

Your Supply Chain  
is Not Ready  
for the Emerging  
Demand Economy

# The Point

*By Robert P. Burrows III*

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## The On-Point Group

The On-Point Group helps companies begin to grapple with the epic changes required by our society's movement to a demand economy, unlocking hidden value in their demand/supply environments. Using simulation, combined with cost optimization and experienced-honed business wisdom, we help companies realize their best supply networks, focusing on value, not merely optimizing costs.

We employ proven business principles in transforming the sales and operations planning processes, from marketing through supply. Our toolkit includes inventory modeling, collaborative procurement, demand balancing, operations strategy and infrastructure rationalization, all orchestrated to demonstrably improve operations.

In this monograph, Robert P. Burrows, managing principal, addresses the urgent need for senior management in supply, manufacturing, procurement and distribution to rework its business model to accommodate the impending demand economy and implement a customer-centric culture throughout the enterprise.

## Your Current Supply Chain is Obsolete

We are at the forefront of a profound shift in the ways of commerce: The economic engines of supply and demand are trading places. Demand-based economies are emerging in the United States and Europe. The business of buying is shifting from a centuries-old, supply-driven construct, moving rapidly to a customer-centric one.

The signs are abundant, once you begin observing. The change is being fueled by the increasingly knowledgeable consumer, who has increasingly ready access to an enormous amount of product, price, service and delivery information, as well as increasingly lower-cost products available from a highly diverse set of sources.

In a supply-based economy, production dictates what is available to purchase, and cost is the key economic driver. Conversely, in the demand economy, customers will dictate what they will purchase, and value is the key. Most businesses are not ready – not primed for managing to demand and availability, but only for optimizing cost and supply. And being the low-cost producer or having the highest market share – strategies which made companies win in the 1980s and '90s – will no longer succeed.

A demand economy looks vastly different from the vanishing supply economy. Customers will insist upon specialized products for unique situations and tastes. Product-line complexity will be broad. Demand variability per product will be higher by orders of magnitude. Seemingly excessive service levels and response times will be the norm. Free cash flow will be under extreme pressure, as customers stretch payments, producers from the Pacific Rim ship only on cash, and slow-moving inventory expands. (See Exhibit 1.)

### EXHIBIT 1

#### Characteristics of the New Economy

	Supply Economy	Demand Economy
<b>Customers</b>	Demographic grouping defined by PR	Multi-dimensional groupings segmented by value proposition
<b>Demand</b>	Viewed as linear; long wait times tolerated	Increasing in volatility; short time expectations lead to instant gratification
<b>Products</b>	Fixed designs by R&D; SKU rationalization	Customer-determined features, complexity enabled
<b>Supply</b>	Linked, lean, reactive	Networked, adaptable, orchestrated
<b>Operations</b>	Cost reduced, out sourced, off shored	Value fulfillment focused, short response times required
<b>Finance</b>	P&L focused, cash generated by bully tactics	Balance sheet focused, quality of numbers, key measure is net free cash after capital expenditures
<b>Organization</b>	Functional silos	Value-segment-focused domains

Supply chains as designed and installed over the past decade are rapidly becoming obsolete.

In such an environment, supply chains as designed and installed over the past decade in most companies are rapidly becoming obsolete. These supply chains were designed to optimize costs, not value. Long replenishment lead times are tolerated at the expense of the flexibility and responsiveness that soon will be prized. Suppliers are forced to react to a high velocity of manufacturing resource planning change orders, rather than become collaborative partners. Supply chains are sequential, linear and resistant to complexity, the latter being the element the demand economy values most.

The supply chain is a delivery mechanism for the old, expiring economy. The problem is an outdated approach toward planning logic and a chain mentality, both of which inhibit collaboration and cripple flexibility. Enterprise resource planning (ERP) systems universally have scheduling and inventory replenishment logic dating back to the 1960s –push systems that will fail miserably in the new demand economy. Continuing to rely on current practices will substantially erode service levels and will make total cost to serve prohibitively high.

