveys were conducted in August and September 2010 and consisted of 17 closed questions. The minimum threshold for annual revenue was \$300 million for study participants. The survey effort was augmented by qualitative in-depth interviews with supply chain executives at two to three high-tech firms in each of five U.S. metro areas: Dallas/Fort Worth, Los Angeles, Miami, New York, and San Francisco. The in-depth interviews were conducted after the majority of the survey effort was complete and allowed the analyst team to examine survey findings in detail.

## SITUATION OVERVIEW

Certainly high tech has all the challenges that other industries have, but in many respects, these challenges are greater in magnitude in the high-tech industry. High tech is a fragmented industry, with diverse subsegments and high levels of customer churn. The supply chain, and by extension the inventory, is fragile, dynamic, and particularly susceptible to obsolescence given very short product life cycles. The products themselves are more complex and the margins are thinner.

The high-tech market can also be thought of in two distinct product flows. B2B products are geared toward the computing, communication, and office equipment needed to make business more productive. This market has matured to the point where growth trends tend to follow the overall economic trend — although there is reason for some optimism as companies have stretched equipment refresh rates dangerously long. This factor may combine with the release of the latest, apparently reliable, Microsoft operating system, to drive new corporate purchases. The second flow is related to consumer electronics where fashion (mobile phone styles and colors), good-enough technology (Flip video camera), and services (iTunes) dominate buying considerations rather than the technology itself. Also, a growing dependence on devices in mature markets and the growing affluence of a young middle class in emerging markets shape demand.

Serving both of these value chains is a common supply base of electronic component companies as well as companies that provide electronic manufacturing services. Together, these groups resumed spending on IT in 2009 and are continuing to spend in 2010 (see Table 1). The emphasis of initiatives will be to improve the connectedness of key supply and demand partners to participate in product development, demand generation, and order fulfillment.

**TABLE 1**

U.S. IT External Spending: High Tech

	2008 (\$M)	2009 (\$M)	2008–2009 Growth (%)
High-tech equipment	5,521	5,655	2.4
High-tech components	6,606	6,812	3.1
High-tech other	2,483	2,527	1.8
Total	14,610	14,994	2.6

Source: IDC Manufacturing Insights, 2010

**Technology-Oriented Value Chains and the Complexity of High Tech**

At IDC Manufacturing Insights, we view the high-tech industry through the lens of what we call technology-oriented value chains, where the cadence of the business is driven by the rapid generational cycles of key technological innovations. Subsegments of high tech are listed in Table 2.

<b>TABLE 2</b>	
High-Tech Industry Subsegments	
Subsegment	Description
Semiconductor	Shares attributes with asset-oriented value chains where manufacturing cadence is driven by heavy investment in property, plants, and equipment, namely foundries
Consumer electronics	Shares attributes with brand-oriented value chains where manufacturing cadence is driven by the consumer demand and "fashion" over "form"
Contract manufacturing	Shares attributes with engineering-oriented value chains where manufacturing cadence is driven by the engineering complexity of the product
Computing, telecom, and office equipment	Shares attributes with engineering-oriented value chains where manufacturing cadence is driven by the engineering complexity of the product

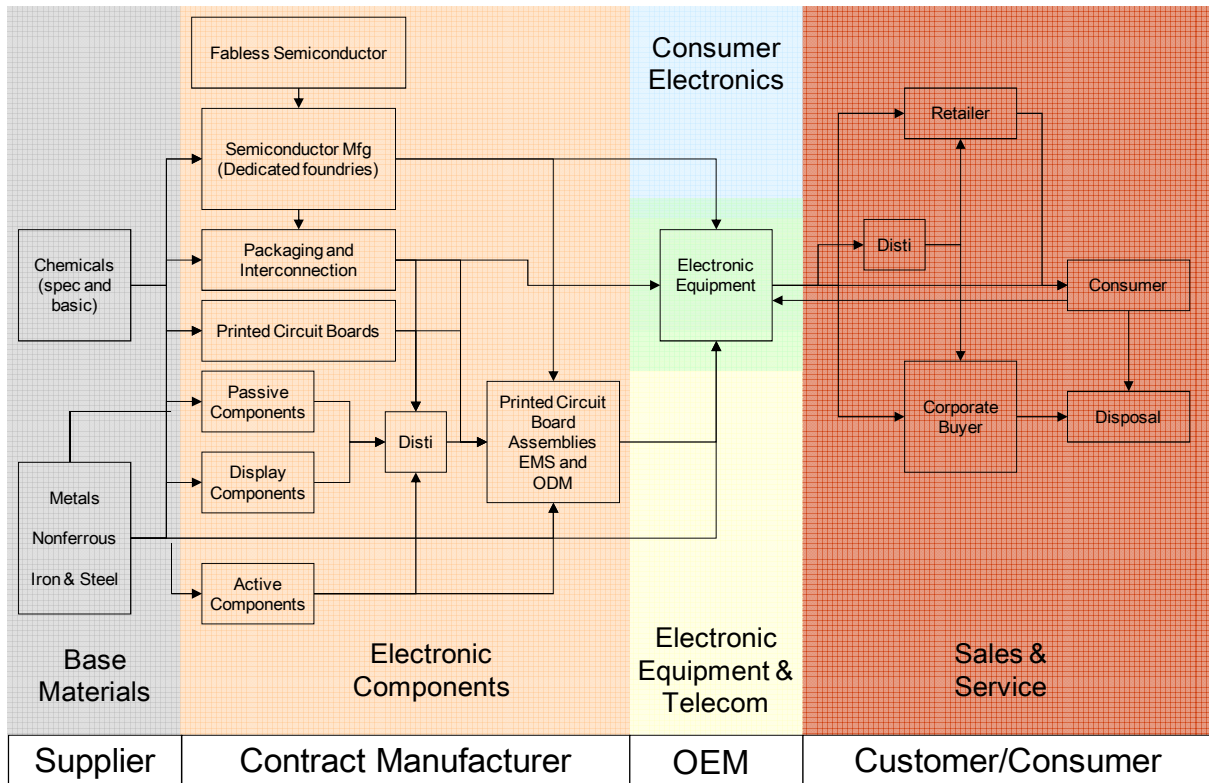
Source: IDC Manufacturing Insights, 2010

While the fundamental nature of high tech is affected most by the rapid life cycles of technology, the disparate subsegments also look a bit like asset-oriented value chains (semiconductor), brand-oriented value chains (consumer electronics), and engineering-oriented value chains (computer and telecom equipment). This "schizophrenic" character of high tech is what drives a lot of the complexity, particularly for companies that span multiple subsegments.

Figure 2 shows the complexity of interactions both back into the supply side of the value chain and forward into the demand side as well as the degree to which visibility is a key capability.

