

Scaling the heights

How scalable is the SCOR model?

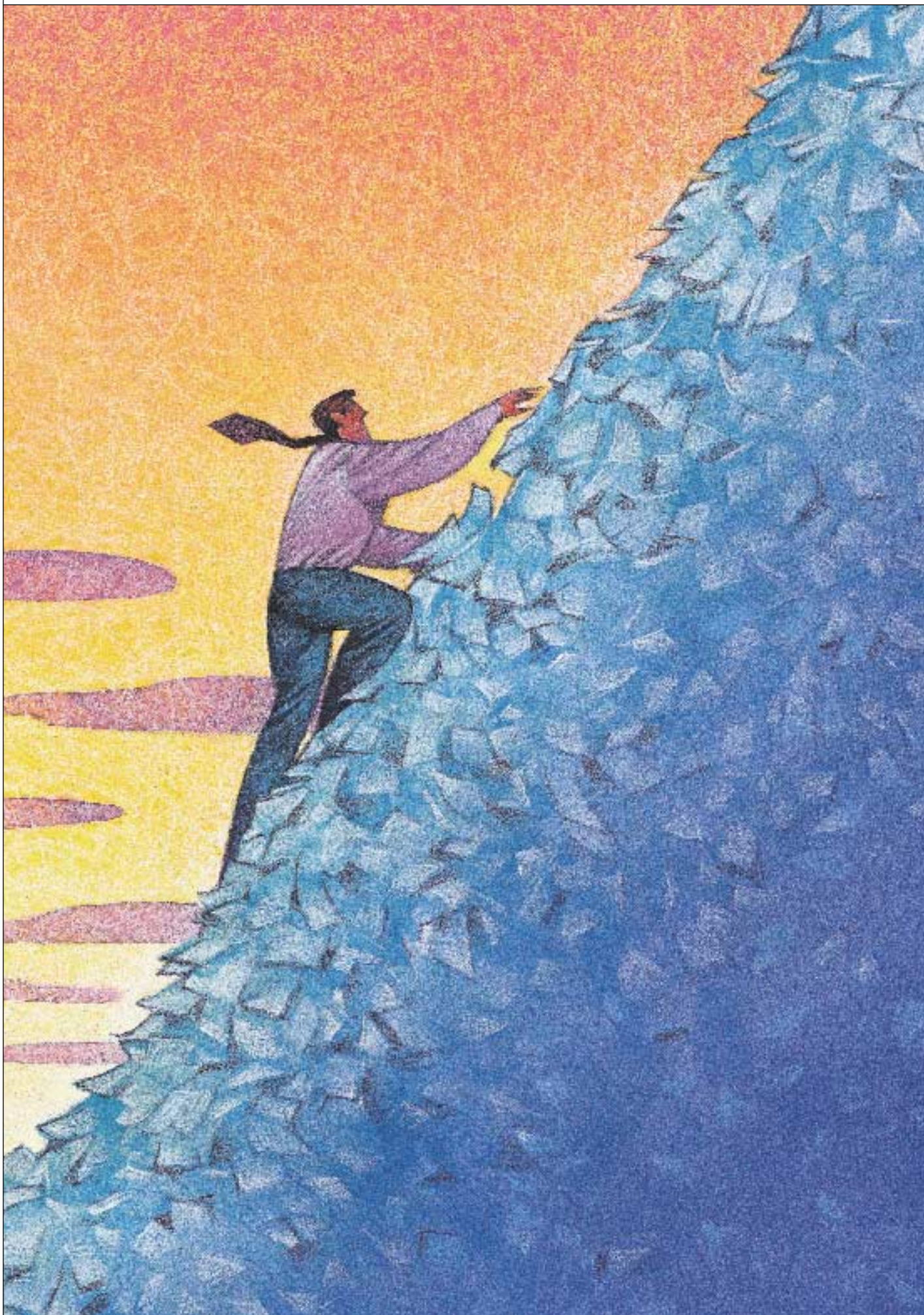
by Peter Bolstorff

Three times over the last six weeks I have participated in budgeting sessions with executive teams as they planned for supply chain improvement initiatives for 2002. In spite of an uncertain economy and self-imposed fiscal restraint, the theme has been the same — there is [a will to improve](#).