An entirely new operating approach is required to turn emerging problems into strategic advantage, taking a positive step toward sustainable profitability and increased wealth for all stakeholders: planning around networks, rather than chains. These networks will be characterized by orchestration of the actions necessary to meet customer demands. Adaptability, collaboration and networking will be the key design objectives and will become increasingly more valuable. Time advantage will replace market-share advantage as a competitive strategy. Likewise, customer value will replace cost advantage as the key performance metric. There are major implications for organization structure, systems, external relationships and the physical side of the supply operations.

Such networked planning can decrease purchase cost, which amounts to half the cost of goods sold. The alternative – staying cost-oriented and supply-driven – plays right into the hands of the super-low-cost production engines in the Far East.

The changes required are extensive and will touch many areas of your organization. Fortunately, implementation is more counter-intuitive than difficult to accomplish. A new, more customer-centric, thinking process is essential, along with a fundamental change in culture.

### **Requirements of the Demand Economy**

While the full evolution to a demand economy will take the next five to 10 years, trends like made-to-order jeans, both online and at storefront, show we are in transition right now. Over the next decade, customers will increasingly be able to buy whatever they want, whenever they want it. The pressure for product innovation will grow constantly and will proceed in shorter cycles and at a faster pace than even technological innovation. Consumers will be very adept at trading off price points.

There will be remarkably fewer companies. With prices at parity, those not differentiated will be crushed by costs and will become commodity-type companies. They will then experience consolidation or be pushed out by Far East competitors. (See Exhibit 2.)

## EXHIBIT 2

### Unsustainable Supply-Economy Situations

- Frito Lay, owning the salty snack market, pushes whatever new products it develops through its enormous shelf space. But customers are moving toward healthier snacks like Kraft's 100-calorie packs and whole-wheat cookies.
- General Electric has 65-percent share of the light-bulb market and enjoys a 30-percent price premium and an enormous gross margin. No one else dares start a price war because of the huge cost advantage GE has engineered into place. However, customers are now demanding energy-efficient light sources, such as florescent, and detail lighting, such as halogen.
- Budweiser bested Miller's marketing-savvy new ownership by using market share to out-advertise the competitor. But did the consumer ask for the ads? Specialist micro breweries continue to take share. Low-carb and no-alcohol-content products will be followed by many new demands.

### Divergent Demand-Economy Developments

- DVD and other electronics buyers can see and try a wide variety of product options and features at enlightened retailers like Best Buy.
- In excess of 85 percent of new car buyers seek in-depth feature and price information before shopping the dealerships. As a result, General Motors is changing its policies to eliminate the price haggling that alienates highly informed buyers.
- Consumers can review a store's inventory online and go directly to the retailer which has what they want, instead of settling for what Wal-Mart has on the shelf.

Product complexity will be forced upon producers increasingly and rapidly, and variability in customer demand will get dramatically higher. For example, one major department store is considering offering folding chairs to its customers ordered via an in-store kiosk. The chairs are now produced in China, available in either brown or green paint in one fabric. But the store's customers are demanding more. With an in-store kiosk, a wider choice of colors and fabrics would be offered for store pickup in about a week, sourced from a U.S. manufacturer. The Chinese would not be able to compete with the time-advantaged U.S. manufacturer. Further, the variety is transparent to the retailer and easy to accommodate at the flexible manufacturing plant. Inventory risk would be low and sales higher.

Similarly, the mundane and sleepy industrial maintenance, repair and operating (MRO) supplies market is being transformed by new, specialized service providers with technicians on demand and high-level emergency responsiveness using speedy Internet communications systems that connect on-the-floor parts-dispensing machines with an integrated network of supply partners.

Under such conditions, the role of supply management must change. A collaborative, adaptable and flexible approach will be required. Time to market, response time and lead times will be the critical drivers of performance. Long lead times will inhibit the ability to respond to changing customer demands. In addition, global sourcing for cost reduction will be counter-productive to time-sensitive customer demand. Time will also be the enemy in the face of higher complexity and variability.

