If Dell’s famed direct model for supply chain management is so obvious, why isn’t it replicated more easily? The answer is that Dell’s unfailing ability to execute is the direct result of its unique culture and processes—its DNA, if you will. Here’s an inside look at what makes Dell’s supply chain success so hard to copy.

By Brian S. Fugate and John T. Mentzer

Dell Inc.’s renowned direct-sales model is regularly cited as the key reason for its overall competitive prowess, and that model has been studied and analyzed by managers and researchers for years. Many conclude that Dell has unusual efficiencies in logistics to support its direct strategy. In fact, its advantages go much deeper than that.

In a series of detailed interviews with senior Dell managers, the authors have gained significant insights into how Dell’s supply chain operates and how it is continually improved. Why would Dell executives risk sharing such information? Because they know their competitive advantage stems largely from their ability to execute the direct model. “It’s like watching Michael Jordan stuff the basketball,” says one prominent Wall Street analyst who follows Dell closely. “I see it. I understand it. But I can’t do it.” Or as Ray Archer, Dell’s vice-president of Americas Manufacturing Operations explains, “Our DNA is our culture of execution.”

In practice, the technology giant intertwines a carefully incubated culture with a set of disciplined business processes that guide not only its supply chain operations but also the entire organization. It is the appropriate coupling of process and people elements that make Dell’s success so difficult to copy. (See Exhibit 1 on page 22.) Rivals may possess one or the other, but they won’t achieve comparable performance unless both elements are made to work well together.

The beauty of Dell’s system is that it can be replicated irrespective of the product category. Its supply chain DNA applies in any product market where technology can be standardized. In fact, that’s exactly what Dell is doing. As growth in the PC and server sectors slows, Dell has moved into printers, handhelds, projectors, and more. The company’s latest venture is in flat-screen televisions, where prices are relatively high and technology is widely available, making it ripe for commoditization.

In agreeing to be interviewed by the authors, Dell’s executives have not given their entire game plan away, of course. But the glimpses from their playbook will provide insights for supply chain managers who have taken to date a more conventional view of their responsibilities.

The DNA for Success

The pulse of Dell’s execution effort centers on increasing business velocity and eliminating waste. Dell employees are constantly focused on driving down backlogs, promoting best...
practices, and creating synergies among adjacent processes—as seen in cross-functional initiatives such as the design-for-manufacturability effort between manufacturing and R&D. This initiative successfully promoted product designs that are easier to assemble.

Breaking down the strands of Dell's DNA structure begins to show how Dell staff can achieve such gains. The company's supply chain competency comprises four qualities: demand management, internal collaboration, leveraging partners, and financial fundamentals. As Exhibit 2 on page 22 shows, each competency is dependent on smart, motivated people guided by purposeful business processes. Let's look in more detail at each.

**Demand Management**

Dell's *direct model* enables the company to excel at demand management. The process of selling directly to customers and building product to order creates opportunities for true real-time collaboration and synchronization between manufacturing and sales. By being in direct contact with the market, Dell can quickly see changes in customer demand. Synchronization (along with the recent shift to a seven-day-a-week operation) then allows Dell to respond more quickly to customer demand than its competitors can. Additionally, this true internal collaboration allows for highly accurate forecasts.

No matter how accurate they are, however, forecasts quickly become outdated. So Dell also focuses its efforts on managing demand by continuously rebalancing demand with supply. If demand exceeds supply, the company works with third parties to expedite supply of disk drives, power supplies, and so on from one or more suppliers. If the issue cannot be resolved on the supply side, Dell evaluates alternatives on the demand side. Through internal collaboration, Dell can change product promotions on its Web portal in minutes to shift customer demand to better match available supply.

The following is a good example of such demand management: When workers went on strike at U.S. West Coast ports a few years ago, imports from Dell's Asian suppliers were gridlocked. But Dell's relationship with its suppliers, along with the company's tight internal collaboration capability, allowed it to dodge the worst effects of the strike by shifting demand and finding alternate modes of transportation to bring components in from Asia. Not only was the demand shift and alternate transportation mode highly effective, but the speed of execution was unparalleled. Once the issue was identified, the strategic decision was made in the morning of the second day of the strike. Negotiations with sales segments were completed by noon, and the first shipment was
Dell’s DNA

made by that evening and managed over the next three months. By rapidly re-shaping demand to keep continuity of supply, Dell grew overall market share during the strike.

The ability to adapt quickly to changes in demand is crucial to good demand management. Dell is well-known for having a unique corporate culture that complements its aggressive approach to innovations and new ideas. In fact, the company has what has been billed as a “maniacal” approach towards execution. The ability to remain flexible is a critical skill for fitting into this culture. Dell management team’s speed of execution is a result of team members’ flexibility and ability to make fast decisions. As one Dell executive says, “It’s better to be fast and good than slow and perfect.”