The question is not *whether to invest* but *how to invest*; the discussion is not on *eliminating* projects but on *narrowing* the projects to focus on specific problems that can be broadly applied later. The trend can be summed up by the middle part of the phrase, “think big, **start small**, scale fast.”

In the clearest example, a supply chain executive was challenged with inventory problems resulting from recent [acquisition and integration issues](#) within the **Return** process of the SCOR model:

- The *big* part focused on solving problems that were showing up on corporate financial reports in inventory turns, accounts receivables, warehouse cost, transportation cost and customer service productivity.
- The *small* part was a project focused on 10 problem SKUs, a single warehouse location and return authorization productivity with five customers.
- The *fast* part was an implementation plan designed to roll out sustainable business changes in 10 weeks and, at the same time, be prepared to broadly apply the design corporate-wide — including a technology solution — within six months. This is where the scalability of the SCOR approach proved to be of infinite value.



New products

DocQuest 5.0 from **Digital Paper Corp.** (www.digitalpaper.com) allows organizations to securely exchange and collaborate on complex technical content over the web.

Contivo (www.contivo.com) has released its **Analyst 2.4** and **eService 2.4** systems, which feature improved message processing for EDI and can stimulate conversions to XML-based trading partner systems.

Logistics.com (www.logistics.com) has launched **OptiYield Network Dashboard**, a web-enabled interface to its suite of decision support solutions. It is designed to provide up-to-date profitability and forecasting information.

Broadlane Inc. (www.broadlane.com) has released its contract management system, **CMS 2001**. It is an enterprise-wide, Java-based suite of applications designed to support the company's base of contract management services.

Menlo Logistics (www.menlolog.com) has released its **Menlo LMS** logistics management solution for management of global supply chain operations. It is a single-source solution designed to replace multiple systems previously required for large, complex logistics operations.

NewRoads (www.newroads.com) has introduced **Chauffeur**, a managed transportation solution to help companies streamline logistics and shipping costs. It is designed to reduce costs from inbound freight shipments and reduce rates governing USPS First Class mail, UPS ground and 2nd-day shipping.

Salion Inc. (www.salion.com) has introduced **Proposal Manager**, **Knowledge Manager** and **Business Link** to allow the development of end-to-end proposals; allow suppliers to analyze and prioritize opportunities; and provide the ability to extend capabilities throughout the supply chain.

GT Nexus (www.gtnexus.com) has released **Optimization**, a real-time optimization system for the allocation of international ocean freight for the ocean transportation industry.

Infolink 2001R1 from **Manhattan Associates** (www.manh.com) enables real-time connectivity and integration to a user's factories and other supply chain participants, including off-shore contractors, consolidators, brokers and freight forwarders.

PolyDyne Software (www.polydyne.com) has released **QuoteWin iX**, a web-based solution for direct materials sourcing for contract electronic manufacturers.

Let me first suggest the difference, in my mind, between scale and scope:

Scale is the number of SCOR processes, items, locations, suppliers and/or customers that focus the project; it defines the start small part.

Scope is the number of performance variables that will be open to analysis and design changes; it defines the think big part.

Together they help you "scale fast." Now, you probably won't see scale in the official definitions of the **Project Management Book of Knowledge (PMBOK)**; scope is the all-inclusive word used to define a project.

There are two questions that help define scale: "How do I define supply chains?" and "How do I scale SCOR project deliverables?"

The key question to help define scope is: "What are my supply chain performance drivers?"

How do I define a supply chain?

The process of **gaining organizational consensus** on defining supply chains is more important than the result. Having said that, supply chains can be defined by the combination of factors (or points of view) including geographic region, customers, products and financial reporting (P&L), and others as needed.