### Costs Give Way to Value

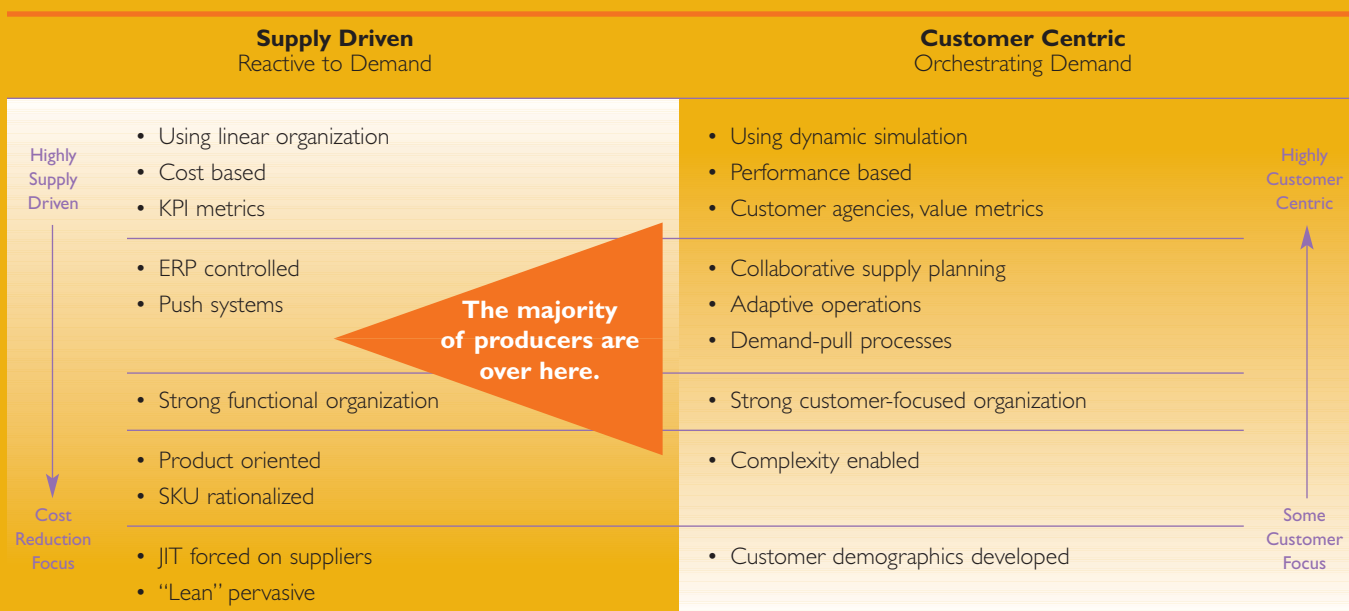
In the coming demand economy, customer centricity will replace the cost- and supply-driven construct of today. This will create opportunities to identify new strategies for gaining competitive advantage based upon value and focused on well-defined customer groups called value spaces.

Value spaces are not traditional market segments built on customer demographics and psychographics. Rather, customers are defined by how they use a product. Value spaces are not simplistic buckets, but how a customer creates value in its marketplace. Value spaces are defined by in-depth analysis of how the customer uses a producer's product and services to advantage. Customers are grouped by commonality of elements including time, complexity, variability, adaptability and product features.

Today, the supply chain is typically aligned not with customer value spaces, but with production capabilities. (See Exhibit 3.) Further, companies tend to treat their

## EXHIBIT 3

### Where are You in the Transition to the Demand Economy?



customers as more homogeneous than they actually are. In the coming economy, companies that do not have the features a user wants – and wants right now or in a short time with customization – will be disadvantaged. A reorientation is needed to halt the focus on costs and to move toward thinking in terms of creating value or profit for customers. Companies must re-examine the value propositions they have with customers and state the propositions in supply execution terms. Further, companies must re-examine their market segmentation in value-space terms, irrespective of industry vertical or demographic description. For example, they must differentiate between a customer group that uses the company's products as a simple tool and another group that derives competitive advantage from the products.

Major shifts in market share are being experienced by new companies and restructured firms that have embraced the demand-economy realities and adopted a customer-centric operating culture. For example, a leading big-box retailer is growing at more than 20 percent annually owing to the efforts of its department of customer centricity. Further, department stores are losing out to fleet-footed, adaptable boutiques and online, on-demand retailers.

### **Can't Do It Down the Same Chain**

In the new customer-centric environment, producers will be meeting a more diverse set of value propositions for a more diverse customer group. In general, all of a producer's products will go down one of two routes: commodity or custom. All that will be left in the United States are specialty companies and fully automated commodity companies.

