

# **SUPPLY CHAIN MANAGEMENT PRACTICES THAT MATTER**

Summary Results of A Research Study Conducted by  
Dr. Kevin McCormack  
and  
The Supply Chain Council

**Research Team**  
Kevin McCormack  
John Ortiz  
Susan McCormack  
Jan Grzegorzcyk

November, 1998

What are the "best practices" that make Supply Chain Management (SCM) a truly effective discipline? Despite a number of apparent successes, the answer to this question is far from obvious. As the concept has grown in popularity, it has taken on so many different names and shapes that it has become increasingly difficult for would-be practitioners to grasp and communicate to colleagues.

Supply Chain Optimization is different from Supply Chain Collaboration which is different from the older, but still frequently-used terms, Logistics and Distribution Management. Yet they all also overlap. The newer umbrella concept of Supply Chain Management should help eventually in sorting things out, but in the short term may have actually increased confusion.

For those of us who work as consultants, the questions we hear from exasperated clients eventually come down to "What works and what doesn't?" and "Where should we start?" Ready answers are simply not at hand.. The conventional wisdom says, for example, that automatic customer replenishment is essential to a well-managed supply chain. Yet, is it really? Or, to take another example, how rigorous do demand forecasts need to be to become truly effective SCM tools? These are issues that stump--or should stump--even the most fervent believers in Supply Chain Management.

To clarify such issues, Dr. Kevin McCormack has established an on-going study to statistically identify the practices and principles that best correlate to effective supply chain management. Dr. McCormack has undertaken this effort with the sponsorship of the Supply Chain Council, a group that consists of 420 companies dedicated both to exchanging information on SCM and to establishing standards and a common vocabulary. The two organizations have begun creation of a multi-year database that allows SCM practitioners to compare practices within and across industries and to look at them in their historical context. What we considered a best practice in 1998 may well appear less effective in 2002!

**How the initial survey was conducted.** In framing questions for our initial survey, we used the Supply Chain Council's model for describing and measuring supply chains. This model is intentionally holistic, and includes suppliers and *their* suppliers as well as customers and *their* customers. Called the Supply Chain Operations Reference or "SCOR," the model focuses on the four key process areas: PLAN, SOURCE, MAKE and DELIVER. For each of these areas, we developed questions and pre-tested them on several Supply Chain Council members and well-established SCM experts.

Sample questions under SOURCE, for example, included "Is there a procurement process team designated?" and "Does this team meet on a regular basis?" along with six related questions. Questions under MAKE included "Do you have weekly planning cycles?" and "Are supplier lead times updated monthly?" plus five other questions.

Questions fell into two general categories. One set of questions asked the "What?" of the supply chain decision process and focused on methods or techniques like: "Do

you use statistics to forecast demand?" The other set of questions asked "How?" and referred to the strategy or philosophy for implementing the process like: "Do you designate a clear internal owner of the demand management process?" or "Do sales, manufacturing and distribution organizations collaborate in developing the forecast?"

In all, we asked each respondent 35 questions that covered virtually every control point of the sale-to-delivery cycle. Each respondent answered by ranking his or her company on the well-known Likert opinion measurement scale. That scale offers five possible choices for assessing a particular activity:

- 1-never or does not exist
- 2-sometimes
- 3-frequently
- 4-mostly
- 5-always or definitely exists

Over the years, this scale has proven one of the most effective tools for self-evaluation and obtaining a person's degree of agreement on a statement. It is also used often in statistically predicting behavior (best practices) and their impacts. It permits us to analyze the variation and gray, everyday realities of business life with real statistical rigor.

Our initial 43 participants represented manufacturers ranging from pure material processors to makers of discrete parts. Some serve primarily industrial markets, while others sell directly to consumers. (See Fig. 1).

### What is Your Industry?

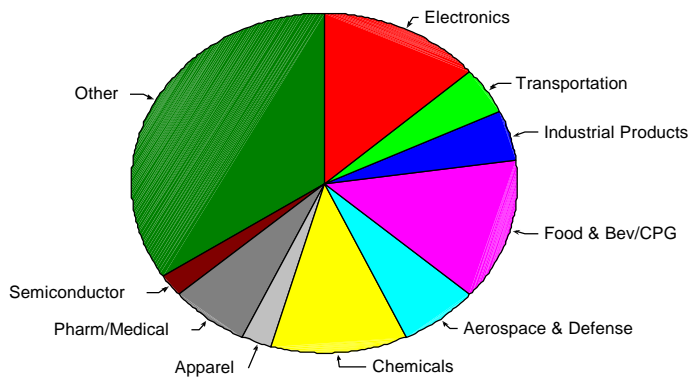


Figure 1. Participants by Industry

Although the participants represent a relatively small sample, we feel our initial sample represents a good cross-section of the American manufacturing industry.

And because many practices we measured correlated so strongly to successful supply chain implementation, we believe the study, even in its initial phase, already points the way to some remarkably clear implementation guidelines.

