

Case Study for Supply Chain Leaders: Dell's Transformative Journey Through Supply Chain Segmentation

Matthew Davis

Faced with ever-changing customer needs, product commoditization, unique global requirements and new, low-cost competitors, Dell embarked on a three-year journey to segment its supply chain response capabilities. The company designed its supply chains based on a mix of cost optimization, delivery speed and product choices that customers value, while aligning internally across all functions to execute against this vision.

Key Findings

- Dell's market and business strategies changed, requiring the company to move from a single supply chain to a customer segmentation supply chain approach.
- A unified, cross-functional business strategy with collaborative, decision-making processes across sales, marketing, product design, finance and supply chain is essential for segmentation.
- Segmentation is enabled by a cost-to-serve (CTS) methodology to dynamically allocate costs to business decisions, highlight net profitability and drive the right actions for each supply chain.
- Supply chain segmentation is a multiyear journey enabled by the development and alignment of organizational skills to the needs of the journey's different phases.

Recommendations

- Start with segmentation of your company's customers and channels to understand the different demand rhythms and cycles. Focus on decreasing the time required to sense or shape changes to end-customer demand.
- Begin the design of your supply chain portfolio by isolating and quantifying costs of an end-to-end supply chain that optimizes for operational efficiency. Repeat this analysis for supply chains that require different supply chain responses (for example, agility rather than efficiency).
- Use a clear set of goals to align cross-functional metrics and incentives to your portfolio in order to drive the right business decisions for each supply chain.

© 2010 Gartner, Inc. and/or its affiliates. All rights reserved. Gartner is a registered trademark of Gartner, Inc. or its affiliates. This publication may not be reproduced or distributed in any form without Gartner's prior written permission. The information contained in this publication has been obtained from sources believed to be reliable. Gartner disclaims all warranties as to the accuracy, completeness or adequacy of such information and shall have no liability for errors, omissions or inadequacies in such information. This publication consists of the opinions of Gartner's research organization and should not be construed as statements of fact. The opinions expressed herein are subject to change without notice. Although Gartner research may include a discussion of related legal issues, Gartner does not provide legal advice or services and its research should not be construed or used as such. Gartner is a public company, and its shareholders may include firms and funds that have financial interests in entities covered in Gartner research. Gartner's Board of Directors may include senior managers of these firms or funds. Gartner research is produced independently by its research organization without input or influence from these firms, funds or their managers. For further information on the independence and integrity of Gartner research, see "Guiding Principles on Independence and Objectivity" on its website, http://www.gartner.com/technology/about/ombudsman/omb_guide2.jsp

- Refine and govern your supply chain portfolio continually by establishing cross-functional review processes between sales, marketing, product design, finance and supply chain.

WHAT YOU NEED TO KNOW

Dell revolutionized supply chain management with its direct model, configure-to-order (CTO) manufacturing, just-in-time inventory model and impressive cash-to-cash conversion cycle. The company has been a staple in the top five of the [AMR Supply Chain Top 25](#) every year since it started in 2004. But demand for commoditized products, changes in customer channel preferences, emerging market growth, component cost declines, a more capable supply base and globalization have challenged the singular supply chain.