Making decisions fast often means not always having all the information, but being willing to make “on-the-fly” adjustments. Successful employees learn to deal with ambiguity; they work as a team, promote new ideas, question tradition, and create an environment of continual change and advancement. “If you are ready to execute with an 80 percent solution, it means that you are willing to deal with ambiguity,” says Ray Archer, head of Dell’s U.S manufacturing operations. “It means that what I don’t know I’ll capture as I go.” Adds senior production-control manager Brian Desormeaux, “It is more important to have a process that can adjust after the fact.” Although Dell does celebrate successes, Dell team members have a philosophy of focusing most on future challenges. When the numbers change, Dell is ready to make adjustments quickly. That drive for action is quite possibly the most noticeable characteristic of Dell’s culture.

Internal Collaboration

Another key aspect of Dell’s success is its ability to collaborate internally. This competency is driven by a culture that values information sharing and empowers all employees. At Dell, “direct” refers not only to how the company sells but also to how team members communicate and attack issues. If a significant glitch reaches the attention of chairman Michael Dell or chief executive Kevin Rollins, for example, it is not uncommon for them to e-mail an employee several organizational layers down and ask, “What happened?” The culture calls for a fast and direct e-mail response to give reassurance that the issue is being addressed. Such direct communication contrasts with the norm in many organizations, where communication with senior management must be filtered through layers of reviews and approvals. “The ability to directly disseminate and react to information is our core competency,” says senior production-control manager Desormeaux.

Of course, such aggressive information management can also become a catalyst for micromanagement if not implemented properly. In practice, though, Dell employees are given the freedom to make key operational decisions to ensure that no opportunities for meeting customer expectations are lost due to hierarchical constraints. Leadership is expected at all levels of the organization, and hierarchies are far from rigid. In fact, assembly employees are often asked to present project briefings to Dell executives and occasionally even to the chairman or chief executive.

This direct communication and internal collaboration is often facilitated by the use of information technology. Much of Dell's collaboration capabilities rest on a technology prowess. Just one example is the Web portal mentioned earlier that allows Dell to collaborate internally and quickly change product promotions so that they match available supply.

Leverage Business Partners

Dell's culture and processes not only help the company collaborate internally but also help it leverage its business partners. Dell leverages its partners by linking suppliers' planning and execution activities with Dell's systems. The company uses information technology to gather and share a constant stream of data on supply and demand trends. On the supply side, Dell gathers real-time information about the inventory levels of its suppliers at various positions in the supply chain.
The suppliers are also expected to share information such as capacity outlooks and new technology drivers. In return, Dell provides direct signals of customer demand to suppliers and shares current and projected market shifts and sourcing strategies. At the same time, the company's extranet—its dedicated Internet link with outside partners—enhances collaboration on, and commitment to, forecasts. This visibility up and down the supply chain allows Dell to manage demand in real time.

Through internal collaboration, Dell can change product promotions on its Web portal within minutes to quickly shift customer demand to better match available supply.

Dell is also in the relatively new process of centralizing purchasing into a global function and relocating buying next to its suppliers. Furthermore, some supplier's logistics facilities are set up next door to Dell factories to function as access points. The supplier’s frequent deliveries ensure just enough on-site inventory to mirror the next two hours of orders.

In exchange for building partnerships and sharing information, Dell expects its suppliers to meet lofty performance goals. Once every quarter, Dell meets with each supplier to provide direct feedback on performance and future expectations. The supplier is given a scorecard, which compares the supplier against its industry peers on cost, quality, reliability, and continuity of supply. These detailed metrics help the company to manage its financial fundamentals to ensure superior shareholder return over time. Dell demands that its suppliers move fast and drive cost reductions. Also, because Dell has more short-term demand fluctuations than its competitors do, its suppliers have to be highly flexible.

When suppliers meet Dell's stringent guidelines, they not only get access to large-volume business but also receive training and development in improving their processes. “We can’t drive our suppliers to cost and speed improvements without giving them the ability to do so,” explains Dell’s Desormeaux.

The company also builds a true partnership by providing suppliers with real-time customer demand several weeks out. This helps them accelerate communication. Each week, suppliers get a new commitment from Dell for the following week’s supply. In return, the suppliers quickly commit back, which helps Dell to re-shape demand if needed.

By leveraging its partners, Dell can shift non-value-added processes upstream. Given Dell's model of selling custom-made computers, virtually all assembly for North American orders is postponed and performed in the United States. Americas manufacturing chief Ray Archer says, “The value that Dell adds is customization. If it’s not cus-
Dell’s DNA

overhead associated with selling. Additionally, the company’s top leadership team expects every Dell manager to know and be able to present current, detailed performance figures on a moment’s notice. He or she must be able to respond quickly to questions about performance problems. The practice has been likened to intensive-care unit nurses continually checking patients’ monitors; Dell managers update, check, analyze, and report operational numbers 24 hours a day, seven days a week. One Dell team member says, “Everyone, from the chairman to the factory associates, knows the four key measures and actions that need to happen each week.” These four specific metric categories are: quality, productivity, safety, and delivery. It is an unusual practice but one that has resulted in tremendous benefits ranging from cost savings to sales increases to quality control.