The value proposition for commodity products is of lesser importance. Products have less variability, usage is standard, and the supply chain can be longer. Producers must be willing to compete against the Chinese. As the demand economy evolves, the number of commodity products will decrease from an estimated 60 percent of all products today to around 40 percent in five years. For example, a U.S. manufacturer built a fully automated plant for light bulbs after faced with competitors from Eastern Europe selling bulbs for less than the costs of component raw materials, owing to government subsidies. All direct labor was removed from the manufacture of the bulbs, which are now untouched by human hands until the delivery truck door closes. The company kept its high market share.

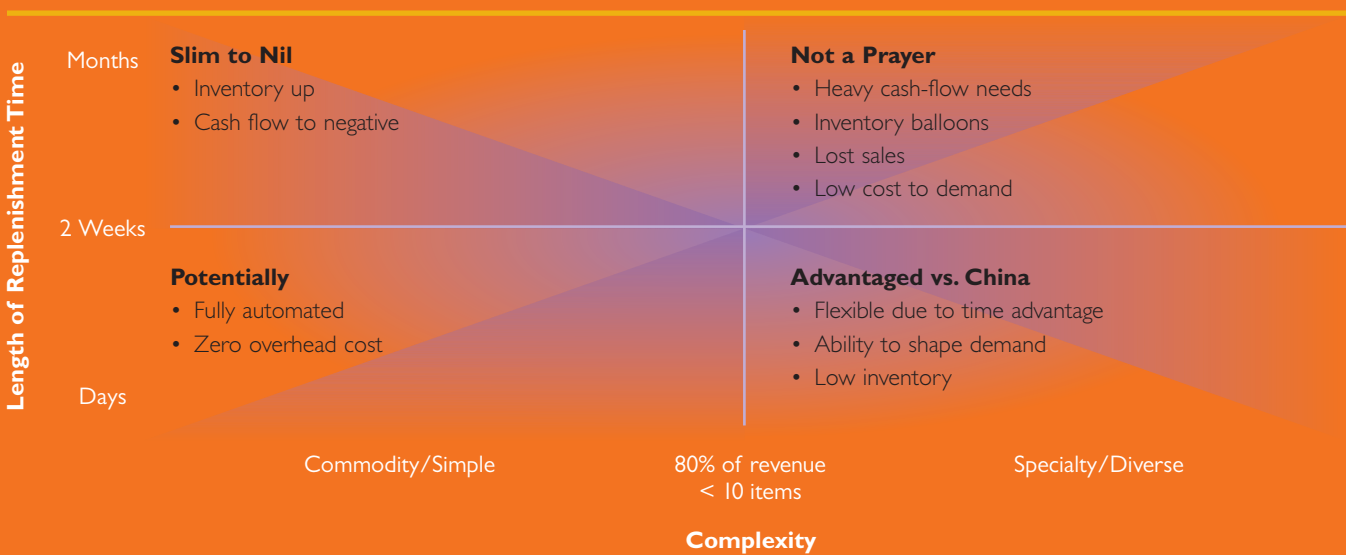
Products with non-standard usage will travel down the custom route. As the discerning customer moves toward sophistication, under the current system the supply chain lengthens, increasing time. The more demanding the customer is, the more personalization is desired. The new economy will bring products with customer-determined features and an instantaneous fulfillment model, dealing with days, not much longer. The supply chain for customized products needs to more adaptable and shorter. For example, a major electronics retailer now boasts a center in its "A" stores, at which customers can configure and order electronic products for delivery in a few days and bundled with appropriate software and service support.

A collaborative,  
adaptable and flexible  
approach will  
be required.

Supply-management best practices are dramatically different between custom and commodity, and the transition from one to another approach is very tricky and dangerous. Two typical reactions occur. One is to increase stocks of finished goods to be able to respond to variability in demand, which will take an enormous amount of working capital. The other is to outsource to reduce costs, compete on price and ignore the complexity, which will eventually cause lost sales and share. Both will fail. (See Exhibit 4.)

EXHIBIT 4

**Survival Potential of U.S.-Based Production**



Companies that stick with the old structures based on cost and supply will lose market share to ultra-low-cost Chinese manufacturers, as has occurred with personal computers, complex printed circuit boards, electronic assembly, knocked-down furniture, barbecue grills and clothing, with auto parts next. If the Chinese decide to take a market, it will be done within two years. U.S. producers can control their futures, rather than allow the Chinese to dictate the terms. But companies who move manufacturing to China or other third-world locations – then decide to transition for the demand economy – will be unable to make the conversion back to the United States for time advantages, as their infrastructures will have been disabled.