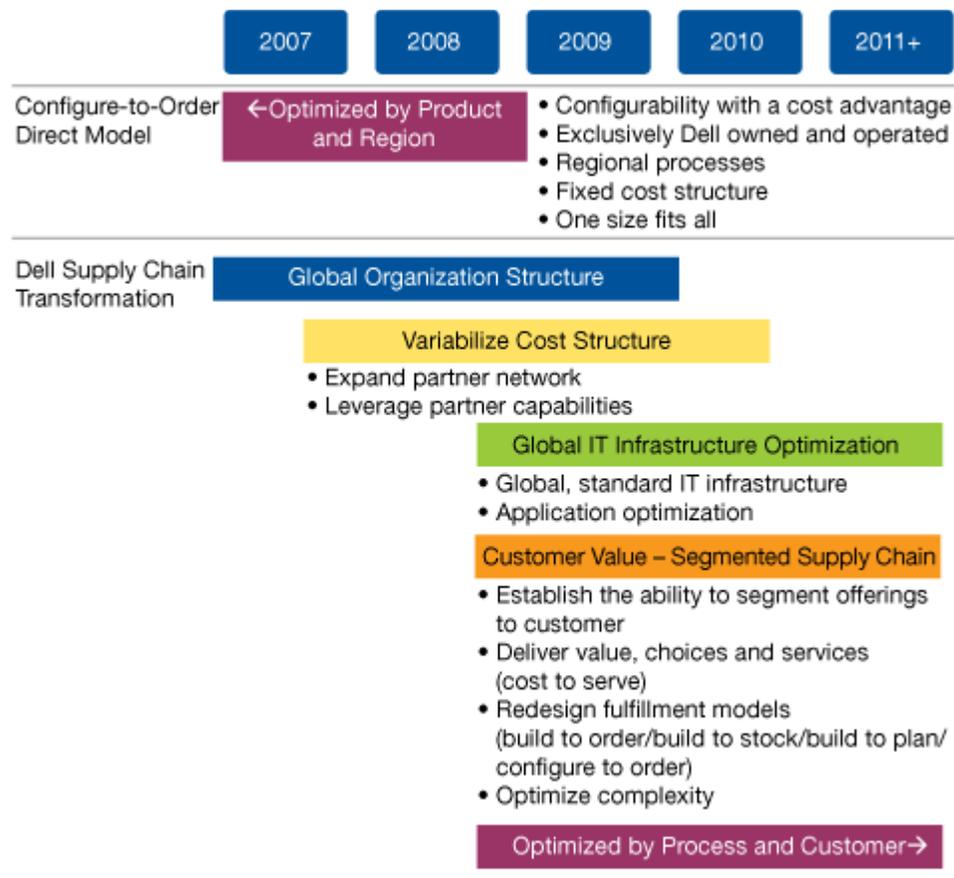
In this case study, Gartner examines Dell's period of transformative change as it segmented customer requirements to create a portfolio of supply chain capabilities that provided multiple offerings focused on cost efficiency, speed to customers, choice of features and personalization and/or services. We follow the journey from the perspective of key leaders within Dell's supply chain transformation: Annette Clayton, VP of global operations and supply chain; Jennifer Loveland, disruptive strategy senior manager; Perry Noakes, director of global business excellence and lean; and Bruce Raven, global supply chain optimization senior manager.

CASE STUDY

Introduction

Dell responded to changes in the market by determining how different segments of customers derive value from its products and services. The company's analytics showed customer demand had become quite complex. The B2B market demands predictability, speed, customization, services and precision delivery. Consumers want multiple channel options, the ability to personalize for niche products, low-price options and devices that deliver content. This complexity will only increase as content and virtualization begin to drive the market. To address these issues, Dell segmented its supply chain as part of a multiyear transformation (see Figure 1).

Figure 1. Dell Supply Chain Evolution



Source: Dell (November 2010)

Historically, Dell was organized by products and/or region. As part of globalization, the company aligned organizations to customer value consistently across regions. In 2008, it began to leverage its partner network of suppliers where capability, quality performance and cost had improved. Dell would retain its in-house network where strategic differentiation was valued by customers and provided a competitive advantage. This work was a precursor for and an enabler of supply chain segmentation. In this research, we review the "Customer Value — Segmented Supply Chain" portion of Dell's transformation.

The Challenge

Dell had three main challenges to solve in end-to-end segmentation:

- **Long-term demand sensing to continually refine its portfolio** — Dell's direct model provided extensive customer insights, with over two billion online customer visits per year. But the company also had to figure out how to predict where the market was headed, define a three-year outlook of customer needs and support multiple global customer groups.
- **Supply chain design for a new environment** — It had to address a changing business strategy, product commoditization and proliferation, emerging markets, global supply networks and multichannel sales and fulfillment.

- **Complexity reduction** — Dell had to carve out an end-to-end, "low-cost" supply chain focused on efficiency, while maintaining its responsive heritage provided by its CTO capability. This required simplification of product designs, configuration management and planning processes.

Approach

The transformation moved through six different phases, resulting in a governance process focused on continued improvement and portfolio evolution:

Identify Customer Values

Dell used historical customer knowledge from contracts, survey results, business intelligence (BI) data and platform sales to begin its customer-centric view of value. To provide a robust, outside-in perspective, Dell invested in resources to complete detailed configuration profitability analysis, targeted surveys and external marketing insights from multiple industries.

