Cover Story

The Supply Chain of Dollars and Cents

By Julie S. Roberts

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Supply managers can step ahead with business performance by adopting a broad financial perspective in supply chain functionality.

Points of Interest

At a glance, here are the main points covered in this article. By reading it, you will learn:

- The impact supply management can have on an organization's financial performance
- The definition of a financial supply chain
- The elements that comprise a financial supply chain
- How to optimize the financial supply chain externally and internally
- The value of having an optimized supply chain

In most organizations, it's not difficult to pinpoint the physical or material supply chain. One can identify the organizations and their transfers of goods or services that pass through to the end user. In fact, most organizations have identified their physical or material supply chains and are engaged in optimizing them. For many, this may mean working toward leaner inventory, creating a better logistics plan, or even ensuring better supply chain alignment with the organization’s strategy. However, the broad term, "supply chain," actually encompasses more than one supply chain. The Center for Strategic Supply Leadership (CSSL) report, "Supply Manager's New Role: Chief Financial Officer of the Supply Chain," written by Joseph L. Cavinato, Ph.D., C.P.M., senior vice president and ISM distinguished professor of supply management for ISM, explains an important discovery from a recent corporate think session held with a number of senior managers from various industries and backgrounds. Their discovery: "There is no such thing as a supply chain. Each firm has at least four of them - a set of physical chains/networks, an informational chain, a relational chain, and a financial chain."

Supply managers use the language of finance every day. Whether it's the dollar, euro, yen, or some other currency, supply managers are thinking and talking about money - specifically, their organization's funds. For one manager who attended a recent CSSL corporate think session, the financial statements "revealed that at any given time, over 70 percent of [the organization's] assets was in its internal physical supply chain. Additionally, the average of purchased materials was 55 percent of total revenue, MRO was 7 percent, services were 18 percent - a total of 80 percent of the revenue dollar." From examples like this, it is easy to see that supply management plays an important role in an organization's financial supply chain.
The supply management effect on the financial status of an organization can even impact an organization's stock price. In the chart below created by Stephen Timme and Christine Williams-Timme, of FinListics Solutions, Inc., a supply manager's potential impact in the areas of revenue, operating expense, inventory turns, fixed-asset utilization, and days' sales outstanding is depicted graphically. Supply managers, affecting only a few elements of the financial supply chain, can impact an organization's stock price by as much as a total of 25 percent. Truly, the work of supply managers impacts an organization in terms of its profitability.

Optimizing any supply chain, be it physical, financial, informational, or relational, begins with understanding the supply chain and identifying its elements. The next step is understanding which elements affect or are affected by the supply management organization, as well as those elements that supply management has minimal effect upon. With that knowledge, the supply management organization can then understand its role in the particular supply chain - both inside and outside the organization. Once it understands its role, the supply management organization must adopt a broad perspective and identify better ways of affecting the entire supply chain - in this instance, adopting a CEO or CFO perspective about the financial supply chain. Finally, it is a vision of the benefits of an optimized financial supply chain that drives these actions.

What is a Financial Supply Chain?

The financial supply chain is defined by ISM as the flows of cash from firm to firm, incurred expenses, investments, and costs of processes involved in the creation and eventual delivery of goods and services. Stated even more simply, the financial supply chain is the flows and uses of cash throughout the physical supply chain. Where products, services, and/or information is transferred, there is an accompanying flow of cash.

The evolving financial supply chain. The financial supply chain, as a part of the overall supply chain, has evolved just as purchasing has evolved to supply management. Traditionally, Cavinato explains, the financial supply chain's elements might have included a portion of the costs associated with purchasing a product or service and making the payment. The financial supply chain has now expanded to include the costs of design, working capital, and asset investments. Furthermore, rather than attributing specific costs to various organizations within a firm, the entire firm becomes responsible for the supply side of the business.

As the chart on page 42 shows, the elements of a supply chain include many costs and cash flows. Each organization's financial supply chain will include different elements based on a variety of factors such as industry (manufacturing or non-manufacturing), payment options (for organizations using procurement cards, the processes associated with that program will represent an element of the financial supply chain), and financing options.

Elements of a financial supply chain. Some elements that can be identified in many financial supply chains include: transaction costs, price/cost margins, total cost evaluations, reconciliation, payment schedules, discount opportunities, payment options, cost of communication with supply chain members, return on investment of capital purchases, cost of doing business with a particular supplier, alternative financial arrangements, understanding economic implications, and what action to take upon their identification.