## A Dynamic System to Deal with a Dynamic Economy

The best strategy is to change the rules of market engagement to a time-advantaged strategy based upon value creation within a well-defined space. To meet the demand economy's needs for flexibility and speed, producers must employ two major tactics:

- Restructure the supply chain into a demand network
- Reposition for customer value

*Restructuring the supply chain into a demand network.* A chain is defined by linkage and dependency; if one link of a chain is pulled, all of them move. Conversely, a network is defined by independent movement and action. It is a more dynamic system to deal with a more dynamic economy. (See Exhibit 5.) A network represents a different mindset about collaboration and cooperation. Networked people and companies can respond flexibly to opportunities and challenges. Suppliers are brought into the planning process at each level to reduce overall costs, improve supplier economics and reduce actual purchase pricing. The keys are greatly improved supplier communication and data timeliness, sensitivity and accuracy.

### EXHIBIT 5

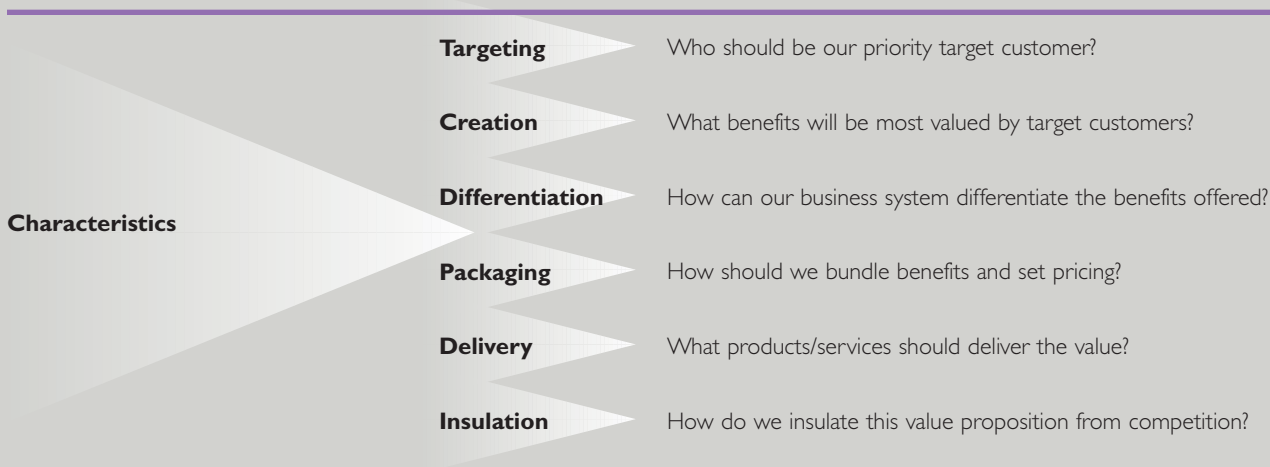
#### I2 Characteristic Differences – Supply Chains vs. Demand Networks

Supply Chains are Yanked	Networks are Choreographed
1 Fixed relationships	Multiple path relationships
2 Linear thinking	Collaboration for flexibility
3 Reactive attitudes – supply-push processes	Embrace customers requirements – demand responsive
4 Weighted down by complexity	Enable complexity
5 Cost driven	Value driven
6 Cost optimized on average	Performance optimized
7 Not time sensitive, sequential	Fast response enabling due to non-linear structure
8 Structured – resistive to reconfiguration	Agile – easily reconfigurable on demand
9 Vulnerable to weakest link	Have structural integrity – superior disaster capability and increased security
10 Deductive, therefore easily defeated	Inductive and difficult to break
11 Two-dimensional, deterministic	Multi-dimensional, stochastic (probabilistic)
12 Depend on forecasts to manage inventory	Depend on ultra short lead times and agility inventory

**Repositioning for customer value.** Management must take the lead in realigning organizational resources around providing customer value as defined in the new demand economy. Value does not mean cost; it is much broader. The focus is on recognizing the different value requirements for each customer grouping and then maximizing the value determinants. To get to the answer, several types of questions should be posed to the organization, such as, “What products/services will deliver customer value?” “How can our product be differentiated?” “How do we insulate this value proposition from competition?” (See *Exhibit 6*.)