An executive team must take into account all points of view and prioritize the importance of each. Regardless of the outcome, it is critical that all are aligned and organized together. Building a matrix helps the alignment process (see **Tables 1 and 2, p. 35**).

To keep things simple, assume that each major geographic region of the world has its own matrix (combination of products and customers). Use your financial reporting point of view to assist in identifying your "major" geographic regions of the world.

For example, if a company has P&L reports for Europe, Latin America, the Far East, North America (including Canada) and Japan, then start with five matrices. Pick the region with either the most

What is SCOR?

The **Supply Chain Operations Reference** model, developed by the *Supply-Chain Council*, provides a standard methodology for managing supply chain projects centered on Plan, Source, Make, Deliver and Return.

sales or where the headquarters is located to start.

To build the columns (customer point of view) it is necessary to look at how sales regions are tracked, market channels are organized and/or customers are segmented. For each customer type, know the delivery requirements, i.e., lead-time, on time/in full, etc., and the product mix that they buy as stated on the purchase order. The goal is to **group customers into similar requirements** with similar product mix.

Retail is a common customer type. Delivery requirements for retail focus on superior perfect order fulfillment (including on time/in full to a two-hour delivery appointment at the dock) and average lead time (typically the manufacturer is supporting a retailer's warehouse stock). Product mix requirements are varied but are often characterized by a few items-per-category — with customer-unique packaging — that are promotion-friendly, and, of course, are the lowest competitive cost.

In addition, value-added services that many retailers are demanding stem from the **Efficient Consumer Response (ECR)** initiative and focus on turning inventory at the shelf more effectively. This can include leading practices such as collaborative planning, forecasting and replenishment (CPFR), category management, and rapid replenishment. Other common customer types can include original equipment manufacturers (OEM),

About SCOR

The Supply Chain Operations Reference (SCOR) model has been developed by the Supply-Chain Council and is **SCTN's** recommended implementation model for SCM initiatives. While the author of this article is affiliated with the Supply-Chain Council, this article was prepared under the direction of **SCTN** and was not subject to prior review or approval by the Supply-Chain Council or any of its members/affiliates.

industrial/commercial, distributor, consumer direct, and singular key accounts (a *Wal-Mart*, for example).

To build the rows (product point of view) it is necessary to look at the highest level of product families or groups. Sometimes this lines up with how the business units are organized and managed (financial reporting point of view). It is not uncommon to find a very complicated web of products mapped to P&Ls.

The goal is to **identify meaningful groups of products or services** and link them to the financial reporting hierarchy. This is unique to each company and each project.

Many, if not most, companies are comfortable prioritizing a supply chain definition through the product and a financial reporting point of view, regardless of who the ship-to is. There are some risks associated with that priority.

First, to a large degree, customer requirements (and associated contracts) are key factors that drive supply chain performance. While the gross margin may look good, the net profit might suffer due to high SGA (sales, general and administration) support costs.

Second, manufacturers are oftentimes indiscriminant about what items from the total product line should be available to a particular customer segment. The result of offering everything can be **devastating to one's balance sheet**.

Third, with a product view only, supply chain costs can evolve to support the delivery requirements of the most aggressive customer segment. The result is often providing (and eating the cost of) delivery performance that is not needed nor valued.

In the **Return** process case, the supply chain definitions that helped determine scope were:

- The *think big* part of the project was aimed at all active items in the retail segment.
- The *start small* part was aimed at all returned items from five customers within the retail segment that were initiating a majority of the return authorizations.
- These five customers had similar contract terms and policies regarding warranty and excess inventory.

Table 1. Supply Chain Matrix

Products/Services Point of View	Customer Point of View (Segments/Channels)		
	Retail	Direct-to-consumer	Distributor
Product Family A	5 items	10 items	All items
Product Family B	No items	5 items	All items

Matrix for domestic North America illustrates the relationship between the customer and product points of view. The customer column drives supply chain requirements. Many times financial reporting only supports the product row. Leading companies are engineering supply chain to support requirements and reporting from the customer or column point of view.