Supply managers are involved with many of these elements already. Javier Urioste, senior
vice president/chief procurement officer for JPMorgan Chase, describes an example of an element of the financial supply chain that is impacted by supply management in the financial services industry. By knowing the institution's cost of capital versus the cost of capital for suppliers, the institution is able to optimize its payment of suppliers. He notes, "As a bank, if we can get funds at rates that are lower than what anyone else can get, it certainly behooves us to pay our suppliers early, to avoid their charging us for their interest costs to use their money. That in itself is a big factor in lowering costs."

Inventory represents another area in which supply managers are impacting the financial supply chain - both in terms of managing the flexibility according to economic conditions as well as shortening the inventory cycle. Bill Armstrong, manager of accounts payable for Texas Instruments, Inc., explains that as a result of the recent economic and industry contraction, the procurement organization was challenged by senior management to better manage inventory levels. They play an integral part in working with suppliers to manage deliveries or even cancel orders. He says, "We, as an organization, became much more attuned to the necessity of better controlling the inventory aspect of the balance sheet. We've worked closely with our operating managers and finance organization to achieve that goal."

If one sees a financial supply chain as broad and far-reaching, it is unrealistic to believe that a supply management organization directly impacts every element. Nearly every organization has numerous divisions under its financial umbrella that impact the financial supply chain, and some more directly than the supply management organization.

An example of one such element is alternative financing options. The 1999 CAPS Research study, "The Impact of Purchasing on Financial Performance," indicates that "financing decisions are largely outside of the scope of the purchasing department's influence." G. Ken Newton, Jr., vice president, procurement and logistics for Texas Instruments, Inc., concurs, noting that Texas Instruments' procurement group has little involvement in the area of alternative financing. The decisions regarding various financing methods are handled by the organization's treasury department.

**Understanding and Optimizing Requires Perspective**

Optimizing the financial supply chain requires perspective. Supply managers must not only understand and optimize their own roles in the financial supply chain, but also be able to complement the other roles and elements.

**Optimizing externally.** Optimizing the financial supply chain requires that some focus be directed to making external transactions efficient and to assisting in eliminating suppliers' costs as much as possible. In fact, it pays to look for ways to reduce the suppliers' costs of doing business as well as examining working capital issues. Although initially, it may seem illogical to pay a supplier any sooner than necessary, the returns - in terms of reduced price and better supplier relations - may far outweigh the days of additional interest that may have accumulated as a result of paying the supplier later.

However, as Bernard De Groeve and Kevin Mellyn explain in their article "Financial-Chain Management," from the December 2000 issue of ecfonet.com, "The seller has to finance his buyer about 90 percent of the time. There is more working capital finance in corporate balance sheets than in the banking system for the simple reason that from a buyer's perspective, it is free." De Groeve and Mellyn go on to explain that financial working capital is not free but is added to the cost of goods sold to the buyer. The motivation to look beyond the four walls of the organization for greater financial supply chain efficiency then becomes a cost issue. If a supply manager can identify ways to reduce suppliers' costs, he or she can
actually reduce the price of goods and services for his or her own organization.

To do this, an effective supplier relationship is required. This creates the trust needed to gain information for identifying ways to reduce the supplier's cost and, in turn, the supply manager's cost. Thus, dealing effectively with suppliers becomes integral to optimizing a financial supply chain. A supply manager is often the only buying organization representative with whom a supplier will have contact. Supply managers can, as Mark Combs, director of performance measurements for Ascension Health, suggests, provide key suppliers with information about the buying organization's future demands and future needs. This information can help the supplier to become more efficient and valuable to the organization. Combs also recommends communicating with suppliers when the organization is considering new products. Not only does this maintain the trust between the supplier and the supply manager by allowing the supplier to minimize the impact of the change, but it also gives the supply manager the opportunity to learn of new products or services that he or she may not have known the supplier offered.

**Optimizing internally.** There is also great value in understanding the roles of other players internally in the financial supply chain and their effect on the chain. Working in the healthcare industry, Combs notes the importance of supply managers understanding the criticality of clinicians' supply needs. In some instances, he explains, costs can't be reduced because patient care comes first. For any industry, it is important for supply managers to understand which products or services are critical, and to then find other ways to reduce costs if substitution is not an option.