## EXHIBIT 6

### Designing Value Spaces



### Implementation Requires New Management Approaches and Tools

These preceding two major tactics – restructuring into a network and repositioning for customer value – have implications for the organizational structure, systems, relationships and physical side of the operations. New management concepts and tools must be introduced, embraced and employed, including dynamic simulation modeling and demand-pull balancing. A new organization structure will be required, and external relationships with suppliers and others must be orchestrated with significantly increased sensitivity to the economics of these external partners. (See *Exhibit 7*.)

EXHIBIT 7

**Fundamental Cultural Changes at All Levels**

	<b>Traditional View</b>	<b>Customer-Centric View</b>
<b>Business Function</b>		
Producer strategy	Chains	Networks
Market strategy	Demographic	Value space
<b>Tactical Tools</b>		
Organization	Functional silos	Cross-functional teams
Systems	Push, ERP	Pull, rate based
Relationships	Arm's length	Networked, orchestrated
Physical structure	Cost optimized Lean, off shored	Performance optimized Local

**Organizational structure.** To put customer-centric management into effect, companies must change how the internal organization operates. Closer cooperation and synchronization are the keys. In the traditional structure, product development, manufacturing, distribution, procurement, marketing and sales each worked to its own functional requirements and needs, which seldom were coordinated. In the new structure, members from each are separated into several multi-functional organizations, serving different value spaces. Individuals from each functional silo are grouped under one leader who balances conflicting objectives, such as service, cost, inventory and capacity. The decision-makers in the group are yoked together to serve one value space, working in concert and from one set of numbers and goals matching the value proposition. These organizations become customer-centric agencies.

These reassembled cross-functional teams concentrate upon meeting customer needs, with one set of customers, one set of values to deliver and one set of time advantages to consider. These simplified structures become nimble and able to conform on demand. They also are taut due to the simplified breadth of responsibility and the strong customer-centric focus. Demand variability is greatly reduced, thanks to extremely short response-time capabilities, short planning horizons and use of simulation to visualize outcomes.

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**Systems.** ERP and its associated customer relationship, supply-chain and product life-cycle management systems all were built upon the supply-driven logic of the 1960s' early computing era. This logic, known as time-phased requirements planning, has never worked well due to overwhelming amounts of exceedingly detailed data, rigid inventory safety-stock floors and the high levels of change orders.

As result of these logic legacies, programming rules are not flexible, nor are they sufficiently collaborative. Supply-chain systems are hierarchical and supply focused; data are arranged into regions, states, customers or products, without defined supply relationships and not tied to customer value. Further, the detail required to run the “system” is so overwhelming that, once established, it becomes a major barrier to change.

In the new economy, demand-pull-balancing technology will be required, which will retool the logic of the ERP system, while preserving the relational data structures and systems interfaces. (See Exhibit 8.)

## EXHIBIT 8

### Logic Changes Required

	Supply Driven	Customer Centric
<b>Finished goods stocking</b>	Put everything in finished goods using ABC rule	Make only those items that will sell next week to conserve capacity
<b>Service provision</b>	Safety stock used as a hard floor	Inventory ranges targeted using simulation models
<b>Seasonal / promo</b>	Exponential smoothing	Cumulative charts, 12/12 pressure curves and collaboration
<b>Demand planning</b>	Forecasts at SKU level are single numbers	Rates determined at a family level, short interval
<b>Distribution replenishment</b>	Min/max and reorder points – ignore capacity	Capacity balance with service risk at family level
<b>Production scheduling</b>	Master schedule is a slave to changes from the above	Cycle planning stabilizes the master schedule by families
<b>Planning horizons</b>	Lead times added to create long planning horizons	Decisions at SKU level made only days before manufacture

**External relationships.** The collaborative approach must be spread outside the organization. Management by hammering suppliers will give way to management by collaboration. Decision-making processes throughout the network should be linked, and probabilistic modeling will be relied upon for replenishment and demand balancing. A complete stream of success must be forged, with a win-win approach.