**FIGURE 2**

Supply Chain Complexity in High Tech



Source: IDC Manufacturing Insights, 2010

Upstream, high-tech companies also manage a high level of supply chain complexity, with supply and contract manufacturing frequently full partners in the business including the design and manufacture of new products.

Downstream, high-tech companies must effectively manage complex sales channels (e.g., distributors, resellers, partners, direct to consumer) by finding ways to drive value-added sales activities; bringing products to market in a timely, effective way (flawless innovation delivery); and managing/prioritizing customer churn — both retaining the right customers and identifying/prioritizing profitable accounts.

---

## **Change in the Chain: The Business Environment of the Past Two Years**

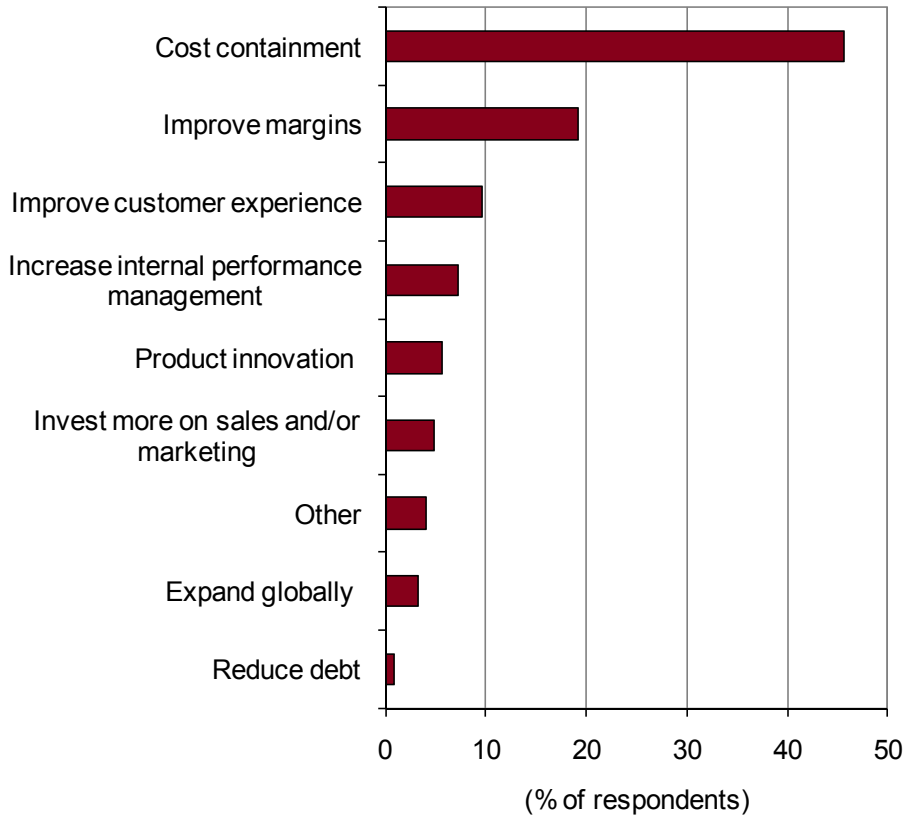
There is little question that the past couple of years have put enormous pressure on high-tech manufacturers, yet there is a surprising undercurrent of optimism about what the future will bring. Forward-looking companies have used the economic downturn as an opportunity to reassess their business and how to best prepare for the recovery. Certainly there are questions about the new baseline, but companies have been quite pragmatic about their priorities, and IT technology has proven to be a valuable facilitator.

According to our survey results, manufacturers have been focusing on the basics: cost containment and improving margins. In one of the in-depth interviews we conducted in support of the survey, a circuit board manufacturer said, *"Everyone looks for cost reduction; all look for profitability! The trend is to keep pushing the supplier for lower costs and better performance."* This makes sense: Companies have been fighting for their very lives, but it is interesting to note, as illustrated in Figure 3, that improving the customer experience is the third highest top priority, suggesting that even in historically difficult economic times, companies have not taken their eye off the customer/consumer. The same circuit board manufacturer also said, *"Service should be the equal of cost. We try to do this!"*

**FIGURE 3**

Top Business Priorities

Q. What were your company's top 3 business priorities over the past two years?



n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

If we then look at the full set of responses in Table 3, we see that over 38% of the respondents picked "improve customer experience" as one of their top 3 priorities. It is somewhat of a surprise to us that "product innovation" did not rank more highly; however, in the detailed interviews we conducted with high-tech executives, it does appear that even R&D budgets have been slashed as companies attempt to "make do with what they have." Clearly this approach is not sustainable, but in the context of the past two years, it is understandable.



**TABLE 3**

Top 3 Business Priorities over the Past Two Years (% of Respondents)

	Picked as a Top 3 Priority	Top Response	Second Response	Third Response
Cost containment	71.2	45.6	16.0	9.6
Improve margins	60.8	19.2	24.8	16.8
Improve customer experience	38.4	9.6	15.2	13.6
Increase internal performance management and accountability	29.6	7.2	8.8	13.6
Product innovation	28.8	5.6	8.8	14.4
Expand globally	22.4	3.2	9.6	9.6
Invest more on sales and/or marketing	21.6	4.8	8.0	8.8
Reduce debt	16.8	0.8	7.2	8.8
Other	10.4	4.0	1.6	4.8

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

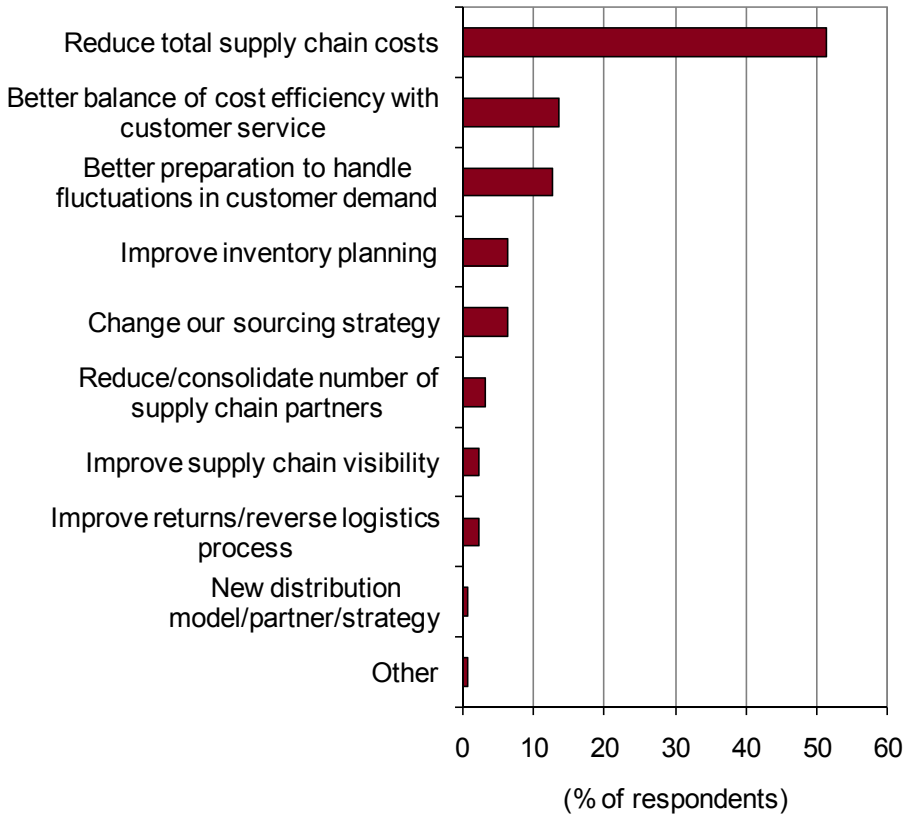
We also asked high-tech companies about their supply chain priorities; the top responses are illustrated in Figure 4. Again, unsurprisingly, cost reduction dominates as the top supply chain priority, followed by better balancing cost efficiency with service and being better prepared to handle demand fluctuations.

