

WINNING TACTICS

Lessons from the Supply Chain Top 25

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This year's edition of the Top 25 Supply Chains published by AMR Research, now part of Gartner, contains some familiar names and some new faces. But beyond the list itself, the most important learning for supply chain professionals is that certain tactics consistently define the leaders, regardless of industry or geography. These are the tactics that lead to operational and financial success.

Since 2004, AMR Research has published a ranking of the world's leading supply chains, drawing interest from practitioners, academics, and publications around the world. We consider it a mark of the growing importance of the supply chain discipline that the Top 25 is referenced in publications in at least 19 different languages. For 2010, our latest ranking again identifies those big companies whose supply chains have come closest to an ideal we call the "Demand Driven Supply Network." And while some of the names are new to the list this year, the principles that separate these leaders from the pack are still largely the same.

This article will describe the Top 25 for 2010 (see list in sidebar) as well as the methodology used in the analysis. But its primary purpose is to elaborate on what tactics these leading companies demonstrate that allow them to excel.

What Is the Definition of Excellence?

Our methodology is based on a 50 percent score derived from three financial metrics (Return on Assets, Inventory Turns, and Revenue Growth) and a 50 percent score derived from polling of a group of supply chain professional peers (154 individuals this year) as well as 28 of our own analysts. The details of how these numbers are defined, sourced and normalized can be found easily enough in the full report, or on the Gartner website (www.gartner.com/technology/supply-chain/top25.jsp). What matters to this article, though, is the definition of excellence that we ask voters to consider as they complete their ballots.

Exhibit 1 captures the organizational ideal of demand-driven principles as applied to the global supply chain. This model has three overlapping areas of responsibility:

Supply management—Manufacturing, logistics, and sourcing.

