# f<u>ortna</u>

WHITE PAPER

## Supply Chain Design Optimizing Your Supply Chain for Bottom-Line Results

WWW.FORTNA.COM

This report is provided to you courtesy of Fortna, Inc., a leader in developing and delivering successful distribution strategies and engineered solutions. For additional information about how Fortna can help your company, please call us at (800) Fortna-1 or visit our Web site: www.fortna.com The design of any supply chain must take into account the balance of customer service and cost. On the surface this might seem to be a simple task. However, design decisions are complex due to multiple, underlying variables. Likewise, the balance of these variables must also take into account a view of future needs and alternatives that will drive various options in how best to develop a flexible, cost-effective, service oriented, "implementable" supply chain design.

#### STRATEGY

It is from your business strategy, operating model definition, and performance targets that your supply chain should be designed. Your design must also consider the broader definition of "supply chain" to include supplier's suppliers, customer's customers, and key vendor relationships to ensure that the best balance between cost and service is achieved and that future supply chain requirements may be flexibly accommodated.

Business strategy can be defined as the intentional choice of where, how and when to compete as well as what not to do. The "how to compete" question generally has the greatest impact on the development of a company's business strategy, operating model and supply chain strategy. For example, your method of competition reflects the value proposition your company offers to its customers (e.g., lowest total cost, differentiation (product, service, etc.)).

The operating model defines the approach and means by which a company organizes and works with suppliers, internal operations and customers. For example, your decisions regarding geographical coverage, business unit structure and the use of "shared services" in support of various internal operations (e.g., procurement, supply chain planning, manufacturing, logistics, distribution) define certain boundaries and opportunities in how you go-to-market.

Performance targets are defined as the desired, measurable outcomes of your

business actions. They drive behavior throughout the organization that leads to growing and sustainable shareholder value. For example, revenue growth, operating margin, inventory turns, and return on assets are critically dependent on your supply chain design.

Hence, you must design, implement, and execute your supply chain strategy based on your business strategy, operating model definition, and performance targets. Likewise, your supply chain must be flexible. Changes will occur in your business, and your supply chain design must be able to best support ever-evolving market requirements, supplier capabilities, and customer needs.

#### Design

Typically, supply chain design initiatives are necessary for two key reasons:

1. Changes in the business, and

2. The need to adjust the balance of cost and service.

#### CHANGES IN BUSINESS

- Volume Growth (or Erosion)
- New (or Lost) Customers or Requirements
- New (or Changed) Distributor Capabilities
- New (or Reduced) Services
- New (or Retrenched) Geographic Markets
- New (or Rationalized) Products
- Acquired/Merged (or Sold) Businesses
- Desire to Outsource/Insource Logistics

Leading companies tend to look at their supply chain strategy and design as not only a means to balance cost and service but also as a competitive weapon. "How can our supply chain provide differentiated service, speed to market and flexibility while meeting service and cost goals?" If done correctly, supply chain management can be viewed not only as a contributor to meeting cost and service goals, but also provide a means to enhance revenue and provide enhanced market penetration and branding. Just think of companies like Wal-mart, Dell, and Best Buy. Each of these companies has leveraged their supply chain capabilities as a key instrument to their continued success.

There are a number of key questions that need to be answered in support of supply chain designs. The following diagram highlights some of the key questions across multiple process and functional areas within a typical company. (See Next Page)

#### SERVICE

The definition of service within supply chain operations is often measured by metrics like fill-rate, lead-time, perfect order, etc. In the design of a supply chain strategy or distribution network, the definition of service is often measured in days to deliver to service areas. Unfortunately, "rules of thumb" often drive design and implementation decisions, resulting in a "one size fits all" approach. However, customers do not come in just one size, and when surveyed they will

#### Adjust Balance of Cost and Service

- Rationalize Inventory Investment
- Minimize Transportation Costs
- Minimize Warehouse Space or Labor Costs
- Minimize Administrative Costs
- Minimize Tax Burden
- Minimize Fulfillment Error Rates
- Increase On-time or Fill Rate Percentages
- Increase Flexibility

often indicate service expectations that are defined by goals like promise date, delivery windows, etc. This disconnect has led to far too many supply chains that have been designed based on "rules of thumb" that are not meeting customer desires because they have not accounted for the "voice of the customer."

Likewise, it is often expected that improved services means increased cost. However, changing a distribution center network can result in both improved service for a particular region of the country AND yield freight, tax or other savings

Ιμράςτ	Area	Key Questions
Strategic	Service Requirements	What are the key service metrics our supply chain must meet? A clear definition of service expectations drives the strategy.
	Distribution Network & Flow Path Design	What is the optimal flow of goods from suppliers to our customers, what are the optimum number, loca- tion, and types of facilities needed throughout the network to meet service targets at minimal cost and tax burden?
Tactical	Inventory Deployment	How can we rationalize inventory levels at each site, maximize visibility, and ensure tight inventory control?
	Transportation Management	How can we optimize mode, carrier and service selection at each of our facilities to minimize freight costs?
	Warehouse Management	What capabilities must our facilities have, who will manage them, and what expectations do we have for performance?
Organizational	Stakeholder Management	What organizational infrastructure do we need to implement, sustain, and continually improve the network, and how can we best cultivate change?
Technical	Logistics Information Systems	What enabling technology is needed for manage- ment, execution, and visibility, and how will it inter- face with core systems?
Financial	Financial Management	Where are our opportunities for improvement in costs, tax reduction, and asset utilization, and what investments will need to be made?

that offset or surpass the additional cost for distribution.