Table 2. Performance Driver Grid

	Goals	Design	Management
Organization * Analyze basis of competition	What is the organization's supply chain strategy and how does it help prioritize competitive advantage? Superior Advantage Parity	Are you organized to support supply chain improvement? Supply chain point of view: Geography Customer Product Financial reporting	Does the organization have a well-defined and balanced set of supply chain key performance indicators or metrics? Delivery reliability? Responsiveness? Flexibility? Direct and indirect cost? Working capital?
Process Design * Configure material flow * Align work & information flow	Have strategic supply chain goals been cascaded to process goals? Material flow efficiency for: Delivery performance Inventory turns Transportation cost Lead time Transactional productivity for: Forecasts and replenishment Sales orders Work orders Purchase orders Return authorizations	Are material, work and information flows the most efficient/effective for accomplishing the process goals? Plan Source Make Deliver Return	Are the appropriate management resources in place to drive supply chain continuous process improvement and drive value to the income statement? Six Sigma Lean manufacturing Lean value chain
People/Jobs * Align work & information flow	Are job outputs and standards linked to process requirements (and cascaded from the organization level)?	Are process requirements reflected in the appropriate jobs?	Do people understand their role and responsibility in driving process improvement (i.e., outputs they are expected to produce and standards they are expected to meet)?
Technology * Align work & information flow	Does the technology support the business requirement and goals set in the process goals? Transactional productivity Efficiency Competitive advantage	Is the most efficient/effective technology in place to accomplish the process organization, process and job goals?	Are sufficient resources allocated to support effective use of technology? Are the interfaces between technologies being managed?

How do I scale SCOR project deliverables?

The good news is that the SCOR project approach is highly scalable; the bad news, of course, is also that the SCOR project approach is highly scalable. Every SCOR project involves metrics — the efficiency of moving items from one location to another and the productivity of executing transactions.

Using single SCOR process categories to help scale a project is an effective way to design big, pilot small and roll out fast. Here are some projects that have been scaled down from a full-blown, enterprise-wide SCOR application:

P1 — Plan Supply Chain — implemented in a single supply chain (customer point of view) using the leading practice of sales and operations planning. Metrics include forecast accuracy, on time/in full delivery performance, inventory turns, unit cost and transportation cost.

P2, P3 and P4 — Plan Source, Plan Make and Plan Deliver — implemented across multiple supply chains (product point of view) using leading practices for replenishment planning and execution. Metrics include on time/in full delivery performance, inventory turns, cost of sales and transportation cost.

S1 — Source Stocked Products — implemented with the mass of low volume suppliers providing stocked raw materials to a manufacturer would improve purchase order productivity. Metrics include supplier delivery lead-time and on time/in full delivery, inventory turns and material acquisition cost.

D1.1, D1.2 and D1.3 — Process Inquiry and Quote; Receive, Enter and Validate Order; Reserve Inventory and Promise Date — implemented with stocked products available from an online catalogue direct to consumers would improve the efficiency and effectiveness of generating online quotations, placing orders, reserving inventory and confirming orders. Metrics include order management cost and transportation cost.

In the **Return** process example, SCOR helped to reduce scope in the following areas:



To learn more about the Supply-Chain Council: www.supply-chain.org

For basic information about SCOR:
www.supply-chain.org/html/scor_overview.cfm

Related articles

Peter Bolstorff's entire "Keeping SCOR" series is available in .pdf format at the **SCTN** website at www.supplychaintech.com.

New products

SYNCtrack from **UCCnet** (www.uccnet.org) is a toolkit designed to provide a defined process for companies to integrate global data synchronization across enterprise, supply chain and e-commerce systems.

Adonix (www.adonix.com) has released its **X3 1.3** enterprise software, which features Internet access to system functions, and enables companies to extend business transaction and inquiry functions to their web sites.

SupplyWorks Inc. (www.supplyworks.com) has released its **SupplyWorks MAX 2.5** enterprise solution, which is designed to combine tactical execution with strategic control over supplier relationships.