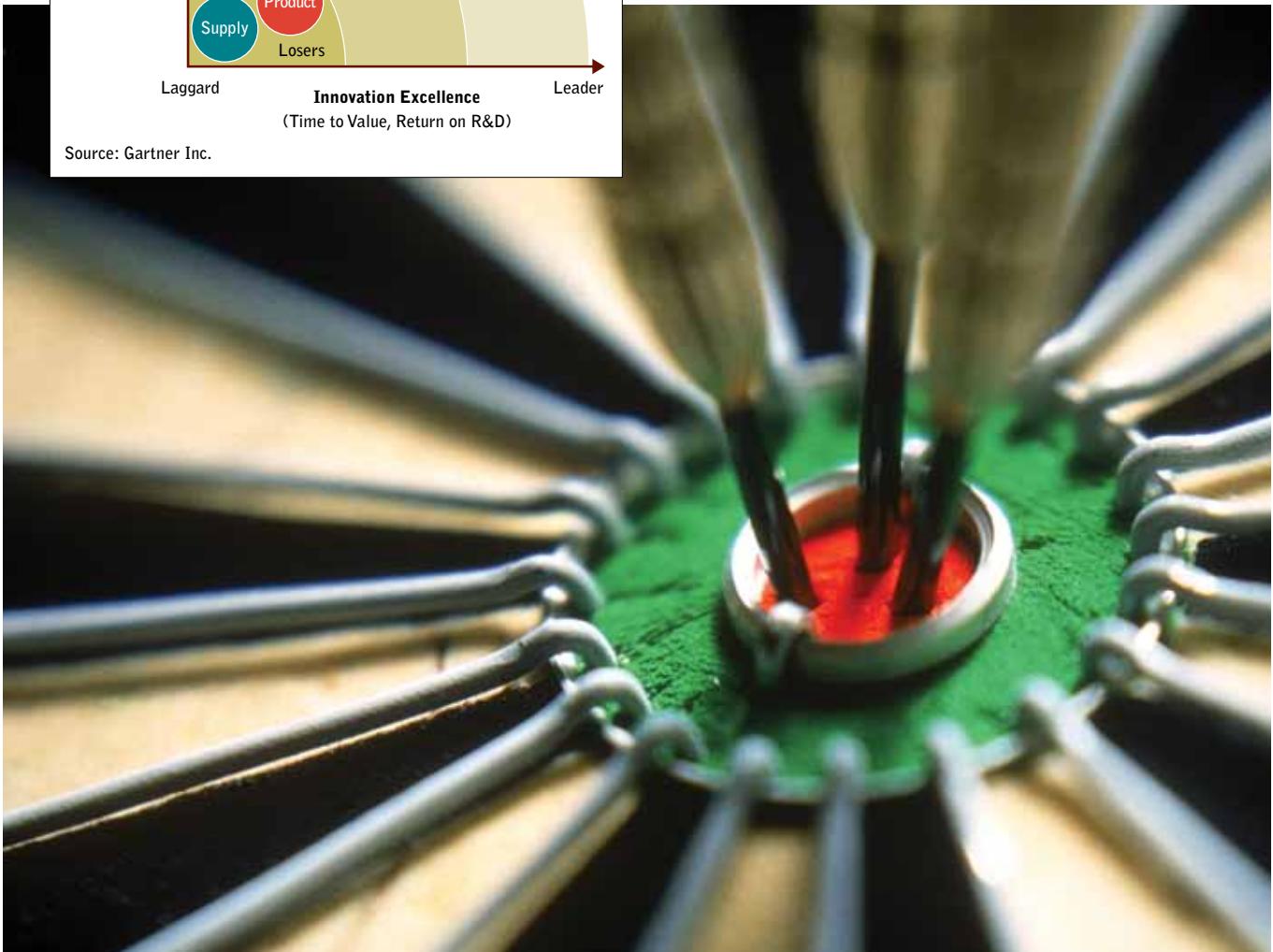
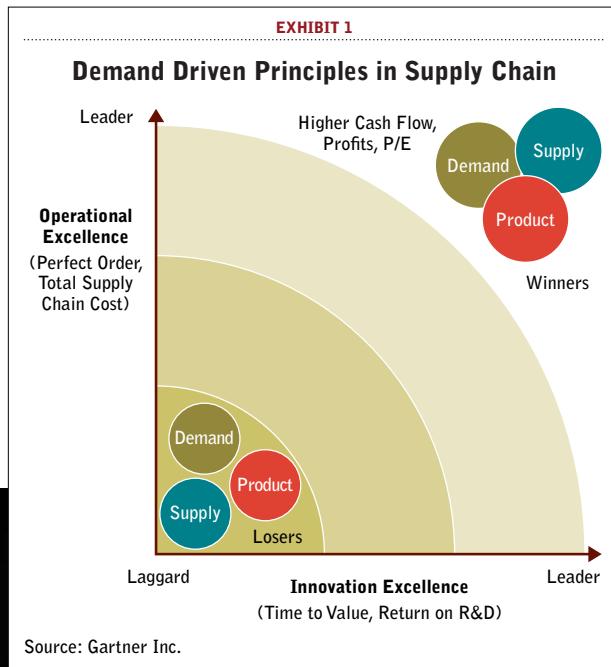
Demand management—Marketing, sales, and service.

Product management—R&D, engineering, and product development.

Excellence is a matter of visibility, communication, and reliable processes that link all three of these func-

tional areas together. When these processes work together, the business can respond quickly and efficiently to opportunities arising from market or customer demand. Defining characteristics of supply chains built to this design include the ability to manage demand rather than just respond to it, a networked rather than linear approach to global supply, and the ability to embed innovation in operations rather than keep it isolated in the laboratory. The demand-driven model is inherently circular and self-renewing, unlike the push supply chains of our factory-centric industrial past.

Two basic dimensions of measurement capture the totality of the best-in-class demand-driven global supply chain—operational excellence and innovation excellence. Operations, including delivering as promised to customers and keeping costs under control, are relatively easy to measure and unambiguous as business value metrics. We recommend a hierarchy of metrics—at the top of which are perfect order rate and total supply chain



cost—to monitor this dimension.

