at a glance

This article looks at the latest additions to the SCOR model — Customer Chain Operations Reference and Design Chain Operations Reference.

How to make your supply chain more valuable

The SCOR model has evolved to encompass a company's entire value chain

by Peter Bolstorff

Earlier this year I had the opportunity to facilitate a business executive forum focused on supply chain trends. The conversation was couched in the context of "big business questions" that executives are being challenged with today, such as:

- Why am I not growing at the rate I want?
- Why am I missing my gross margin expectations?
- Why are my customers unhappy?
- Where is my cash?
- Why are my overhead expenses growing faster than revenue?
- How do I achieve competitive advantage?

To answer these questions, many of the forum participants were forced to confront seemingly incompatible issues. As with most good business practices, the concepts aren't new. Many of you remember when manufacturing was first presented with the challenge of reducing costs while improving quality, or when the idea of pairing inventory reduction with delivery reliability improvement was first introduced to planning.

These days, we're also learning to deal with the increased pace of new product introduction paired with more efficient material acquisition; increased sales productivity paired with more effective pre- and post-sale customer service; more flexible global distribution paired with more efficient use of warehouse and transportation costs; and planning for both your supply chain *and* your customer's supply chain paired with improving your planning efficiency.

With competitive global manufacturing and sophisticated information exchange, the pairings have moved beyond the four walls of the company and include more than just supply chain processes. As a result, we've seen the evolution of the "value chain" concept.

Is there really any difference between a supply chain and a value chain? **Google** doesn't shed much light on the situation. Of the 10 most popular listings (out of nearly 7 million), half use the two terms interchangeably. Of the remaining five, one references both supply chain and product design, one defines value chain in the context of a service business, and three reference a 20-year-old book by business academic Michael Porter (*Competitive Advantage: Creating and Sustaining Superior Performance*).

The Michael Porter value chain framework has two parts to it. The first part contains five "primary" processes:

- **Inbound Logistics** (receiving, warehousing and inventory control of raw materials and components);
- **Operations** (value-creating activities that transform raw materials and components into finished salable products);
- **Outbound Logistics** (order fulfillment, warehousing, transportation);
- **Sales & Marketing** (channel selection, advertising, pricing, sales);
- **Service** (customer support, repair, etc.).

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 five areas: **Plan**, **Source**, **Make**, **Deliver** and **Return**.

The second part contains four "support" type processes:

- **Firm Infrastructure** (finance, legal, quality management);
- **Procurement** (purchasing);
- **Human Resources** (recruiting, development, compensation);
- **Technology Development** (research and development, process automation, and other technology development).

If you Google "supply chain," the most popular website is that of the *Supply Chain Council* (SCC). The SCC's **SCOR** model framework defines part of the value chain as the integration of **Plan**, **Source**, **Make**, **Deliver**, **Return** and **Enable** processes. SCOR by itself has helped hundreds of companies define their supply chains, measure them and drive performance improvement.

While the level of detail lends itself to analytical work, the difficulty with using just SCOR alone is that there are several high level process gaps in contrast to the Porter model. For example, SCOR does not address the primary processes of Sales & Marketing and some aspects of Service. Additionally, SCOR does not address the support processes of Firm Infrastructure, Human Resources and Technology Development.

Recognizing this, the SCC and its member companies (*Hewlett-Packard Co.* in particular) have introduced two new frameworks that help piece together more of the detailed mosaic of enterprise value chains:

- The **Customer Chain Operations Reference** (CCOR) model defines the customer part of the value chain as the integration of **Plan**, **Relate**, **Sell**, **Contract**, **Service** and **Enable** processes.
- The **Design Chain Operations Reference** (DCOR) model defines the design part of the value chain as the integration of **Plan**, **Research**, **Design**, **Integrate**, **Amend** and **Enable** processes.

The Marketing component is still on the development block. The gap between the SCC process frameworks and Porter now just includes some aspects of Firm Infrastructure and Human Resources.

Let's look now at how companies can use the SCC frameworks to measure the performance of their value chains.