It is interesting to note that improving inventory planning is ranked as a top priority by less than 10% of the high-tech companies polled (even though it is a significant contributor to supply chain cost) and that supply chain visibility is ranked as a top priority by less than 5% (even though visibility is a critical component of a more proactive assessment of demand fluctuations). In our detailed interviews, executives indicated that although visibility is important, it is not something that can be created overnight, and it took a backseat to the urgent matter of recession survival. One server manufacturer took exception to this, however, stating, *"We have had many initiatives this year with customers — all about visibility, flexibility, demand management, life-cycle management, and flow through chain. Visibility always comes up."* There were no notable responses in the "other" category.

**FIGURE 4**

**Top Supply Chain Priorities**

Q. *What were your company's top 3 supply chain priorities over the past two years?*



n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

If we look at the full set of responses in Table 4, we see that the order reshuffles a bit, but cost remains the top priority. Improving inventory planning exceeds balancing cost efficiency with service, but, as we pointed out earlier, inventory is first and foremost about cost.

**TABLE 4**

Top 3 Supply Chain Priorities over the Past Two Years (% of Respondents)

	Picked as a Top 3 Priority	Top Response	Second Response	Third Response
Reduce total supply chain costs	68.0	51.2	9.6	7.2
Better preparation to handle fluctuations in customer demand	50.4	12.8	24.0	13.6
Improve inventory planning	47.2	6.4	24.8	16.0
Better balance of cost efficiency with customer service	40.0	13.6	15.2	11.2
Change our sourcing strategy	24.8	6.4	10.4	8.0
Reduce/consolidate number of supply chain partners	22.4	3.2	4.8	14.4
Improve supply chain visibility	21.6	2.4	4.0	15.2
Improve returns/reverse logistics process	15.2	2.4	4.8	8.0
New distribution model/partner/strategy	6.4	0.8	2.4	3.2
Other	4.0	0.8	0.0	3.2

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

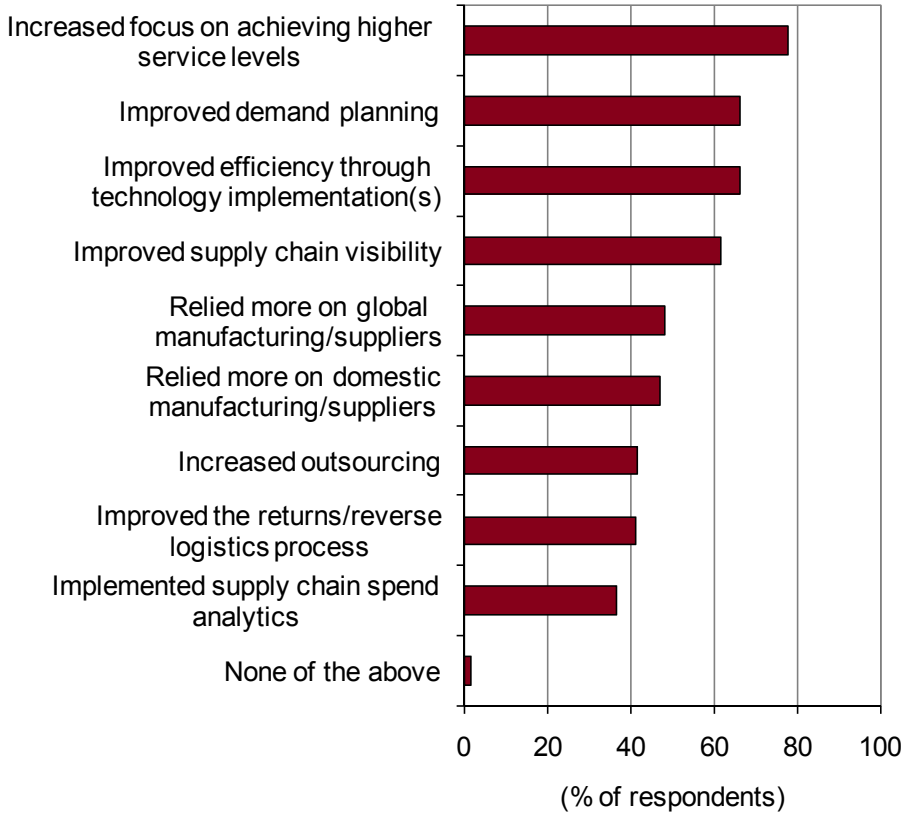
The last question we asked that looks backward was about actual changes made within the supply chain over the past two years. The responses are illustrated in Figure 5. It is interesting to note that of the changes made, driving higher levels of customer service was the top response. This response, in the context of intense scrutiny on costs (as both a business priority and a supply chain priority), speaks volumes to where high-tech manufacturers must focus their efforts.

Certainly cost containment is critical — we pointed out earlier that for many companies it was about survival — yet the focus on the customer and on service levels is important as well, particularly on the retention of key, profitable customers.