Understand Dell's Strengths

As Mr. Raven stated, "We had to figure out what we needed to change and what we needed to retain based on what customers value. We were trying to identify what skills would be most important for long-term supply chain excellence." The company identified the following core competencies: deep customer relationships, supply chain agility and a lean culture that continually improved and automated processes.

Understand the External Environment

An external perspective was provided through partnerships with Dr. David Simchi-Levi (then professor of engineering systems at Massachusetts Institute of Technology), Dr. John Gattorna (then a visiting professor at Cranfield School of Management), cross-industry leaders and various consulting firms. According to Ms. Clayton, "The perspective of looking outside in is extremely important. We learn from who we believe is doing things best from a variety of industries." Dell's competitive analysis focused on price points by configuration, new market entrants, such as tablets and smartphones, emerging market requirements and supply chain services.

Chart Clear Course and Benefit

With a good understanding of customer requirements and the direction of the market, Dell began to design the new supply chain portfolio. It started by defining the supply chain extremes of agility and efficiency (see Figure 2).

Figure 2. Chart a Clear Course: Align Product Strategy to Customer Values

Product Variety	Low	High
Customization	Limited	Based on Customer Value
Forecast Accuracy	High	Low
Volume by Configuration	High	Low
Cost of Lost Sale	Low	High
	Configured by Dell	Customer Configurable

Source: Dell and Dr. David Simchi-Levi (November 2010)

This basic framework was the first step in creating a range of supply chain capabilities. The key was to define the right number of supply chains to fill the gap between most efficient and most agile. Dell went through an extensive exercise to complete this analysis. The company defined 18 potential options, and then simplified to six supply chains. The final result was a portfolio based on a mix of configurations predetermined by Dell and products configurable by customers, paired with "need it now," planned and flexible delivery cycle times. Dell also aligned the warranty and services processes to its new portfolio for complete, end-to-end customer solutions.

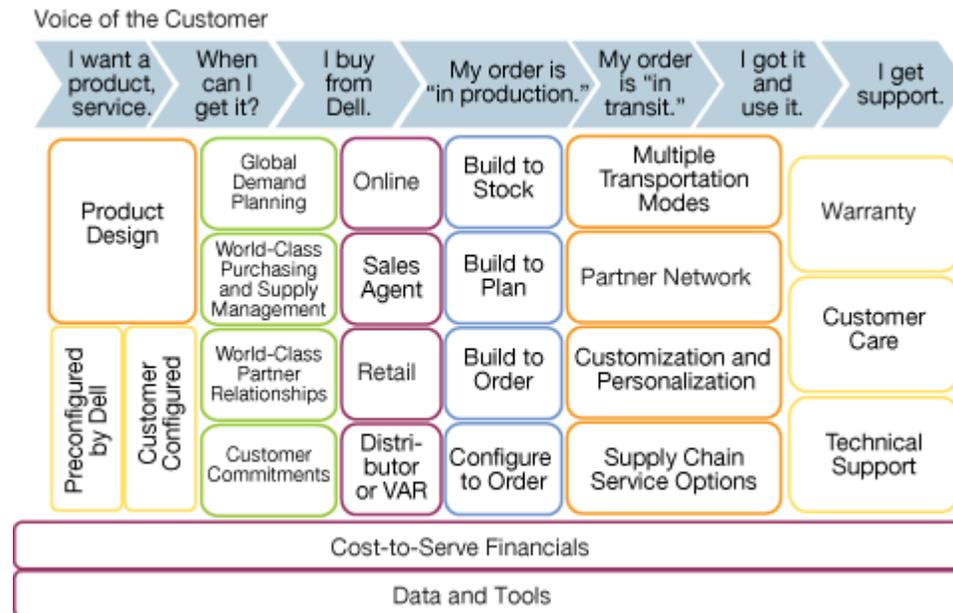
Engage the Entire Organization

Segmentation of Dell's supply chain required extensive cross-functional collaboration: IT transformation had to occur in tandem with supply chain transformation, supply chain had to work with finance to enable a CTS methodology and process, and supply chain capability had to be fully integrated with product design throughout the development cycle. Plus, aligning the go-to-market plans with sales and marketing was essential to driving the desired demand patterns.