Of course, operational excellence has value only if customers want what is being made and shipped. To address this dimension, we look at innovation excellence. Although far harder to measure reliably, this dimension also can be managed with a hierarchy of metrics, in this case topped by time to value and return on new product development and launch (NPDL). Companies that manage to balance leadership on both these dimensions over time not only satisfy their customers but also earn better returns on capital invested, whether in assets or research and development.

Peer voters and our own analysts are instructed to use this definition of excellence when completing their ballots. The typical reference points used then are demonstrated operational and/or innovation excellence as experienced by the voter as a customer, supplier, competitor, or professional peer of the companies under consideration.

How to Be Among the Best

Having spent many years debating the merits of this list as it has changed through time, we can distill some important overarching lessons. The main learning is that certain tactics consistently define the best regardless of industry or geography. These tactics are not merely “best practices,” but instead provide the foundation for institutional learning that finds and delivers productivity advances faster and more consistently than everyone else. Mere best practice offers a guide to functional competence, but demand driven leadership depends on tactics that make for a superior competitor. The six tactics that separate the best from the rest are listed below:

1. Organization as a Value Chain
2. Segmentation of Supply Chains
3. Sales & Operations Planning for Balance
4. Embedded Innovation in Supply Chain
5. Extended Supply Chains as Networks
6. Hierarchies of Supply Chain Metrics

Some of these tactics are widely used and all are evolving as common threads in the fast-changing landscape of supply chain leadership, but few companies have really

Supply Chain Top 25 for 2010	
1.	Apple
2.	Procter & Gamble
3.	Cisco Systems
4.	Wal-Mart Stores
5.	Dell
6.	PepsiCo
7.	Samsung Electronics
8.	IBM
9.	Research In Motion
10.	Amazon.com
11.	McDonald's
12.	Microsoft
13.	The Coca-Cola Company
14.	Johnson & Johnson
15.	Hewlett-Packard
16.	Nike
17.	Colgate-Palmolive
18.	Intel
19.	Nokia
20.	Tesco
21.	Unilever
22.	Lockheed Martin
23.	Inditex
24.	Best Buy
25.	Schlumberger

developed mature strategies to string all together. We will examine each to provide a basis for practitioners looking to employ them as strategic initiatives.

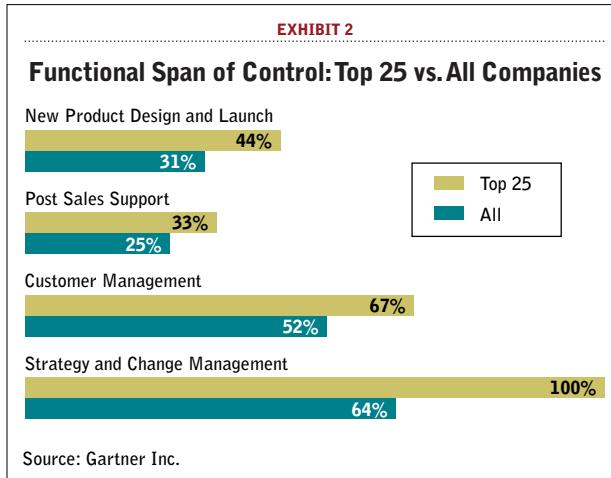
Organization as Value Chain

The traditional “push” supply chain of old was built around the needs of manufacturing and, in particular, the assembly plant. In this model, inbound materials management worked for the factory to assure availability of parts. At the outbound end of the plant, shipping served primarily to get finished goods off the dock and on to customers. Supply chain, as seen in this model, was an afterthought, clearly subsidiary to production. Many forces, especially those enabled by information technology, have conspired in the last few decades to change this dynamic and today it is more common for manufacturing report to supply chain than the other way around.