**FIGURE 5**

**Supply Chain Changes Made**

Q. Please indicate whether your company has made any of the following changes in the supply chain during the past two years.



n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

The high-tech industry has been hit hard by the global recession, with many companies experiencing significant top-line erosion. Given an inability, at least in the short term to medium term, to materially affect demand and sales growth, companies have focused on preserving their bottom lines with aggressive cost containment and capital preservation efforts. The survey results clearly reflect this behavior. It is encouraging, though, in the context of the past two years, to see that high-tech companies have done what they could to keep an eye on the customer/consumer with efforts to improve service levels and responsiveness to demand fluctuations. Perhaps the most perceptive comment came from a server manufacturer that made the following observation: *"From a business standpoint, improving or exceeding customer expectations is a big part of today and in the future. But we need to look at the financials as well so you can be properly considering things both externally and internally."*

## FUTURE OUTLOOK

The majority of the remaining survey questions focus on the future:

1. What are the key factors driving growth and change in the high-tech business generally and in the supply chain specifically?
2. What are the challenges and pain points in the supply chain expected to be?
3. What are the objectives that the industry is considering for the postrecession supply chain?

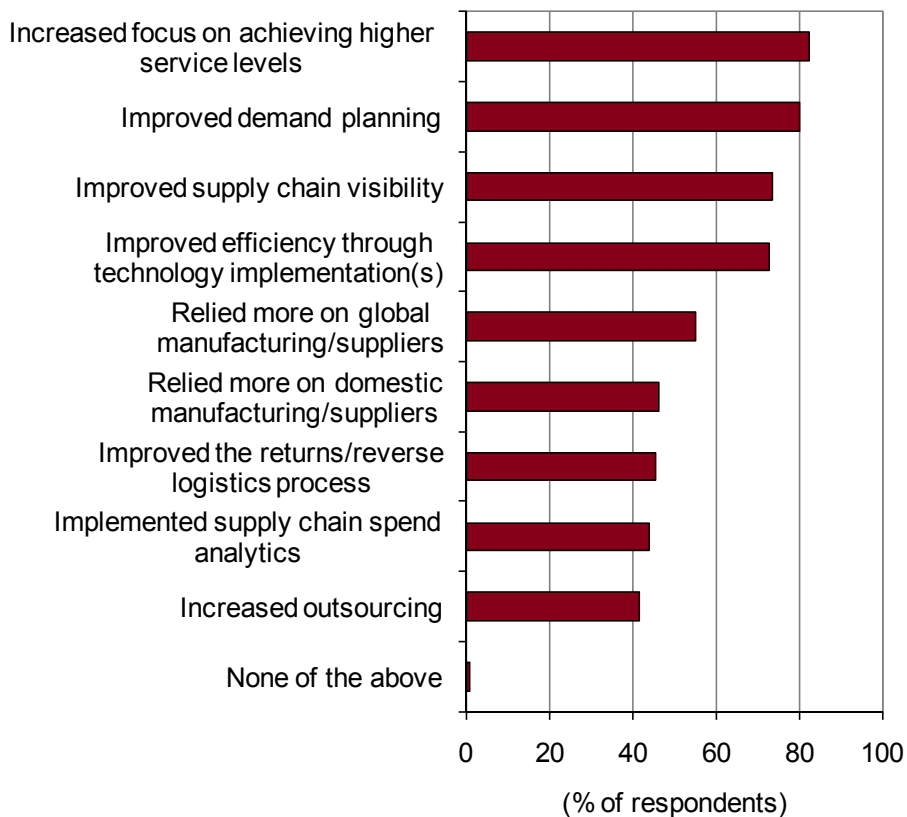
We explore each of these areas in this section.

First, though, we asked the high-tech companies to look at the responses listed in Figure 5 from the perspective of the next two years. Those responses are illustrated in Figure 6. Generally, the responses to "changes made" track well to those for "changes to be made."

**FIGURE 6**

### Supply Chain Changes to Be Made

Q. Please indicate whether your company plans to make any of the following changes in the supply chain during the next two years.



Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

A comparison of Figure 5 and Figure 6 indicates that the biggest jumps occur for demand planning and supply chain visibility, as shown in Table 5. Indeed, one disc drive manufacturer we spoke with stated, *"Supply chain visibility is very important for us. We have several initiatives to improve visibility."*

**TABLE 5**

Supply Chain Changes Made Versus Changes to Be Made

	Changes Made (% of Respondents)	Changes to Be Made (% of Respondents)	Difference
Improve demand planning	66	80	14
Improved efficiency through technology implementation	66	73	7
Improve supply chain visibility	62	74	12
Rely more on global manufacturing/suppliers	48	55	7
Implement supply chain spend analytics	37	44	7

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

It is interesting that high-tech companies feel that their demand planning capabilities need to be improved. While this seems reasonable on its face, and certainly may be true for some companies, at IDC Manufacturing Insights, we are increasingly taking the view that best-in-class companies balance forecasting capability with response capability. No matter how sophisticated the forecasting capability becomes, it remains a best guess for future demand. When the forecast proves to be wrong, as it invariably will, companies must be able to react to those variances in a way that preserves service levels. While the response in the past may have been, "Well, we just need to forecast better," the more sensible approach may be to recognize that there are some things one simply cannot anticipate and take appropriate action to ensure, through flexibility and resilience, that those forecast variances can be accommodated. This view was borne out by the disc drive manufacturer mentioned earlier: *"There is a lot of interest in tools to overcome the forecast accuracy/demand volatility kind of issue, and based on my observations, people are moving in that directions rather than fighting to improve the forecast."*

In this context, the expectation that high-tech companies will be investing more heavily in visibility capabilities moving forward is quite encouraging. Again, best-in-class companies that have greater

transparency both upstream and downstream in the supply chain are better able to anticipate issues before they become major problems — managing proactively rather than reactively.

**Future Trend/Growth Areas**

Areas that are quite interesting to get a feel for are those issues that are driving future trends and to which high-tech manufacturers should be paying attention. Indeed, what exactly are the issues that will be driving change in the supply chain? Let's separate hype from reality and get a sense of what companies are thinking.

We asked the survey respondents to weigh in on a number of topics that are currently high on the list of conversation topics. The results are listed in Table 6. Once again, cost sits at the top of the list, with 68% rating it as the top issue driving change, and over 94% listing it as one of their top 3 issues. After cost, things become more interesting. The earlier comments about improving demand planning notwithstanding, high-tech companies do seem to feel that "responsiveness" is the second most important issue driving change, followed closely by "rapid changes in demand."

**TABLE 6**

Issues Driving Future Change in the Supply Chain (% of Respondents)

	Picked as a Top 3 Issue Driving Change	Top Response	Second Response	Third Response
Responsiveness	95.2	40.0	40.0	15.2
Cost	94.4	68.0	17.6	8.8
Rapid changes in customer demand	92.0	34.4	41.6	16.0
Resilience	88.0	28.0	40.8	19.2
Innovation	84.0	21.6	30.4	32.0
Security	79.2	18.4	30.4	30.4
Sustainability	67.2	19.2	21.6	26.4
Increasing regulation	53.6	8.8	19.2	25.6

n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

Although "sustainability" is a hot topic these days, it came in as a somewhat lower issue. The fact that it was rated as a top 3 issue driving change by only 67% of the respondents may not mean that it is unimportant, just that at the present time it is less important than other issues — although, in one of the in-depth interviews, a mobile communications manufacturer made the following observation: *"We have a chief sustainability officer who looks over everything like a hawk."*

It is also important to note that sustainability projects increasingly have cost reduction implications and may be recast as such or may remain the focus of corporate social responsibility (CSR) efforts rather than in the supply chain. In the detailed interviews for this white paper, supply chain executives felt that many high-tech companies are still coming to terms with the implications of sustainability on their business, whereas issues like responsiveness and cost have a clear and obvious impact in the here and now.