Continue to Govern and Refine Portfolio

The result of Dell's customer channel and supply chain segmentation was the creation of an end-to-end model in which multiple capabilities can be arranged in unique configurations to satisfy specific customer requirements (see Figure 3):

Figure 3. Engage the Entire Organization: Transformation Is End to End



Source: Dell (November 2010)

Dell used the "voice of the customer" value chain to identify the range of capabilities it would need in different functions. The different combinations of these capabilities is what creates the unique supply chain offerings.

The company created a standard process to introduce new supply chain requirements. It has a dedicated center of excellence (COE) that intakes requirements from sales, marketing and operations, evaluates the customer benefit and business strategy, and then enables the right changes within product development and supply chain design. Critical to this effort is continuous improvement that utilizes lean methodologies to maintain a focus on what the customers value and conducts benchmarking to provide an outside-in perspective.

Results

Dell's transformation yielded both financial and qualitative gains:

- **Stronger connection to customers** — In Ms. Clayton's words, "We knew we had to leverage supplier capability and scale, but still control the things that are most important to the customer. We redeployed our resources focused on controlling imaging, delivery and parts of design. We enable best value solutions ... giving the customer the exact value they want."
- **Complexity reduction** — Product options had become too complex. In response, Dell reduced configuration complexity in line with customer requirements. As Mr. Noakes stated, "Product offerings had exceeded customer requirements and were adding unnecessary cost and responsiveness waste in the supply chain."
- **Improved internal collaboration** — Identifying and managing functional interdependencies have driven collaboration across product design, supply chain, marketing, sales and finance. Dell also simplified interactions by centralizing global operations, while aligning to customer verticals.

- **Cost reduction** — "We have realized approximately \$1.5 billion of operational cost reductions between 2008 and 2010. This transformation was a critical factor in that reduction," said Ms. Clayton. Key drivers in this improvement were leveraging supplier capability and scale, building out new capabilities for the customer, simplified design and reductions in complexity.
- **Improved forecast accuracy** — The reduction in complexity and better connection to demand resulted in a three-times increase in forecast accuracy at the product, platform and configuration levels.

Critical Success Factors

Dell identified four critical success factors:

- **Start with customer value** — Historically, customers were segmented by verticals (e.g., consumer, corporate, government and small business) as well as regions and size. Dell had to look across an aggregated view of these existing groupings to identify shared values relating to product features and supply chain capabilities. A global view was critical to this process. As Mr. Noakes stated, "[Our] growth markets are not in traditional regions. We need to adjust our model to the new requirements."
- **A unified, end-to-end business strategy** — The Dell team stated this effort was "truly a corporatewide transformation." Key to this was the ability to clearly articulate the need for change, the vision and the role of different organizations. To support this communication, several leaders started an internal blog to keep people up to date.
- **Executive sponsorship** — The segmentation strategy and potential benefits were shared with the entire executive leadership team to drive cross-functional alignment. Vice Chairman Jeff Clarke was the sponsor of the effort throughout design and implementation. Ms. Clayton added, "We conduct a weekly, cross-functional executive production governance [meeting] where we spend two-thirds of our time on the future quarters and one-third of our time on how our current quarter plan is being executed. Our planning has become much more unified and strategic."
- **Dedicated COE** — Dell identified 12 key work streams. Each has a VP sponsor, with small teams coordinating and program-managing the change. The company also integrated lean techniques to look across work streams, with four to five value streams to ensure the customer needs were being met by the proposed changes.

Lessons Learned

According to Mr. Noakes, "Dell's industry-leading supply chain history has given us the skills to be agile and flexible. It's this history that provides the framework and skills to reach the next levels of success and supply chain leadership."

Five lessons are critical for this evolution:

Implementation of Supply Chain Segmentation Is a Journey

Dell recognized that the scope of this change would require a multiyear plan and investment. The company set short-term goals to show traction against the overall plan. A key component of the strategy was to pilot capabilities manually, while designing the automated, scalable solution in parallel. This allowed quick wins to build momentum and mitigated risk during the transformation.