The best, however, have taken this a step or two farther and started to include within the span of control of supply chain a number of functions that go beyond even the basic plan, source, make, deliver flow of the SCOR model. Recent research we have conducted on organizational structure and functional skills shows that the best companies—those in the Supply Chain Top 25—are significantly more likely to include

such DDSN enablers as new product development and launch, customer management, post sales support, and strategy and change management as part of the responsibility of the supply chain organization (see Exhibit 2).

One of the companies that best exemplifies this tactic is Cisco Systems. Cisco has climbed in the rankings each year since 2004 (when they did not even make the original list) all the way to a No. 3 ranking in 2010. In terms of organization, the transformation has included establishment of the following: supply chain functions for new product development that work closely with Cisco’s engineering organization to coordinate fast and successful launches; customer service to not only fix problems in the field but track end-to-end resolution; and quality control. The organization has gone so far as to rename itself “Customer Value Chain Management” (CVCN) and employs directly about 14,000 people. It is the closed loop nature of this organization’s charter



that makes it different from a classically siloed structure. Rather than serve the business, Cisco’s CVCM mirrors the business and has in-built a learning cycle that processes lessons in detail at the point of customer use and brings those lessons back all the way to the point of renewing the product innovation cycle. Talk about going “back to the drawing board”—Cisco systematically lives this mantra in its demand driven value network.

Cisco is not alone. Many leading consumer packaged goods companies like Kraft, PepsiCo, and Colgate Palmolive have integrated their customer service and logistics organizations to focus not just on mere delivery, but also to deepen collaboration with retailers and bring lessons back to supply chain to improve both efficiency and value. NCR on the other end of the spectrum, as a capital goods manufacturer (ATM machines and other self-serve kiosk equipment) has recently added to the responsibility of supply chain, service parts, and logistics as well as a continuous improvement function. Both are examples of organizational structures extending the role of supply chain from cost center supporting the business to competitive weapon adding to the customer value proposition and accelerating organizational learning.

Segmentation of Supply Chains

A quip attributed to Henry Ford says that you could order the Model T in “any color you want as long as it’s black.” The essence of this idea is that mass production and scale matter more than customer demand. For much of the 20th century that philosophy made sense as manufacturing breakthroughs were bringing entirely new classes of product to consumers whose alternative often was nothing at all. Today, an almost infinite variety of product, channel, delivery, assembly, and source materials makes for a sometimes bewildering range of options for how best to build a supply chain. Companies in 2010 increasingly must answer the question of how many separate and different supply

chains are needed; one is rarely enough, while 10 or 20 is almost certainly too many.

Our research indicates that across industries the average number of unique supply chains ranges from four for consumer goods companies to seven for industrial chemicals. These vary according to a series of dimensions that define fundamentally different systems engineering imperatives to enable quite different outcomes at the point of demand. Breaking down the supply chain segmentation problem starts with asking what drives variability. In terms of the customer variables, include volume, prices, lead times, growth rates, and service expectations. In terms of channel variables, include wholesale vs. direct, developed or emerging markets, and product shelf life. In terms of the supply network considerations, include lead and cycle times, supply constraints, and supplier maturity or risk. Finally, the product itself implies certain variables for supply segmentation including process technology, lifecycle stage, volume, and criticality of use.

The best supply chain organizations are those able to tackle this complexity systematically— seeing the implications across all business decisions including where and how to source and deliver, how to price, when and how to promote, what service levels to promise customers, and even which orders to take. One classic example of a great supply chain organization that handles this complexity well is Hewlett Packard. As the world’s largest high tech supply chain, HP’s business ranges from complex, expensive capital equipment sold only to big corporate customers all the way down to consumer packaged goods available in convenience stores. Early on, HP realized that its approach to supply chain strategy should flip from a product or technology driven structure to a demand chain driven structure. The resulting organization took four customer segments—consumer, small business, public, and enterprise—and drove supply chain design backwards through channels, supply base, and ultimately, product itself to enable five fundamentally different supply chains to operate in parallel.

