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# **A Holistic Approach to Supply Chain Management**

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The impact on IT professionals

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*Medical Industry Information Report*

*Spring, 2000*

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***CGR*** *Management Consultants*

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Every now and then, a periodical like MIIR, which focuses on information technology, should remind its readers of the need for holistic approaches. Consider this article just such an occasion. Focusing on only the information technology aspects of supply chain management, or SCM, will limit the effectiveness of IT professionals. While technology is an important component in structuring supply chains, there are others to consider. Professionals need at least peripheral awareness of the other fronts on which competitive battles are waging. These battles will likely affect their efforts.

To support this proposition, we have identified five management tasks that have changed with the emergence of supply chains as the basis for competing. Notice the assertion that organizations now compete on the strength of the supply chains they join or design themselves, and less on a traditional company-to-company basis. Also we said that the way tasks are performed would change. The tasks aren't new; and much time, effort, and money have been expended in their execution. However, how managers perform these tasks will change; and they must equip themselves to handle those changes.

Here is a task-by-task description of the trends we've observed.

## **SCM Task 1: Developing supply chains for strategic advantage**

SCM functions have long been diffused into operating functions like procurement, distribution, engineering, and manufacturing. As a result, sponsorship for information technology initiatives usually comes from these functions. For example, in companies that buy much of what they need to produce their products, SCM revolves around the *procurement* process. If pressed, this type of company will view the procurement executive as the likely supply chain manager. For makers of expensive, highly engineered medical equipment reliant on high cost components and subsystems, this model may be popular.

The company that's heavily dependent on *distribution*, on the other hand, likely has a different view. It focuses on moving goods to customers -- so the supply chain executive would likely be the head of distribution. Other companies spend much on *information management* systems. Over time, they may define SCM in terms of the information systems they use to do business.

A broader operational viewpoint can be characterized as the *business process reengineering*, or BPR, viewpoint. A company following this approach may undertake broad process improvements to overhaul the fulfillment cycle from customer order back to buying parts needed to fill the order.

An even broader, and for many a better, view is the *strategic* viewpoint. Laurie Orlov hinted at the needed direction in a recent edition of MIIR.<sup>1</sup> With this viewpoint, the supply chain is a basis for competing, not a necessary evil targeted for cost reduction. This is based on a couple of premises. The first is that the edge from product technology, no matter how good it is now, is a wasting asset. In time, today's innovations will be commonplace. Up to date technology will be a necessary, but not sufficient, condition to stay competitive.

An example of this is the acquisition of AOL, the user-friendly Internet service provider, of Netscape, the techie outfit. In this case, the ability to appeal to the needs of distinct market

segments determined competitive success. AOL focused on the appropriate technology for its millions of customers; Netscape took pride in technology for its own sake.

The second underpinning for the strategic viewpoint is the existence of a “product life cycle.” This cycle proceeds from product inception to the growth phase on to maturity and, finally, to decline. As growth products mature, winning companies will have directed some of their profits into supply chain development. For the IT professional, this is likely to produce not one, but several, supply chains targeted at market segment requirements. This raises the ante with regard to systems development. For example, Orlov notes that eRelationship Management, or eRM, will provide a technology framework for “channel-smart operations.” Supply chain systems will focus on the needs of customers in distinct channels.

## **SCM Task 2: Implementing collaborative relationships**

A second task calling for new skills is improving the way internal functions collaborate. In discussing Task 1, we contended that long term competitiveness depends on supply chain improvements. But what if efficient supply chains require product commonality to be more responsive?

With commonality, similar designs support a broad range of products. Development costs, inventory, and lead-times are lower. And what if product commonality requires cooperation between marketing, engineering, and operations? Does the organization really operate that way? What if the needed cooperation is hard to come by?

One manufacturer reported impressive savings in inventory and its cost by realizing its product, used in nuclear medicine, wasn't a “system” but the “modules” assembled into a system. Its traditional approach was to build new products from the ground up. By standardizing module design, the company now produces a range of combined modules that serve a broad range of customer needs.

## **SCM task 3: Forging supply chain partnerships**

Our third task extends the partnership idea from inside to outside the company. Two themes lie behind this trend. The first is the notion of “core competence.” Companies increasingly find they can compete more successfully and grow faster if they limit what they do to what they do best. In addition, the cost of maintaining a competence in a “sideline” activity has increased greatly – often because required information systems are prohibitively expensive.

So out go functions like transportation, warehousing, human resources, supplier quality tasks, and many IT capabilities. To be successful at this, a necessary new skill is picking the right partners so the company can get on with what it does best.

The second theme strikes at the strategic tasks performed by the organization – ones the company will want to nurture – and certainly retain. This has to do with the synergy derived by combinations of distinct companies along the supply chain. Properly done, these combinations can have the effect of creating new “space” in the marketplace. This space is a capability that doesn't now exist, coming from a fresh and unique combination of skills. Perhaps the “clicks and bricks” marriages of e-businesses and retail chains will

become a classic example of creating new space. Information technology, of course, will play a vital role in making most of these marriages successful.

## **SCM Task 4: Managing supply chain information**

Recently Ed Hess, the editor of *Integrated Solutions*, a trade publication for the technology industry, had some advice for IT professionals.<sup>1</sup> In an article, "Break Time is Over" he advised IT professionals, who have recently "solved" their Y2K problem, to start scouting for new projects. He pointed to CRM (Customer Relationship Management) and WMS (Warehouse Management Systems) as areas to attack.