Yantra 4.0 from **Yantra Corp.** (www.yantra.com) is a multi-enterprise order and inventory management suite that includes scenario management, participant modeling, interoperability framework, multi-enterprise catalog management, cross-enterprise analytics and a cross-enterprise application server.

Datastrip Inc.'s (www.datastrip.com) **DSVerify 2D** is a two-dimensional bar code and smart card reader with biometric verification capabilities.

Aspen Technology Inc. (www.aspentech.com) has added its **ORION** refinery scheduling software to its existing end-to-end solution for the petroleum industry. The integration is designed to provide petroleum companies with a tool to optimize performance of the refinery network.

Interwoven Inc. (www.interwoven.com) has released its **TeamSite 5.5** software, which offers an optimized server architecture to reduce hardware costs. It features **MultiStore**, which allows an enterprise to collaborate, process and deploy content while leveraging a centrally-managed server architecture.

The **EASYPICK Trak Light** picking system from **FKI Logistex** (www.fkilogistex.com) is a track-based, light-directed picking system featuring modular units, which snap in at the pick face. It is designed to be easily reconfigured and maintained.

Promero's (www.promero.com) **Envisient 2.0** e-commerce solution is comprised of online storefront management, customer relationship management and automatic call distribution modules. It allows users to maintain multiple storefronts with transaction processing, reporting, browser-based authoring and management tools.

Savi Technology Inc.'s (www.savi.com) **SmartSeal** is designed to secure and monitor all major types of freight transportation containers, including airfreight unit loading devices, intermodal ocean-going containers, truck trailers and railcars.

MAXIMO 5.0 enterprise asset and maintenance software from **MRO Software Inc.** (www.mro.com) features Internet component-based asset management software designed to lower the total cost of ownership for enterprise application portfolios, allowing users to support a global enterprise or single sites via a web browser.

- The items included in the scope were all items that fit R1 — Return Defective Product and R3 — Return Excess Product.
- Locations in scope included one warehouse and five retail customers comprising 25 retail locations submitting returns.
- Metrics included transportation cost, non-working inventory dollars, return authorization cycle time, warranty/return credits status on outstanding receivables, and warranty and returns cost.
- Specific process elements included scheduling, receiving, disposition and recovery of returned items.

What are my supply chain performance drivers?

Since at least the 1980s, there have been many well-documented approaches to improve business performance (e.g., *engineer* or *re-engineer* or "insert buzzword here"). Three years ago, I dusted off nine of my workshop certificates (yes, I'm certified) in an attempt to identify common performance drivers and apply them to supply chain.

[For one of the nine points of view, refer to the book *Improving Performance: How to Manage the White Space on the Organization Chart* by Geary A. Rummler and Alan P. Brache (Jossey-Bass, 1995).]

Each supply chain project, regardless of scale, must address at least three performance factors: **strategy, design and measurement**. Each of these factors needs to align four performance levels: organization, process, people and technology.

If you plug all this into a matrix, there are 12 performance drivers (a

combination of a factor and a level).

The scope of a supply chain project focused only on a row or column will **run the risk of failure**.

Guideline: No matter the scale of the project, sustainable improvement must address *all* performance drivers.

In my earlier **Return** process example, the performance drivers that helped to define scope were:

- Return policy cascaded to goals for process, people and technology; in this case aligning to operational strategy that prioritized delivery reliability and cost as competitive advantages while flexibility/responsiveness and asset utilization were at parity with the competitive environment.
- Return process design with organizational process ownership and management, and individual work and information requirements.
- Return key performance indicators at the P&L, balance sheet, return authorization transaction productivity and individual objective levels.

SCOR as a framework is flexible; **SCOR** as a project approach is scalable. It can be used to **manage quick hits** as effectively as it can help with more enterprise-wide solutions.

If you're kicking the **SCOR** tires, remember that it doesn't have to be an all-or-nothing affair. Think big, act small and scale to your delight. But don't stop investing. ◀

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