A similar logic was applied by fast-growing PC maker Lenovo of China, a company not currently in the Top 25 but one that is applying many of the practices of the leaders. The company’s segmentation analysis led them to develop (1) a responsive supply chain capable of build-to-order production across a large product portfolio, and complex custom services with short lead times and competitive costs and (2) another supply chain that uses a build-to-plan approach that leverages scale with suppliers in a narrower product range to assure lowest possible costs. This approach allows two fundamentally different business models to coexist—one that serves transaction

customers with a product driven model that consciously manages technology evolution curves to achieve sweet spot pricing and another that is relationship driven and allows customers with specific service requirements to select configurations customized to their business needs for a low total cost of ownership and high performance. One size does not fit all, and supply chain segmentation strategies are fast becoming one of the key competitive tactics that the best supply chain organizations use to win.

Sales and Operations Planning for Balance

Sales and operations planning (S&OP), perhaps the most widely known and used tactic common to great supply chains, is fundamental to the core of our discipline, which is balancing supply and demand profitably. Maybe because S&OP is so widely known and used, it is also too frequently misunderstood and therefore poorly applied. Field research on S&OP shows enormous variation in the composition of S&OP teams, the goals of S&OP meetings or processes, and the degree of maturity

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in technology tool support for this critical tactic. Recent survey data, for instance, shows that S&OP is by far the top investment area for supply chain organizations in terms of time and effort. Yet fewer than half use any type of technology support beyond basic spreadsheets and other office document and database tools. S&OP recalls the cliché about teenage sex—everyone talks about it, but few do it, and even fewer do it well.

Companies in the Top 25, however, often excel at this tactic, and this is because so many manage to master what AMR has called the “seven deadly challenges of S&OP,” listed below.

- Clarity of goals
- Alignment to strategy
- Reward systems
- The definition of a good decision
- Governance
- The role of the forecast
- Connection of planning to execution

For organizations with very mature S&OP processes, “Orchestrators” in our terminology, these challenges become advantages as goal clarity crystallizes around the conscious tradeoffs necessary to shape demand for optimum profitability, both immediately and strategically.

This allows a routine process—the weekly meeting—to rise above rote transaction optimization to the level of instantiating strategic plans as execution. Orchestrators also are able to redefine the role of the forecast with a governance model that comprises more than mere quota-carrying sales executives dueling with utilization-obsessed plant managers. The best take a complete view of “sales” to include go-to-market strategies and “operations” as inclusive of the total supply network, now and as new product generations come to market. The added degrees of freedom created by this wider definition of S&OP ownership does indeed require more intelligence (and data), but provides the organization with more ways to solve supply-demand balancing problems profitably. Only 14 percent of companies classify themselves as “Orchestrators.” Anecdotal evidence suggests this may even be too high.

One of the best practitioners of this tactic is Samsung Electronics, a regular in our Top 25 who for 2010 has risen to No. 7. S&OP at Samsung is not only fundamental at an operational level and highly visible to senior management, but is also supported with technology in a way that allows complex tradeoffs to be analyzed accurately and at high speed. The key is a tight linkage between supply chain execution systems that provide real inventory, capacity, cycle time, and cost data and a planning engine that can rerun scenarios generated in problem solving discussions to understand what different alternatives cost in terms of revenue, profit, on-time-in-full deliveries and more. S&OP is a vital tactic to master for companies looking to run with the best. Samsung’s example is one most companies can learn from.

Embedded Innovation in Supply Chain

Our three-circle DDSN model has been around since 2004 when we first published a report defining this model as “21st Century Supply on Demand.” The supply and demand circles capture the most basic principles of the supply chain discipline by linking “plan, source, make, deliver” with “attract, sell, service”. The explicit addition of a product circle representing the new product development and launch cycle of “define, design, promote, supply, support” was intended to force analysis of the role supply chain organizations must play for great product innovation to lead to great business results. Some of the obvious and vital pieces of this puzzle include conscious design-for-manufacture (DfM) and its many variants (design-for-service, design-for-sustainability, and so forth), supplier collaboration on design or

technology, and fast, reliable engineering change management. Embedded innovation is a tactic that the best supply chain organizations use to more quickly and reliably turn a better mousetrap into a profit platform for the business.