Both can be important supply chain applications. However, while this advice may be good for computer department productivity, it may not be the right thing for the company. Chasing a solution just because it's topical and offers a chance to implement new technology may not be the right business decision.

The Supply-Chain Council, or SCC, offers a more studied approach to setting priorities for systems efforts. The SCC is a non-profit organization composed of companies and government agencies with a stake in improving SCM practices. To accomplish its mission, the SCC developed the Supply Chain Operations-Reference (SCOR<sup>TM</sup>)\* model to standardize supply chain operations definitions. "Process reference models" like SCOR integrate BPR, benchmarking, and process measurement.

Companies have used the SCOR approach to define their agendas for improvement. These include AT&T Wireless and Mead Johnson Nutritionals, or MJN. The AT&T business was built around the operations of the former McCaw Cellular Communications, Inc. The company suffered from a proliferation of products and suppliers. MJN is almost 100 years old. The company is the market leader in global infant formula market share, and has annual sales of about \$2 billion. Brands include Enfamil, Pablum, Boost, and Sustacal. In 1967 the Bristol-Myers Squibb (BMS) Company acquired the company. BMS maintains aggressive standards for profit and sales growth for its division, including MJN.

To develop their requirements for supply chain improvement, each company employed the SCOR methodology. We summarize that methodology with brief descriptions of the first three levels of SCOR model application as it applied to these two companies.

### **SCOR level 1: Basis for competition**

The SCOR approach begins by asking the company to determine its "basis for competition," or BOC. This is a product-by-product assessment of the areas in which the company needs to perform. BOC areas identified in SCOR include reliability and quality, flexibility and responsiveness, supply chain cost, and asset utilization. Of course, an organization can add other BOC items for competitive analysis. By comparing the desired state (the performance objective) with the actual state (the current situation), company strategists can identify and measure the performance gaps they need to close.

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<sup>1</sup> Hess, Ed, "Break Time is Over," *Integrated Solutions*, January 2000, page 14.

\* Registered trademark of the Supply-Chain Council.

## **SCOR Level 2: Operations analysis**

At the second level, the SCOR model turns its attention to the operations that need to change to close the performance gaps. For example, AT&T Wireless produced a list of action items that included the following:

- Need to correct a convoluted supply chain that had grown without the benefit of conscious design.
- Too few common parts in its products leading to long lead times and excessive inventory.
- Spread out operations in the U.S. and Mexico.
- Too many suppliers.

At level 2 the companies also pick the “model” and SCOR template for links in the supply chain. Links can include suppliers, distribution centers, and manufacturing sites. Examples of models include build-to-stock, build-to-order, and design-to-order. All links need not follow the same model. For example, a supplier could stock to AT&T forecasts while AT&T manufacturing facilities implemented a design-to-order model.

## **SCOR level 3: Performance Levels, Practices, and Systems Selection**

At this level, the company needs to decide what systems and practices to deploy. It is at this point that the decision to implement a CRM or a WMS as recommended by Ed Hess should be made. In AT&T’s case, several requirements could only be met with new information systems. In particular, these included the need for visibility across the product pipeline, build-to-order discipline in AT&T factories, and real time available to promise logic built into production and inventory management systems.

## **SCM task 5: Removing cost from the supply chain**

This task is not last because it’s the least important. In fact, most companies pursue a never-ending quest to take cost out of the supply chain. If there is any fault in this, it is that they focus on budget numbers and overlook the root causes of cost in the supply chain. While space doesn’t permit writing in detail about specific approaches, the root causes are worth mentioning. Too often, IT and other improvement projects are pursued to “reduce cost” not correct one or more of the root causes. Here we’ll briefly describe these root causes and a few of the potential solutions.

### **Lack of clarity**

Costs become even more obscure in a chain of companies than they are in a single company. More supply chain partners will use activity based costing approaches to improving visibility over supply chain costs.

## Variability

Variability has both internal and external causes. External causes are often market-driven. Dealing with seasonal sales is an example. Supply chain designs need to define needs for flexibility due to external causes. Internal causes reflect hard-to-kill habits like building inventory near the end of accounting periods. Internal causes also include variability in internal processes from machines or people skills. Systems should at least point to the processes and decision-making patterns that produce the controllable variation.

## Product design

As we described in the case of AT&T Wireless, product design establishes the cost of production. One can easily become frustrated in efforts to reduce operations costs that can only be addressed by product redesign.

## Information sharing

Too little time is spent effectively deploying information to decision-makers. We may pile on system after system with little thought regarding its usability or opportunities to “automate” decision making along the supply chain.

## Weak links

There are all types of linkages along a supply chain. These include physical, information, and financial exchanges. In any chain there are “weak” links that should be strengthened or replaced. A good example is the forecasts that supply chain partners pass back and forth. An example is the Collaborative Planning Forecasting and Replenishment initiative. CPFR requires a business relationship between partners and has taken root in the retail industry. CPFR strives to better match demand and supply, improve inventory management practices, and capitalize on new systems through sharing.

The consequences of any weak link may show up as a symptom at some point. One needs to track the symptom back to the link that needs to be strengthened to solve the problem.

## Summary

We started this article by pointing out that competitive supply chain wars are fought on many fronts. This is certainly no less true for the medical product industry than it is for any other. In fact, it is probably more applicable as healthcare economics continue a process of radical change. Leadership in these areas will require concerted efforts from many, and the technology segment must play an active role to assure that the “right” technology is pursued for the “right” purposes.

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<sup>1</sup> Orlov, Laurie, “Moving Beyond Extranets to Serve Market and Distribution Intermediaries,” *MIIIR*, Winter 00, pp. 21-23.