We also asked the survey respondents about the source of growth for their products, both today and in the future. Those results are detailed in Table 7.

**TABLE 7**

Current and Future Sources of Growth for High-Tech Products (% of Respondents)

	Today	In Three to Five Years
North America	81.6	85.6
Asia Pacific (e.g., China, India)	58.4	71.2
Europe	52.8	60.8
South America	44.0	58.4
Middle East, Africa	22.4	35.2
Other	5.6	1.6

n = 12

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

Despite the fact that emerging regions get all the hype as the next great source of consumer demand, North America remains the most significant source of growth for high-tech products both today and in the future. This does not mean, of course, that high-tech companies can ignore emerging economy demand, just that the more mature



regions still drive significant growth and profits. Interestingly, at IDC Manufacturing Insights, we think this will drive some interesting longer-term trends in global sourcing. While low-cost country sourcing still predominates for high-tech manufacturers, rising wages in emerging countries and the growing influence of transportation costs on total cost may begin to change behaviors. There were no notable responses in the "other" category.

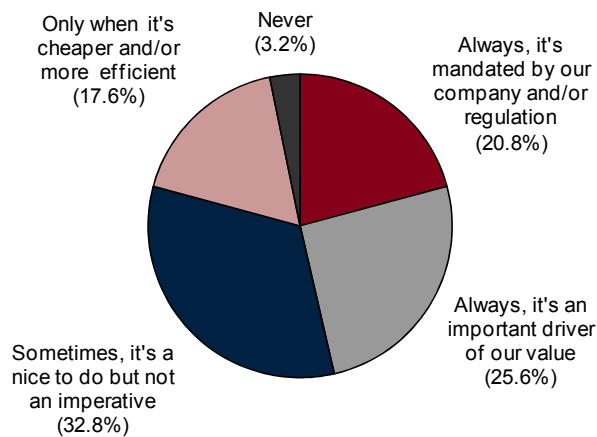
The final area that was covered in the future trends area of the survey was sustainability. We delved into this area in order to try to gain some insight into the degree that it is a factor in supply chain decisions, both today and in the future. Figures 7 and 8 provide the responses to these questions.

Clearly, the majority of companies consider sustainability, as one would expect, but only about 46% of the respondents suggested that it is a topic that is always considered. A further 33% said sustainability is "sometimes considered," and 18% consider it only when it is "cheaper and/or more efficient." This, frankly, is quite surprising. At the very least, we would have expected a majority of the responding companies to consider sustainability — even if, in the end, it proved to be less influential on the final decision. We asked supply chain executives this question in the detailed interviews, and their feeling was that while sustainability is very important for companies that have a notable brand name to protect, for others, it may not be a top criterion yet in evaluating business decisions.

**FIGURE 7**

**Sustainability as a Key Focus Area**

Q. *Sustainability is a growing industry focus area. To what degree do you currently factor environmental or social sustainability into your supply chain decisions?*



**n = 125**

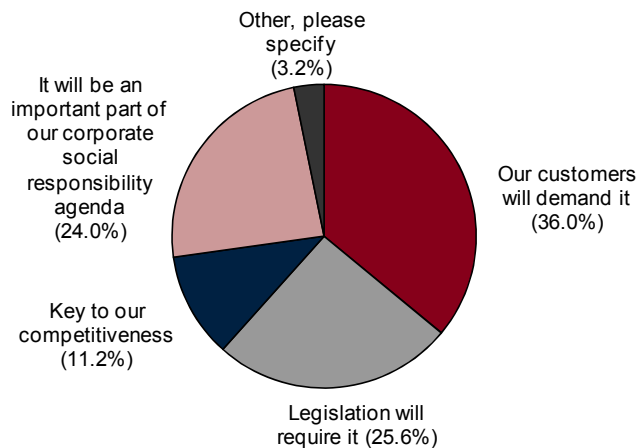
Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

Given that somewhat tepid response, the next question was particularly helpful in trying to understand how sustainability might become more influential in supply chain decisions. Detailed in Figure 8, the responses are quite enlightening. Clearly, customers, and particularly retailers, are starting to demand that high-tech manufacturers be more sustainable, and 36% of the respondents indicated that sustainability would be the primary driver. Beyond customer demands, respondents were largely split between "legislation will require it" (25.6%) and "it will be an important part of our corporate social responsibility agenda" (24%), with about 11% suggesting sustainability was a "key to our competitiveness."

**FIGURE 8**

**Primary Future Driver of Sustainability Activities**

Q. *In the future, environmental or social sustainability may play a larger role in supply chain decisions than it does today. What do you think will be the primary driver for your company to engage in greener practices over the next three to five years?*



**n = 125**

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

In terms of future trends, high-tech companies clearly are feeling the sting of the past couple of years as the recession's impact on their business took many by surprise. As a result, the capabilities that will most shape the agenda over the next few years proved to be shortcomings in 2008 and 2009, namely cost containment, responsiveness, and resilience (the ability to recover from interruptions in the supply chain). Sustainability, as we have pointed out in the survey results, while less important than these other capabilities at the moment, remains influential.