Working together with internal clients becomes very important for avoiding poor decisionmaking related to misunderstanding total costs and budget performance. Together with the internal client, total cost analyses can take place - including the measurement of opportunity cost and total cost of ownership - to avoid potentially poor decisions made purely to save money, which may or may not work in the long run. Internal clients and partners should be involved in developing procurement strategies for various commodities. The internal client may have more insight about cost-effective strategies or ideas for product or service substitution than a supply manager. Urioste advocates, "Involve clients early; involve them on a cross-functional basis. Help them understand what you [as the supply manager] are trying to accomplish. Work to understand their needs and find the suppliers who can help meet those needs."

Who are the internal clients to involve? What other functions or roles should supply managers understand to avoid bad decisions and to reap the benefits of working together to form procurement strategies? Newton of Texas Instruments has seen firsthand the benefit of working closely with the accounts payable organization within his firm. He explains, "About four years ago, the controller of Texas Instruments indicated that accounts payable ought to be a part of procurement instead of with finance or accounting. I did not agree at first, but after more talking, I realized he was right, and we've achieved a lot of benefits by integrating accounts payable into procurement. We've seen much better cooperation between the actual procurement team and accounts payable. They're both part of the same process."

Beyond understanding the various roles of a financial supply chain - both external and internal - optimizing the financial supply chain requires additional action by supply managers. These actions include:

- Examining the strategies and objectives as they relate to the financial supply chain
- Understanding and adopting a CEO/CFO perspective about the financial supply chain
- Gaining the skills and competencies necessary for better financial supply chain management
- Performing additional actions to support greater financial supply chain effectiveness

**Examining the strategies and purposes.** For any supply chain to be effective, the practices of the supply management organization must align with the organization's overall purposes. In the instance of the financial supply chain, practices such as cost analysis and reduction, streamlined transactions, and decisions about outsourcing must be conducted with the strategic purposes and goals of the organization in mind. For instance, it may not be worthwhile to spend the time analyzing the costs of a supplier that supplies products for a line that the organization will discontinue in the future.

Like many others, Texas Instruments' overall objective, Newton explains, is to maximize profit and growth. Supply managers can do this by managing a cost-efficient financial supply chain, and by literally managing their supply line as though they were the CEO of it. Newton challenges his supply managers to consider themselves the managers of their own companies and to spend the organization's money as if it were their own. In this respect, supply managers are more careful about protecting and enabling profitability for the organization.

**Understanding and adopting the CEO/CFO perspective.** No one in supply management circles has escaped the advice to communicate with CEOs and CFOs in "their language." That's because it's true. CEOs and CFOs want to hear about cost savings and increased efficiencies in broad terms - terms that show the impact of the savings and efficiencies on the measures that matter such as the bottomline, working capital, and/or profitability. Providing this information requires an understanding of the questions that CEOs and CFOs are facing. Timme and Williams-Timme, in their article, "The Financial-SCM Connection," from the May/June 2000 issue of *Supply Chain Management Review*, explain that "the CFO constantly is searching for new answers to such questions as:

- How can the return on existing business be improved?
- What new businesses should we enter and what are their returns?
- Where will the company get the funds to run the business and fund growth?
- How will the company meet investors' expectations?"

Most of these questions focus on a long-term, strategic angle. Timme and Williams-Timme note that the CFO's perspective from a tactical standpoint may be, "What is bottomline impact at the departmental level from improvements in capital utilization from days in inventory, network consolidation, days' sales outstanding, etc.?" Supply managers, through effective management of their elements of the financial supply chain, can assist in providing answers to these tactical questions that lead to answers to the broader and more strategic, long-term questions that a CFO faces.

**Skills and competencies necessary for better financial supply chain management.** As outlined by Cavinato, in his CSSL paper, several key competencies and skills are needed to be the CFO of a firm's financial supply chain. Supply managers should also develop these areas of competencies and skills as much as possible to understand the CFO perspective as well as to enhance their own effect on the financial supply chain. These areas of competencies, suggested by Cavinato, include:

- Financial accounting: This is a comfort level with the firm's income statement and balance sheet, and to be able to trace and translate purchasing, supply, and supply
chain activities and proposals into financial terms for the firm as a whole.

- **Managerial accounting**: This body of knowledge provides the ability to examine a process or set of activities and functions across departmental and corporate boundaries in order to develop a flow of costs.