A value chain, as defined by SCC, is the integrated macro processes of **Marketing**, **Design**, **Supply** and **Customer**. A value chain spans from markets (of supply and demand) to your company to your customer (ultimate buyer of your products).

A value chain is comprised of four dimensions: **Strategy**, **Product Flow**, **Work Flow** and **Information Flow**. As with the SCOR model, a company must align all four dimensions in an improvement effort.

Figure 1 attempts to put the four frameworks together in a high level process relationship map. As illustrated in the diagram, each process relates to its markets, other macro processes in your company, and to customers through key inputs and outputs. The picture is far from perfect; the process relationships are far more complex and dynamic than the series of inputs and outputs suggest. In fact, I'm 100% positive there will be many revisions to this diagram over time, but it's a good place to start.

Integrated Macro Processes

"Integrated" in this case describes how the macro level value chain processes interact in *plan full*, *directive* and yet *adaptive* ways that satisfy your customer requirements and help your company grow profitably. "Integrated" does not imply that the processes are serially executed. We know that at any given moment of

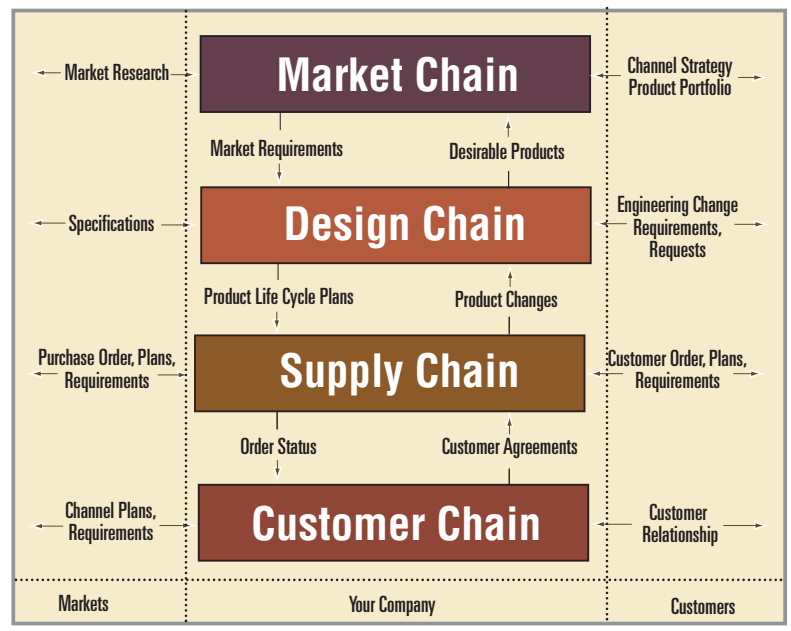

Figure 1. Macro Level Value Chain Process Relationship Map

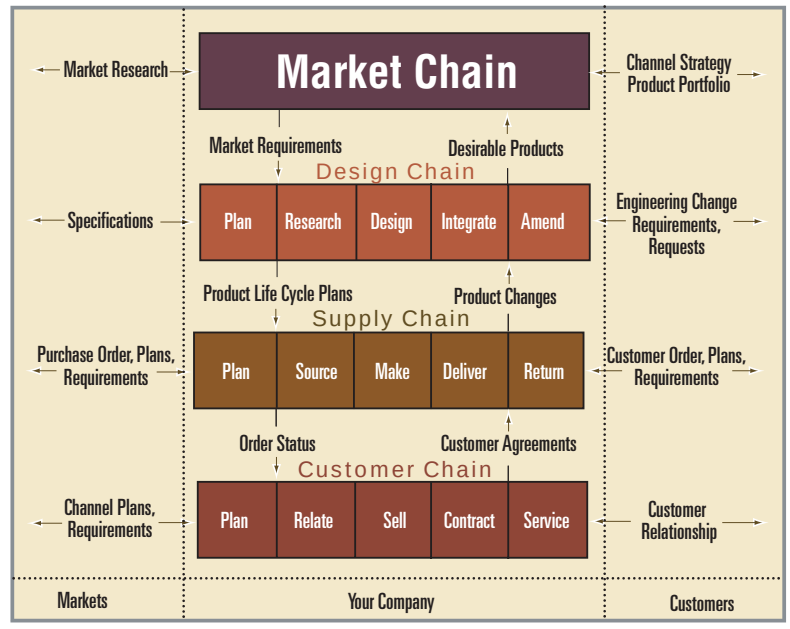

Figure 2. Value Chain Level 1 Process Relationship Map

the day, new channels are targeted, new products are introduced, sales people win and lose contracts, suppliers miss deliveries, customers change their orders, and warranty claims are acted upon.