A common strategy among the best supply chain organizations today is known as “design anywhere, manufacture anywhere.” As a logical extension of globalized sourcing and networked innovation, this strategy is obvious. Most companies, however, are still a few years away from realizing it in practice. Survey data shows most companies today still rely on designs intended for manufacture in dedicated plants. Looking two years out, however, the most common strategy under development is the use of standardized design platforms for manufacture in multiple plants. Important embedded innovation tactics to support this type of strategy include product platform architectures with modular designs with standard fixture points for flexible manufacturing plus logical interfaces for partner subsystem connection. Also critical are commodity and component management tactics that support reuse and simulation as well as predictive analytics to improve decisions on tradeoffs between functionality and cost.

Microsoft is an example of a leading supply chain organization that has successfully embraced embedded innovation. The relationship with product development groups is described as a “partnership” by Brian Tobey, Microsoft’s Corporate Vice President for Manufacturing and Operations. As a company whose core business is software, Microsoft was considered for the Top 25 analysis in 2010 for the first time as its products businesses (Xbox, peripherals, etc.) became large enough to qualify. This heritage is part of the reason the company has been quick to exploit embedded innovation tactics. Relying heavily on third party manufacturing resources, and steeped as it is in platform development principles of a software business, Microsoft quite naturally operates in a design-anywhere, manufacture-anywhere model. Operationally this includes a sourcing approach that looks first for engineering expertise, second for business savvy, and only third to cost. Microsoft staff is located on site with suppliers to facilitate collaboration not only between the team from Redmond and locals at the plant, but among other suppliers in support of joint presentations made to the development organization.

In order to assure credibility and the ability to execute, Microsoft’s supply chain team recruits mechanical and electrical engineers with MBA training to close the loop between pure R&D, sourcing and manufacturing operations, and ultimately finance. The power comes not

only from enabling product innovation but from bringing supply chain expertise to bear with disciplines like commodity hedging, postponement strategies, and exploitation of the company’s strong balance sheet to offer flexibility to suppliers whose margins are often very thin.

Extended Supply Chains as Networks

Many a supply chain thinker has experienced the “aha!” moment of realizing that the chain is really a poor analogy for what we experience and operate today. The global supply chain in 2010 is connected almost everywhere with information technology that emanates data in volumes and at speeds that would have seemed impossible 20 years ago. The tactic great supply chain organizations use to stay ahead boils down to knowing how to add or remove nodes to their supply network quickly, cleanly, and with appropriate levels of connectivity. This does

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not mean total transparency to all parties as one of the most pressing challenges of this networked supply chain is intellectual property (IP) protection. Nor does it mean the opposite with arms length online auctions separating suppliers from the subtle needs of customers. The right answer is somewhere in between.

As with the case of S&OP, field survey data indicates that B2B investments are a top priority in supply chain—number one in terms of technology spend—but that the variety of business purposes, maturity of process standards, and range of data definitions indicates little consensus on how best to proceed. At a minimum, extended supply chains as networks require excellent demand visibility from anyone downstream and thorough supply visibility both to capacity and inventory. Our three-circle model is meant to remind supply chain strategists also that this network should include information flows characterizing what could be coming including design specifications, interface requirements, and problem solving loops like engineering change notices and requirements management documentation. Practitioners know of course that each of these linkages requires data, process, and accountability clarity. These mean money and time; plus the link, once established, opens a gateway that inevitably adds risk. Excellence depends on having a supply chain design based on the business strategy at the highest level that leverages whatever information backbone is in place.