Dell’s culture emphasizes this focus on key business fundamentals throughout the company. Methods, such as the simplified idea generation (SIG), reward employees for decreasing costs and improving financial performance. The simplified idea generation is derived from standard business process improvement (BPI) practices—whose rigor had deterred associates from submitting improvement ideas in the past. (See the sidebar.) SIG involves assigning a sponsor—a manager—to help the associate follow through with his or her suggestion. If the improvements can be quantified, the idea is implemented. Dell has seen more than a 1,000 SIG projects submitted since the initiative was launched earlier this year, with many producing significant cost or process improvements. When Michael Dell or Kevin Rollins tours the factories, as they do once a quarter, associates will spend some time walking the executives through these business process improvement projects. These projects have allowed Dell associates to communicate hundreds of cost improvement ideas to those championing business process improvements and to be rewarded for their ideas.

Built on Core Capabilities

Although widely discussed as a model logistics organization, Dell has core capabilities that are representative of the broad realm of supply chain management. While the company carries out a number of fulfillment functions effectively, it partners with third-party providers for most its logistics needs. The four elements that work across people and process dimensions go far beyond any definition of logistics. At Dell, supply chain management is truly viewed as a strategic capability: it drives coordination with, and in many instances it includes, activities such as marketing, sales, finance, and information technology.

As the Dell case demonstrates, sustainable competitive advantages are a function of how effectively a business can create and intertwine its processes and people to produce unique capabilities to match its market segments. Dell’s competitive DNA may be impossible for other companies to “clone,” but the authors firmly believe that there are many lessons to be learned—not only about the value of effective execution but also about the value of the interplay between processes and people.

Authors’ note: The authors wish to thank the many Dell executives who participated in the research for this article.

Business Process Improvements

Dell uses a formal Business Process Improvement (BPI) program—similar to General Electric’s Six Sigma—for continually driving major process changes. It was initiated in the late 1990s and is championed by Michael Dell and Kevin Rollins. BPI enables employees to develop ideas for improvement. Far beyond a simple suggestion box or a hit-or-miss invitation for new ideas, BPI is designed to continuously listen for, reward, and implement ideas that can make a difference to regular operations. Whether the ideas have a small, medium, or large impact, Dell will make them happen if they boost the bottom line or improve a significant process.

One recent BPI project led to a shift from brand-specific to generic factories—and to stronger customer service as a result. Previously, each Dell factory had built specific desktop platforms, with separate production planning processes for each. While that arrangement optimized the build process in the plants, the time to ship one model to customers on the U.S. East Coast from the Austin, Texas, factory and another model to the West Coast from the Nashville, Tennessee, plant resulted in significant transportation costs and relatively long leadtimes.

Championed by a “Black Belt” team member, the BPI project cross-trained employees, planned parts and orders in two locations, developed rules to balance production, and assessed appropriate tools to balance the routing of orders. One outcome of the project: a new “virtual” organization to coordinate both factories. With minimal investments in technology, both plants now efficiently produce both brands. The BPI project delivered product to customers more quickly. It also reduced transportation costs by optimizing the logistics network, which improved the balance of capital by load-balancing the factories and made for a better employee experience by reducing overtime during peak seasons.

Business Process Improvements

Dell uses a formal Business Process Improvement (BPI) program—similar to General Electric's Six Sigma—for continually driving major process changes. It was initiated in the late 1990s and is championed by Michael Dell and Kevin Rollins. BPI enables employees to develop ideas for improvement. Far beyond a simple suggestion box or a hit-or-miss invitation for new ideas, BPI is designed to continuously listen for, reward, and implement ideas that can make a difference to regular operations. Whether the ideas have a small, medium, or large impact, Dell will make them happen if they boost the bottom line or improve a significant process.

One recent BPI project led to a shift from brand-specific to generic factories—and to stronger customer service as a result. Previously, each Dell factory had built specific desktop platforms, with separate production planning processes for each. While that arrangement optimized the build process in the plants, the time to ship one model to customers on the U.S. East Coast from the Austin, Texas, factory and another model to the West Coast from the Nashville, Tennessee, plant resulted in significant transportation costs and relatively long leadtimes.

Championed by a “Black Belt” team member, the BPI project cross-trained employees, planned parts and orders in two locations, developed rules to balance production, and assessed appropriate tools to balance the routing of orders. One outcome of the project: a new “virtual” organization to coordinate both factories. With minimal investments in technology, both plants now efficiently produce both brands. The BPI project delivered product to customers more quickly. It also reduced transportation costs by optimizing the logistics network, which improved the balance of capital by load-balancing the factories and made for a better employee experience by reducing overtime during peak seasons.