**What really works.** It should come as no surprise that accurate sales forecasts matter. Indeed, the sharpest division among study respondents occurs around this question. Virtually all companies who find their forecasting methods credible and accurate also say that SCM works for them. Those companies whose organizations regularly doubt the validity of their sales forecasts also say that SCM does not yet do its promised job. The statistical correlation to performance underlying this issue falls out at 0.7 (versus a perfect correlation of 1.0), a number which business statisticians will recognize as clearly representing a very strong relationship. In the real business world, it's difficult to find data more unambiguous than this!

It thus stands to reason that if any company truly wishes to implement effective Supply Chain Management, the quality of sales forecasts must become one its very top priorities.

And, as the study also makes clear, organizations working with accurate sales forecasts almost always employ three techniques. They:

- use historical data to develop their forecasts.
- support that historical data with predictive mathematical models.
- hold weekly planning sessions where they make buying, hiring and other commitments.

Employing all three techniques in parallel allows managers to make incremental, rather than abrupt, adjustments. Do I pay people to do nothing for a while, believing that orders will pick up soon? Or do I begin a few layoffs now? Accurate numbers and frequent assessments keep everything on a relatively steady course and reduce the magnitude of change.

Successful SCM, however, requires more than just solid forecasting. The second crucial indicator of success is the degree of collaboration and integration with other departments within the company and with outside partners. The most obvious form of collaboration, for example, is the sharing of planning and scheduling information with suppliers, something that is highly correlated to SCM performance.

Interestingly, however, our study indicates that such practices are not yet as broadly implemented as the popular supply chain press or consultants often suggest. Of our sample, for example, only 53% actually share planning and scheduling data with suppliers. When reading today's business press, you would think that everyone did this. Our interpretation of this one-time sample (soon to become just one data point on an extended timeline) is that information integration with suppliers, while still only partial, is becoming easier as companies realize its value but may never become a universal practice.

**What may not have much effect.** Several "best practices" that consultants often propose as solutions appear, in our sample, to have limited impact on SCM performance. These include the automatic replenishment of customer inventories and the tracking of customer requests versus actual delivery. A high percentage of respondents say they employ both practices, yet correlation with SCM success proves minimal. One can easily speculate that automatic replenishment runs up against the issue of trust between two legal entities and may not be fully implemented. It's a rare corporation (or individual!) that will fully permit suppliers to totally control orders and deliveries or to have sufficient confidence in their own internal tracking mechanisms to permit it.

As for tracking customer requests versus actual delivery, that's really the easy part. Merely measuring the relationship doesn't really get you that far. The hard part, which only a few companies like Dell or L.L. Bean have achieved, is to turn those requests into almost instantaneous deliveries, which makes requests and actual deliveries the same thing.

Another area where correlation proved less than many might have anticipated is information technology support for SCM. IT support for each of the four SCOR areas, while present, came up well short of the measure necessary to be statistically significant to SCM success. This finding lends credence to other, well-publicized studies that show only 50% of the IT projects (including SCM projects with a heavy IT focus) delivering expected business results. Clearly, all these findings indicate that SCM is something much more complex than just information technology. Our study strongly indicates that SCM is primarily an organizational and people issue. I think we are seeing how hard true cross-functional integration and collaboration is for many organizations. Although enabling technologies make SCM far easier, they are not in themselves sufficient. It's the old story. There are no silver bullets!

**Where we go from here?** As the study expands, we expect to develop a more complete picture. Of special interest will be comparisons of practices between industries, something for which we still have too small a sample. We would not be surprised to learn that many apparently "universal" SCM practices are, in fact, highly industry specific.

As the sample size grows, we hope soon to be able to determine which general practices have the most complementary impact. Our ultimate goal is the creation of an easy-to-use tool--a "Supply Chain Management Maturity Scale," if you will--that tells users "You Are Here" on the Mall Map. Then people attempting to implement integrated supply chain management will know a very important thing: Where am I starting from and how far do I have to go.

Anyone with children knows that, when you are on a trip, the question is constantly asked; "Are we there yet?" Implementing SCM sometimes looks like a long car trip to Disney World.

---

*Dr. Kevin McCormack is President of DRK Research and Consulting LLC. He can be reached at [kmccormack@drkresearch.org](mailto:kmccormack@drkresearch.org).*

Dr. Kevin McCormack  
Kmcormack@drkresearch.org  
Tel. 205-733-2096

**Supply Chain Council**  
Bill Hakanson  
[bill@hakanson.com](mailto:bill@hakanson.com)

## **Firms Participating in this Study**

Allied Signal Engines  
Anchor Food Products  
APL Ltd.  
Armstrong World Industries  
AT&T Wireless Services  
Avon  
Bayer Corp.  
BellSouth Telecommunications, Inc  
Bethlehem Steel Corporation  
Borden Foods  
Case Corporation  
Chiron Diagnostics  
Dow Corning Corporation  
Hasbro  
Impressions Inc.  
Intel Corporation  
Key Industries, Inc.  
Lafarge Canada Inc.  
Lifeway Christian Resources of the SBC  
Medtronic, Inc.  
N.E.T.  
Occidental Chemical Corporation  
Raytheon Systems Company  
Siemens  
Tektronix-MBD Div.  
USF Logistics