In short, an optimal supply chain design requires a clear definition of service expectations and goals. Once defined, they become the basis from which further analysis can be performed and decisions made.

#### Соѕт

Supply chain costs include a variety of variables that need to be understood and captured in order to properly define the impact of alternative designs and/or scenarios. Typical costs to consider and factors that impact them include:

- Distribution center costs
- Fixed costs equipment amortization,

lease vs. own, lease termination, capital depreciation

- Variable costs labor, utilities, supplies
- Transportation cost mode, service level, distance, load factors
- Inventory carrying costs cycle stock, safety stock, in-transit
- Systems warehouse management, transportation management, yard management, interfaces
- Taxes state and local tax rules (income, property, payroll), unitary and throwback rules.

The definition of supply chain costs provides a means to create a "baseline" by which all other alternatives and scenarios can be compared.

In addition, implementation costs for one time investments and project management, change management, and material and equipment transfer must be considered if, when, and how to change the supply chain design.

#### OTHER CONSIDERATIONS

In addition to cost and service, there are other practical factors to consider when designing your supply chain. A few examples are as follows:

- Growth Plans
- Acquisitions
- New Products
- New Markets

- System Capabilities
- Accessibility
- To Customers
- To Suppliers
- To Availability Carriers
- To Available Warehouses
- Company Culture and History
- Appetite for change
- Allegiance to current location(s) and partners
- Willingness to invest in time and resources to enable change

An "optimal" supply chain design on paper that cannot be practically implemented or sustained is far from optimal to the business. Therefore, it's imperative to weigh the sensitivity of these and other practical considerations in designing your overall roadmap for changes to your supply chain.

#### RESULTS

In summary, your supply chain design must enable and support your business strategy, operating model definition, and performance goals. Focus must extend beyond costs and include the "voice of the customer," tax implications, and alignment with the practical constraints and capabilities of your organization to support recommended changes in the supply chain design.

Supply chain design serves as a key enabler to your business strategy, operating model, and performance against measurable targets. However, only if the proper approach is applied and the balance of all variables are considered will the results provide a means to develop a flexible, cost-effective, service oriented, "implementable" supply chain design.

#### HOW CAN FORTNA'S EXPERIENCE BEN-EFIT YOU?

#### Implementable Supply Chain Designs

Not theoretical PowerPoints, but real world improvements outlined with a practical implementation plan for success. The Fortna design team will outline the process, systems, organizational and facility changes required to fully realize the benefits of your supply chain improvement plan.

#### Respectful Process

Fortna realizes that you best know your business and you already have ideas on what needs to be done. Fortna provides a business-focused process that leverages your team's ideas with our industry and supply chain expertise. This combination respects your perspective while leveraging Fortna's tools, practical experience and business-focused process.

#### You are not Alone in your Industry Supply Chain

Fortna realizes that you live in an eco-system of partners, suppliers and customers, not to mention competitors. Their initiatives and capabilities impact your supply chain designs. Fortna is mindful of their business influence and considers their impact each step of the way.

#### Much More than Modeling

Modeling is only a piece of the puzzle. Fortna uses modeling tools in conjunction with solid process re-engineering, along with systems, organizational and financial analysis to create real plans for improvement. Our design considers the capabilities, direction and changes required to support the right supply chain strategy to support your business plans.

Fortna will review, outline, and estimate the impact of changes to:

- Processes (demand planning, import, distribution, customer service, returns, etc.) what changes are needed?
- Systems what modifications/updates to your systems are needed?
- Organizations what changes to your organizational design, skills and roles are needed?

• Facilities – what changes are needed to meet customer service and capacity?

#### Business Focusaed Analysis

Fortna realizes that supply chains are

not successful unless they support and enhance your business goals. Our Supply Chain Design effort is a complete business view that balances:

#### **Quantitative Factors**

- Inventory costs
- Facility costs
- Labor costs
- Transportation costs
- Operating costs
- Asset cost
- Cash flows
- Financial impact

#### **Qualitative Factors**

- Customer service
- Scalability
- Increased Market Share
- Levels of service
- Responsiveness
- Flexibility
- Ability to Maintain
- Ease of Management
- Ease of Implementation
- Organizational Capabilities
- Competitor Capabilities/Direction
- System Capabilities/Direction

#### **Contact Information:**

John A. White III, Executive Vice President, Fortna, Inc.

email: johnwhite@fortna.com

phone: (770) 630-1720

Tom Tiede, Director, Fortna, Inc. email: tomtiede@fortna.com phone: (678) 778-3968

### **ABOUT FORTNA**

FORTNA IS ACCOUNTABLE FOR YOUR COMPLETE SUPPLY CHAIN SOLUTION.

We design, implement and support complete end-to-end solutions for our clients through supply chain consulting, material handling systems implementation and systems selection and implementation.

Our business-goal focused approach balances systems, processes, people and assets to optimize your supply chain and help you improve competitive advantages, achieve cost savings and improve service levels to your clients.

Our integrated services and unmatched supply chain design tools have provided long term and trustbased relationships with clients in a wide range of industries including multi-channel retail, consumer products, electronics, industrial products and third party logistics. We invite you to visit www.fortna.com.

ATLANTA, GA | CLEVELAND, OH | MESA, AZ | NASHVILLE, TN | ORANGE, CA | READING, PA



© 2006 Fortna Inc. All right reserved.