Different Skills Needed Throughout the Journey

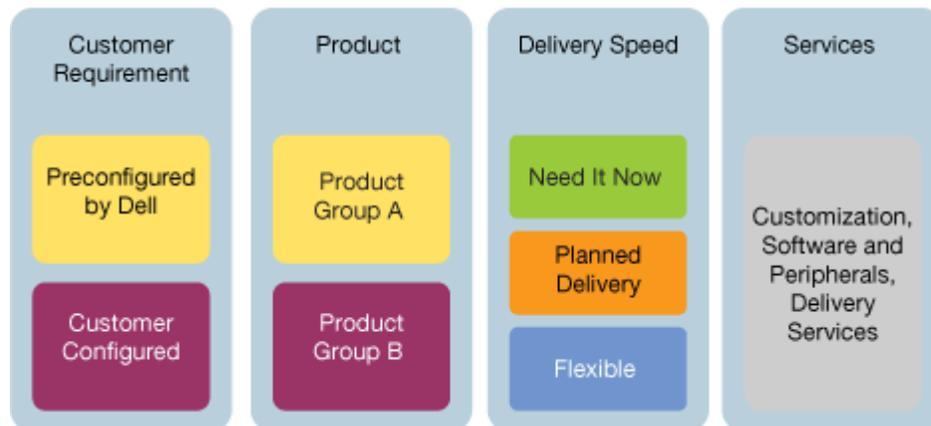
Dell had to adapt the following COE skills:

- **Phase 1: vision/design** — The skills required are an outside-in perspective focused on customers, knowledge of market and other industries, end-to-end supply chain design and business acumen.
- **Phase 2: change management** — The skills required are process design, lean/Six Sigma expertise, data analytics, systems optimization, process automation, program management, organizational influence and communication.
- **Phase 3: orchestrating the ecosystem** — Phase 3 denotes a continuously evolving organization focused on translating customer needs to supply chain capabilities by coordinating and influencing internal and external partners.

Cross-Functional Participation Very Necessary

Communication across organizations can be difficult, so messages must be tailored to each group. As Ms. Loveland stated, "The broader the span of communications, the more simplified the message needs to be." For example, Figure 3, which mapped the portfolio, was simplified when shared across functions (see Figure 4).

Figure 4. Engage the Entire Organization: Target Messages by Organization



Source: Dell (November 2010)

To ensure long-term, cross-functional collaboration, Dell integrated supply chain design into existing product design processes and created a phase-gate review process to standardize future changes to the supply chain. "Phased releases drive step-function improvements, rather than constant adjustments," said Ms. Clayton. Finally, metrics across all functions were aligned to the goals of the supply chain portfolio.

Transparency of Data Essential

Dynamic visibility to customer requirements, demand, cost, materials, forecasts, product road maps, revenue mix and multiple views to margin are required to drive the right decisions.

A Balanced Scorecard With Clear Accountability Required

Ms. Clayton said, "We are now able to better balance customer metrics with operational metrics. We're aligned to customer value. For example, we can even provide better 'green' solutions for customers by balancing logistics nodes with cycle times to take advantage of low-carbon transportation and packaging methodology."

The key for Dell is that end-to-end segmentation is an ongoing, evolving journey. Optimization is never done, but rather continuously realigned to changing customer values.

RECOMMENDED READING

"Supply Chain Segmentation on the Increase, With High Tech Leading the Pack"

"Supply Chain Strategy for High-Tech Manufacturers: The Handbook for Becoming Demand Driven"

"Supply Chain Segmentation Helps Plexus Evolve From Contract Manufacturer to Product Realization Partner"

"Top Supply Chain Planning Processes"

"Key Issues for Cross-Industry Supply Chain Leaders, 2010"

REGIONAL HEADQUARTERS

Corporate Headquarters

56 Top Gallant Road
Stamford, CT 06902-7700
U.S.A.
+1 203 964 0096

European Headquarters

Tamesis
The Glanty
Egham
Surrey, TW20 9AW
UNITED KINGDOM
+44 1784 431611

Asia/Pacific Headquarters

Gartner Australasia Pty. Ltd.
Level 9, 141 Walker Street
North Sydney
New South Wales 2060
AUSTRALIA
+61 2 9459 4600

Japan Headquarters

Gartner Japan Ltd.
Aobadai Hills, 6F
7-7, Aobadai, 4-chome
Meguro-ku, Tokyo 153-0042
JAPAN
+81 3 3481 3670

Latin America Headquarters

Gartner do Brazil
Av. das Nações Unidas, 12551
9º andar—World Trade Center
04578-903—São Paulo SP
BRAZIL
+55 11 3443 1509