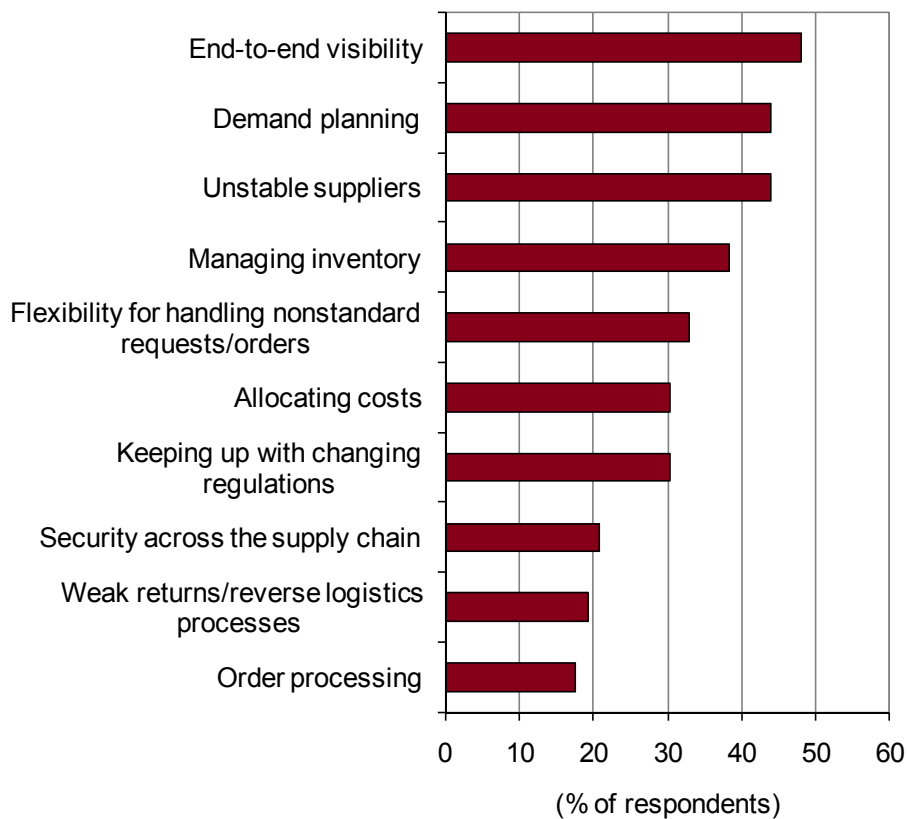
## Barriers and Challenges

High-tech supply chains are obviously not perfect, and we have discussed in some of the earlier sections of this paper where companies feel they need to focus. Yet, we have not explicitly talked about barriers and challenges — particularly those that go beyond the broader "my costs are too high to be competitive" problems. So we asked the survey respondents about a handful of topics that either have historically been problematic or are expected to be problematic in the future. The responses to those topic areas are detailed in Figure 9.

**FIGURE 9**

### Supply Chain Weak Links

Q. Which of the following are "weak links" in your supply chain?



n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

The lack of end-to-end visibility tops the list, followed closely by poor demand planning and unstable suppliers. We've talked quite a bit about the first two issues in earlier sections of this paper, so we will not repeat

those thoughts, but a few words on unstable suppliers are in order. While high-tech manufacturers have been significantly affected by the global recession, their suppliers have been hit even harder — particularly smaller suppliers that may not have the resources to weather a protracted downturn. Consequently, supplier insolvency has been a problem, especially where that insolvency interrupts supply of high volume or proprietary components. At IDC Manufacturing Insights, we have spoken with manufacturers that have had to financially support key suppliers — or even buy them outright. The learning here is twofold:

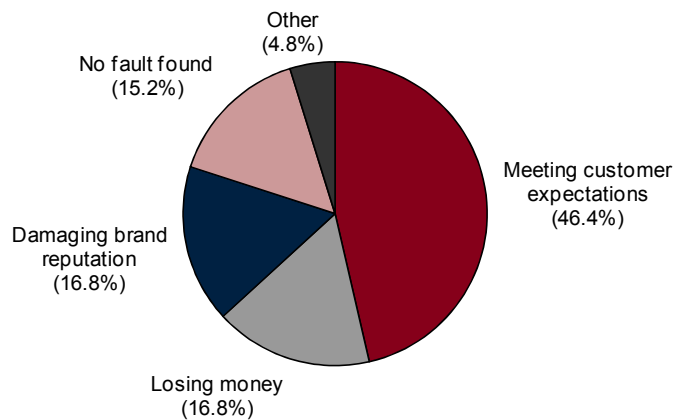
1. Ensure that you have some level of acceptable redundant supply or know where to quickly go for capacity in an emergency. Certainly, this adds some up-front cost, so a risk assessment is useful in determining where to act.
2. Include financial viability due diligence in the supplier qualification process, and have financial metrics in the service-level agreement so that early warning signals can be captured.

It is somewhat surprising that reverse logistics was not chosen more frequently as a problem. At IDC Manufacturing Insights, we view this more as a reflection of what has caused high tech the most acute pain over the past couple of years rather than assuming the problems have been solved. Because reverse logistics has been so problematic over the years, we asked some specific questions on the topic. The responses to those questions are shown in Figures 10 and 11.

**FIGURE 10**

Reverse Logistics Business Concerns

Q. *Reverse logistics is often challenging for companies. What is your biggest business concern?*



**n = 125**

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

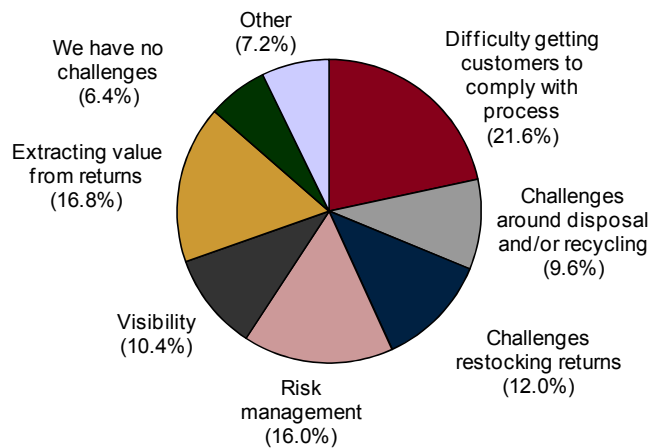
As shown in Figure 10, by far the biggest challenge is meeting customer expectations. Products, particularly "configurable" ones, are routinely returned because they do not meet the consumer's expectations in terms of performance, feature, etc. This is often an education issue. Further, another 15% of respondents said that "no fault found" is the biggest challenge — the product was returned as defective, when it actually was not. Again, this is often an education issue. So over 6% of the respondents reported the problem as some level of consumer dissatisfaction.

Once a product has been returned, it is up to the supply chain organization to properly facilitate the return process. This process is not without its logistical challenges, as illustrated in Figure 11. The responses are quite fragmented, led by "difficulty getting customers to comply with process" at 22%. Many high-tech companies outsource the reverse logistics process to a third-party provider, which certainly can help facilitate a more efficient process; however, clearly issues remain. Perhaps the most interesting perspective came from a high-tech medical devices manufacturer: *"I don't think we're worried about the returns themselves. I think we're worried about wasteful return processes: driving things like paying expedited freight on med device returns."*

**FIGURE 11**

**Reverse Logistics Supply Chain Challenges**

Q. Now thinking about reverse logistics, from a supply chain standpoint, what is your biggest challenge?



**n = 125**

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

There is little question, though, that high-tech retailers (and resellers) consistently complain that returns processes are cumbersome and inefficient — translating to poor policy compliance.