One of the best examples of using extended supply

chain tactics for competitive advantage comes from a mid-sized company too small to qualify for our Top 25 analysis. It is Harris Corporation, a \$5 billion maker of communications systems for customers in defense, government, and broadcasting. As a small company with big customers delivering extremely complex and mission critical products, Harris must leverage the extended supply chain as a network or risk biting off more than it could chew alone. Of course, working for the military carries more than a little bit of IP risk as well so on- and off-boarding partners effectively has more urgency for Harris than for most. The tools

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that allow Harris to get this done include a custom built rules-based portal that connects the product lifecycle management (PLM) backbone to an off-the-shelf search engine and third party component portals accessing data from partners like Avnet Electronics. By quickly and precisely negotiating the engineering requirements of a potentially wide set of supply partners, Harris is able tap highly specialized expertise beyond their own four walls and win business with demanding, but deep-pocketed customers.

Hierarchies of Supply Chain Metrics

One thing all supply chain people seem to have in common is a passion for measurement. More than perhaps any other role in the modern business world, supply chain professionals understand the mechanics, the mathematics, and the meaning of metrics. They have access to and little fear of the information systems that provide the data. And, unlike scientists or engineers, they generally have millions of iterations for key metrics like perfect order or days of inventory to tinker with as they work to beat the numbers. Great supply chain organizations however do more than obsess over dashboards—rather they construct hierarchies that offer both precision at the execution level and distillation of meaning at the strategic level. The key to this tactic is recognizing that precise and granular measurement at the transaction level has value only if linked in a series of tradeoffs at increasingly abstract levels of business impact, and that decisive visionary goal setting at the top is unlikely to succeed without a clear diagnostic path to the bottom to solve problems in execution.

Also fundamental to success with this tactic is what we call “balanced excellence.” Several years ago we did a detailed functional benchmarking of over 70 companies across industries and meticulously gathered data

for over 40 operational metrics. In addition to providing a foundation for our most-read report of all time, “The Hierarchy of Supply Chain Metrics,” this research identified an important fact: best-in-class performance overall does not come from best-in-class performance across the board in sub-metrics. The supply chains that we found had the best top level performance typically were above peer across the board in component metrics, but rarely best-in-class anywhere else. The implication is that the best know how to short the occasional customer or pay a premium to expedite the occasional order as part of a higher level strategic understanding of how to win the war, not just the battle. Balanced excellence essentially means working the tradeoffs at lower levels of the metrics hierarchy to accomplish more at the top.

A real-world example of this tactic comes from Intel whose jump from a Top 25 ranking of No. 25 in 2009 to No. 18 in 2010 was the biggest movement of any company in the analysis. Intel’s supply chain transformation started with a new CEO, Paul Otellini, whose heritage on the sales side of the business contributed to a challenge to operations to “say yes” more often to customers. Intel’s technology leadership and engineering traditions had meant that, unlike most companies, product could be pushed to market and customers could be told to wait. In the worst case scenario a customer might try to order parts and be told, only after waiting two weeks, no.

At the top of Intel’s measurement hierarchy, then, in addition to traditional financial goals, was the mandate to increase the percentage of times a customer was given a quick “yes.” Diagnosing what made this difficult and addressing the causes, whether in the fab or in test and assembly, helped Intel’s supply chain team to develop the hierarchy needed to tune processes deep in operations that would allow sales to take orders quickly and profitably. The rate of “yes” answers to customers has tripled in the year or two since this mandate was laid down—and without a compromise in profitability.

You Are What You Do

Supply chain excellence is the focus of our annual Top 25 and the companies who have made this list over the years provide the rest of us with test cases and proof points of what works. For any supply chain leader intent on driving their organization to improve, the Top 25 forces a discussion about what it takes to make the list and whether they deserve to be among the best. By focusing on the six tactics described above any company should be able to deliver better financial results and, in the process, earn the respect of their peers. ☺☺