Figure 2 portrays the parallel nature of the value chain, illustrating the SCOR Level One processes. The "so what?" of this diagram is the ability to describe the complexity of your value chain using simple common language and, more importantly, through analysis determine which processes are working well, which ones need improvement, and which ones are completely broke or absent.

For example, if "why is my revenue not growing at the expected rate?" is the big business question at hand, this value chain framework provides a better context to get the answer right then simply pointing the finger at Sales. What you don't see here is that underneath each Level One process are two more layers of process detail, definitions, suggested metrics and leading practices.

Value Chain Span

A value chain spans from markets to customers. Markets refer to potential demand and both potential and actual supply. A market may be geographic in nature (e.g., North America or Latin America) or it may refer to a commodity, channel, or Special Industry Code (SIC) (e.g., Aerospace & Defense Parts Manufacturing or Discount & Variety Retail) or it may refer to an existing supply base.

Customers, on the other hand, refer to actual demand. Customers may be grouped by channel (retail), relative size or importance (key account), and/or intermediary source (wholesaler or distributor). For example, if "why is my revenue not growing at the expected rate?" is still the big business question at hand, we may focus the question at demand sources segmented by geography, channel, and/or customer (e.g., Latin America, Discount and Variety Retail, Wal-Mart and Carrefour). So we now may know which processes, markets and customers need improvement.

Table 1 Driver Transactions

Supply Chain:	
Plan	Forecast and Replenishment Order
Source	Purchase Order
Make	Work (Process) Order
Deliver	Sales Order
Return	Return Authorization
Customer Chain:	
Plan	Territory Sales Forecast and Quota
Relate	Customer Profile
Sell	Quote/Proposals
Contract	Profitable Contracts
Service	Service Request

Value Chain Dimensions

There are four dimensions to a value chain: strategy, product flow, work flow and information flow.

Strategy is founded on the key value chain performance measures and the competitive priority necessary to grow profitably. One common model of organizing your key performance indicators is the **Balanced Scorecard**, an approach to strategic management developed in the early 1990s by academics Robert Kaplan and David Norton. The basic idea is that an organization must measure its performance from a balanced view (Customer, Internal Process, Financial and Employee) against its goals as established in its vision and strategy. Each of the macro processes in the value chain framework contributes relevant measures for Customer, Process and Financial.

Product flow has to do with the efficiency and effectiveness of managing products to markets and customers. Each of the macro value chain processes adds a little different twist. For example, Design effectiveness of product to market flow could be measured and analyzed through new product development cycle time. Supply effectiveness could be measured and analyzed by inventory days of supply. Analytical techniques such as value stream mapping, network analysis, and/or inventory optimization provide value in assessing process efficiency.

Work and information flow focus on the productivity of *driver* transactions. Driver transactions are the primary transactions on which both work processes and technology center. Productivity is measured by event time (time on task without lag), elapsed (time from beginning of task to end with lag) and yield (completed transactions without rework). **Table 1** is a first pass at supply chain and customer chain driver transactions.

resources

Balanced Scorecard Institute
www.balancedscorecard.org

Supply Chain Council (SCC)
www.supply-chain.org

The concept of value chain is not new. Neither was supply chain in 1996, when SCOR was introduced to provide common definition, metrics and practices with the goal of companies using the framework to improve supply chain performance across industries and trading partners.

We are at another stage of evolution where companies' big business questions are forcing us to think outside of the supply chain box. With the introduction of the CCOR and DCOR processes, the SCC has positioned itself to support value chain performance improvement through common process definition, metrics framework and best practices. In the next article we'll look at how to use the value chain framework described here to drive value chain excellence. **LT**

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