The final area of continuing challenge for all manufacturing companies is collaboration. This is a particularly interesting area for high-tech companies because the high-tech industry is so fragmented and distributed; indeed, there are already levels of collaboration in areas like innovation development that put other manufacturing segments to shame. Yet, in IDC Manufacturing Insights' conversations with high-tech clients, the view remains that collaboration has plenty of room for improvement.

We asked the respondents to identify the biggest impediment to increased supply chain collaboration. The results are illustrated in Figure 12. There are valid reasons for deciding not to collaborate, and the top response to our question is certainly one of those reasons: protection of intellectual property (IP). Yet, that option was still chosen by only slightly more than 25% of the respondents. Other responses suggest that greater collaboration is desired, yet things get in the way. The second and third most popular responses, "internal organizational barriers" and "poor data quality," suggest inefficiencies or challenges that are getting in the way of better collaborative relationships.

**FIGURE 12**

Supply Chain Collaboration Barriers

Q. *Supply chain collaboration can help solve some industry challenges, yet, for many companies, the concept poses issues and concerns. What is the greatest barrier to increased supply chain collaboration?*



n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

No one issue dominated barriers and challenges for high-tech manufacturers. There are a handful of areas, however, where there is a clear opportunity for improvement: end-to-end visibility, demand planning, better management of unstable suppliers, and better inventory management. Reverse logistics and collaboration remain "works in progress," and while significant progress has been made in the industry, opportunities still persist. This situation was summed up best by an electronics manufacturer: *"Typically we view collaboration on a case-by-case basis. We go as far as we need to go. We work extremely closely with some suppliers at a strategic level. And with others we're purely on a tactical basis. It's on a case-by-case basis."*

### Future Plans

Given the business conditions of the past two years, future trends, and challenges, what are the top business priorities for high-tech manufacturers in 2010 and 2011? We asked the survey respondents to rank their top business priorities for the next 18 months. Their responses are detailed in Table 8.

**TABLE 8**

Business Priorities for 2010–2011 (% of Respondents)

	Top Priority	Somewhat of a Priority	Not Much of a Priority	Not a Priority at All
Operate more efficiently/reduce costs	65.6	24.0	7.2	3.2
Improve margins	60.0	32.0	6.4	1.6
Invest in new product development/keep up with customer demand	46.4	36.0	12.8	4.8
Recover lost sales from the global recession	36.8	28.8	22.4	12.0
Improve your supply chain	32.0	43.2	16.8	8.0
Take advantage of market opportunity due to weakened competitors	29.6	38.4	19.2	12.8
Increase sales and/or marketing spend	29.6	32.8	28.8	8.8
Expand into new global markets/locations	23.2	33.6	24.0	19.2
Collaborate more with supply partners on new products	12.0	48.0	28.8	11.2

n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

Similar themes emerge. Reducing costs and driving improved margins are the top 2 responses, and investing in new products/keeping up with customer demand was third. Perhaps the most interesting results are that neither recovering lost sales nor taking advantage of weakened competitors is considered a top priority. This suggests that high-tech companies believe the postrecession levels are likely to be the "new normal" and that cost control and margin improvements are more important to ensure a healthy business moving forward. It also appears that high-tech companies will be much more conservative in market expansion and marketing expenditures.

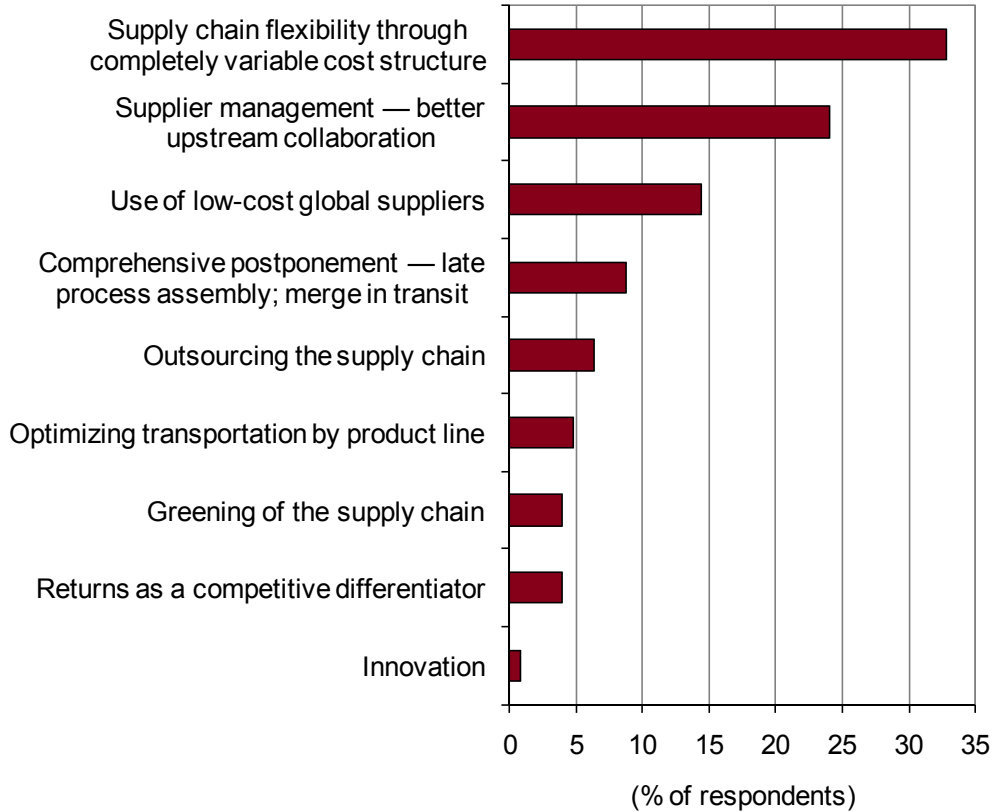
Given these business priorities for 2010 and 2011, we also asked respondents about their supply chain "secret weapon" that would contribute to their company's success in the future. The responses to that question are detailed in Figure 13. Certainly, the fact that the most popular response was "supply chain flexibility through completely variable cost structure" is not a surprise; high-tech companies have been focused on achieving greater flexibility for some time now. It was unexpected, however, that upstream collaboration with suppliers was the second highest response — particularly over outsourcing the supply chain. Given this view of upstream collaboration, the barriers endemic to better collaboration in high tech take on a new level of importance. The degree to which those barriers are driven by inefficiency or "old" thinking creates a new urgency that they be overcome.



**FIGURE 13**

The High-Tech Supply Chain "Secret Weapon"

Q. *What is the one aspect of your supply chain that will likely contribute to your success in the future?*



n = 125

Source: IDC Manufacturing Insights' *Change in the Chain Survey*, August 2010

It is also interesting that "greening of the supply chain" did not rate more highly. It certainly suggests that while sustainability is important, it is more of a complementary competency than a core competency — perhaps something that will be required for a seat at the table, but not something that closes the deal.