Further, the new economy may require a reverse rationalization of a company's supplier base. More, rather than fewer, suppliers are probably needed to meet the anticipated variability in demand promised by the new economy. A company's sources will depend on its customer value proposition; the more variable the needs, the more flexible the network that will be required. Suppliers should be grouped around value spaces, with different suppliers by space. Overseas sourcing is not necessarily the right tactic, as a longer supply chain is less flexible and may not be able to satisfy the needs of the new economy.

**Physical network.** To meet demand economically and more flexibly, a company should challenge where it holds raw, semi-finished and finished materials, where it sources raw materials and components and the number of distribution centers, among other physical factors.

Outsourcing to the Far East does not work if demand variability is high – and is, in fact, counter-productive in the demand economy. Care should be taken to curtail the length of the supply network: The more variable the demand, the shorter the network must be, or inventory carrying costs will increase prohibitively and restrict cash flow.

In the traditional supply-economy approach, companies made cost optimization assessments, but were able to realize only limited use of simulation due to insufficient computer horsepower. Until 2005, simulation engines capable of handling millions of relationships were not available. But the opportunity now exists to use dynamic modeling techniques that deal with high volumes of demand variability.

Management must  
realign resources  
around customer value.

## Conclusion

It is time for producer management vanguards to take notice – and mobilize. A move to a demand-based economy – a move from commodity to custom – is on the way.

Maintaining the typical approach to supply-chain management in an ever-more-customized environment will force up inventories, restrict cash flow and increase costs 20 to 40 percent. Unanticipated global supply-chain expenses will erode expected product savings. Investors will demand sustainable free cash flow, but will no longer tolerate manipulation of it by driving up days' payables outstanding, forcing fast-moving inventory down and utilizing tricky accounting.

Commodity products will increasingly be supplied solely by Far East providers or very focused and/or highly automated domestic providers. Custom producers that can meet customer value propositions will put old-line competitors out of business.

Implementation is  
more counter-intuitive  
than difficult.

The answer requires restructuring supply chains into networks, repositioning for customer value, developing a collaborative organization structure, tightening up systems, improving supplier relationships and adjusting the physical network.

The benefits of making such improvements include:

- Enhanced market share
- Better service
- Lower costs and improved margins
- Inventory reductions of 40 to 50 percent
- Cuts in overhead expenses of 30 to 40 percent
- Liberated cash flows of 20 to 30 percent
- Continuity of the business

Tackling these problems can largely be self-funding. In two to three months, a company can design what its supply network should look like. Substantial implementation progress can be recorded in 18 months. Higher profitability and growth will be the rewards.

### **About the Author**

Robert P. Burrows founded the On-Point Group and is its managing principal. He is a leading-edge thinker and sought-after consultant in the areas of operations strategy, demand management, inventory management and collaborative procurement.

Bob spent 15 years as a strategic business unit head with Figgie International Corporation, in turn leading its Automatic Sprinkler Corporation of America division, a fire-protection device manufacturer, and Rawlings Sporting Goods, Figgie's consumer products manufacturing division.

Bob started his career in the operations management practice of Booz, Allen & Hamilton Inc.'s Cleveland office, where he consulted to dozens of Fortune 100 international manufacturing companies over a decade.

Bob served on the board of trustees of Covenant Theological Seminary for nine years while the institution became one of the top five Christian seminaries in the United States. Bob also served on the American Management Association's General Management Council for Growth Enterprises.

He holds a master's degree in business administration from Case Western Reserve University and a bachelor of science degree in engineering from Iowa State University. He emphasized operations research at both institutions.

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### **About The On-Point Group**

The On-Point Group was established in 1994 to help companies create value for their customers, leveraging every aspect of operations. We apply the quantitative science of operations research to supply-chain management problems to help companies generate significant value in their markets. We serve clients throughout all sectors of the manufacturing economy, from food and consumer products to technology, automotive and heavy industry.

On-Point's approach melds business savvy with the rigors of scholarly pursuit. Our people are seasoned professionals with strong quantitative skills, deep operations experience and demonstrated leadership in industry and academia. Our talent, wisdom, experience and high integrity allow us to deliver breakthrough solutions most efficiently and effectively.



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