In the discussion of future plans, we are left with the distinct impression that high-tech companies are focused on getting their internal house in order while keeping an eye on core capabilities and core markets and preparing for the market to come. Perhaps the most insightful comment came from an electronics manufacturer: *"We sat down and we had a long think about where we were, where we wanted to be, what position we wanted to be in at the end of this current economic cycle. And we decided that we want to be ready to take advantage of the market that was coming. So we're working hard over the next 12 months to put in*

*place a far more flexible, robust, and responsive supply chain that will be able to take advantage of the upswing in the market, which will eventually come."* This is a completely reasonable approach given the past couple of years and the slowness of the economic recovery. Most high-tech companies' appetite for risk has been significantly curtailed, particularly where global expansion and share capture are concerned, but they are clearly looking to the future.

## **CONCLUSIONS**

The survey of 125 high-tech manufacturers that is the subject of this white paper comes at an interesting time. The global recession of 2008 and 2009 was the deepest and most severe of our working lifetimes (so far!) and has fundamentally shifted the way companies think about their businesses. Many saw double-digit sales declines that required company-saving actions. It is certainly no surprise, therefore, that given an inability, at least in the short term to medium term, to materially affect demand and sales growth, companies have focused on successfully preserving their bottom lines with aggressive cost containment and capital preservation efforts. The survey results clearly reflect this behavior.

---

### **Key Takeaways**

For each of the major sections of the survey, the key takeaways are as follows:

#### ***Business Environment***

- Unsurprisingly, cost containment has been the top business priority over the past two years as many high-tech companies attempt to offset sales declines. The top supply chain priority has also been to reduce supply chain costs; however, a higher percentage of respondents are picking it as a top priority than in prior surveys we have conducted.
- Despite the cost focus, high-tech companies have not lost sight of their customers; the importance of the customer relationship is increasingly "top of mind" for supply chain professionals.
- Despite the cost focus in high-tech supply chains, achieving higher service levels is both the most frequent change made over the past two years and the most anticipated change for the next two years. In the context of the growing importance of CRM in high tech, this is very encouraging.
- Improved supply chain visibility is the most important "new" capability for the next two years.

### ***Trend/Growth Areas***

- Beyond cost, responsiveness is viewed as the top initiative expected to drive change in the high-tech supply chain. Both "responsiveness" and "rapid changes in customer demand" speak to the need for supply chains to be better at reacting to unpredictability ("forecasting versus responding").
- Demand is growing in emerging regions, but North America remains the most significant consumer of high-tech products, both today and for the next few years. This is not to say that companies shouldn't be pursuing growth strategies overseas, but "ignore North America at your peril."
- Despite the hype, sustainability is less important than we would have guessed — for now! However, it is the opinion of IDC Manufacturing Insights that sustainability will play a more important role in the future.
- Many sustainability projects have been recast as cost-saving initiatives.

### ***Barriers and Challenges***

- Visibility emerges again as a clear issue for high-tech supply chains.
- Supplier instability has been an issue recently; consequently, companies are now considering financial viability more closely in both the evaluation process and the service-level agreement process.
- Reverse logistics is a surprisingly low barrier given the anecdotal pain the process seems to inflict upon high-tech companies, but there is a clear mandate for high-tech companies to do a better job of informing their customers about product features and operation.
- Most high-tech retailers (and resellers) consistently complain that returns processes are cumbersome and inefficient — translating to poor policy compliance.
- The top barrier to collaboration reflects a strategic choice: protection of IP. The second and third most common barriers appear to be challenges that should be overcome to drive growth in the industry.

### ***Looking Ahead***

- Reducing costs and improving margins are the top priorities moving forward (as they were for the past two years).
- Recovering lost sales is less important — suggesting that high-tech companies don't see significant growth opportunities in the short term to medium term.

- Two responses significantly outpaced the pack: variable cost structure and supplier collaboration.
- High-tech companies — and manufacturers in general — are looking to shed fixed costs wherever they can.

---

### **Essential Guidance**

Given the results of the survey, and the key takeaways summarized above, it is useful to think about what this means for high-tech companies: What pragmatic things might they consider moving forward?

We've pointed out that cost containment has been the top priority for high-tech companies for the past couple of years, and it will remain so for the immediate future, but there are some areas that received less focus in the survey that may be a source of "hidden" costs. IDC Manufacturing Insights would suggest looking a bit more closely at:

- The opportunities for cost savings in improving reverse logistics processes
- The degree to which sustainability initiatives can unearth cost savings (IDC research shows that companies listed on the Dow Jones sustainability index typically have a 100 basis point profitability advantage.)
- The prospect of sharing or eliminating costs through a better collaborative relationship with key suppliers or resellers
- The opportunity of moving to a variable cost structure in manufacturing, distribution, logistics, or IT (Outsourcing is not new, of course, but the ever-growing competence of third-party contractors may surprise you.)

Despite the cost focus, high-tech companies have not lost sight of their customers and have attempted, within budgetary constraints, to look for ways to drive improved service performance:

- Clearly, not all companies have done this, however; so we strongly suggest that high-tech companies look more closely at their focus on service and key customer retention to ensure that they are at least on par with key competition.
- As the global economy improves, targeted investments in service levels will drive significant reward.

Supply chain visibility is the most important "new" capability for high-tech supply chains for the next two years and will help to drive the responsiveness capability that was rated the top initiative expected to drive change in the high-tech supply chain. IDC Manufacturing Insights suggests high-tech companies consider the following:

- Evaluate the level of visibility you have both upstream and downstream in your business.
- Driving a more responsive supply chain can improve both service levels and cost performance.
- You may well have maximized your ability to generate an accurate forecast, so responsiveness and flexibility are the only ways to drive significant improvement.
- Look at the ways your company can utilize technology to drive improved visibility to improve efficiency.

Although attempting to recover lost sales and taking advantage of weakened competitors are not high business priorities for high-tech companies in 2010–2011, there are some clear opportunities in the marketplace:

- Consider using innovation to leapfrog competition in the marketplace.
- Are you emphasizing customer service across the breadth of your business — not just in sales and marketing but also in streamlining supply chain logistics processes and the full use of online business capabilities?

---

### **Copyright Notice**

Copyright 2010 IDC Manufacturing Insights. Reproduction without written permission is completely forbidden. External Publication of IDC Manufacturing Insights Information and Data: Any IDC Manufacturing Insights information that is to be used in advertising, press releases, or promotional materials requires prior written approval from the appropriate IDC Manufacturing Insights Vice President. A draft of the proposed document should accompany any such request. IDC Manufacturing Insights reserves the right to deny approval of external usage for any reason.