- **Finance**: Key concepts here are the cost-of-capital of the firm and having comfort with present value and discounted value tools for use with the time value of money, inventories, and assets. These are building blocks for identifying, understanding, and persuading by way of financial opportunities and impacts of business changes.

- **Supply chain analysis**: Beyond purchasing, supply chain analysis entails understanding all of the activities, flows, and financial characteristics arising from the original supplier and tracing through to the last point in the system. This requires having the abilities and influence needed to ascertain costs from other areas and firms.

**Additional actions.** One additional action for optimization is understanding the hidden costs of current financial supply chain inefficiencies. For instance, what is it "really" costing the organization to delay payment to a supplier? This may be resolved by merely asking the supplier, or more intensive calculations may be required based on data from the organization and the supplier. This information will be needed as the supply management organization may have to sell other organizations within the firm on the idea of creating a tighter financial supply chain. In some cases, financial supply chain optimization will require change such as standardized products when customized products had been used in the past - which almost always requires some convincing on the part of the organization or person driving the change.

Key suppliers as well as internal partners and clients should be involved. Key suppliers will be needed for their role in streamlining transactions, collaborating to lessen the cost of doing business together, as well as controlling the costs for the actual products and/or services.

**The Value of an Optimized Financial Supply Chain**

Most processes and flows in business do not function perfectly all of the time. Most operate on a continuous improvement basis, and this is the case with the financial supply chain. Financial supply chain activities still occur even if there is no recognition of their interconnectivity. But when a financial supply chain is left to itself, without any thought for collaboration or efficiency, Cavinato explains in his CSSL report, "The Four Cornerstones of Value-Producing Supply Chains/Networks," the following may occur:

- Overhead costs rise or stay higher than necessary.
- Payment delays are built into supplier price and cost structures.
- Corporate overhead is higher than it should be.

Conversely, an optimized financial supply chain can result in better overall financial and supply performance. Instead of relying on high levels of working capital throughout inventory and/or payment cycles, supply management organizations, through better inventory and cash management, may reduce the need for working capital or floating capital to fill in cash gaps. The organization is able to do more business with less working capital when inventory and payment cycles are tight and assets are utilized.

The means of optimizing a financial supply chain is really just identifying ways to conduct business more effectively - with as little waste (money, time, or effort, for example) as possible. In fact, the purpose of optimizing a supply chain of dollars and cents is not to focus solely on the financial supply chain as an individual entity, but rather to acknowledge that financial transactions, costs, and decisions, all elements of the financial supply chain, affect
one another. An effective financial supply chain contributes to better financial performance and better physical, informational, and relational supply chains - and a better overall supply chain.

### Why and Where Do Invoice Errors Arise?

Increasing financial supply chain efficiency is not just about increasing collaboration among financial elements relating to supply, but it is also about ensuring that the functions that are occurring are adding value to the overall supply chain. Time should be spent ensuring that invoices are handled properly; however, spending unnecessary time on these errors may not result in the desired financial supply chain efficiency. Getting rid of tedious processes requires that supply managers understand where the errors come from in order to find ways to eliminate them. There are three areas in which most invoice errors can be classified.

The "wrongs" can include incorrect data on invoices such as:

- Item/service
- Quantity
- Price, including price extension to total charge
- Payment or transportation terms
- Transportation and/or shipping and handling charges
- Timing (especially where progress work timelines and payments are involved)
- Contract or purchase order number
- Internal job/case/work number (when required in invoices)
- Name and address of the buying firm
- Name and address of the expected "pay-to" party
- Method of submitting invoice or payment (where a special code, electronics submission, etc., is required)
- Unexplained or unauthorized items of work
- Incorrect contract being applied (when the buying firm has many with the selling firm)
- Items delivered, ordered, and billed don't match (three-way disconnect)
- Improper treatment of taxes, duties, etc.
- Improper discount being applied
- Unknown upcharges for services/work not authorized

The "not enoughs," meaning that the information on the invoice is insufficient, might include:

- Lump-sum charges with little or no explanation
- Work order, purchase order, etc., are not included on the invoice
- Information lacking regarding related transportation and/or importing facets of the items/work

The "confusers" include the following issues that may perplex the recipient of the invoice:

- Multiple copies of the same invoice sent at different times
- Instances where it is difficult or impossible to trace the invoice to the items or the work
- When many possible contracts or orders exist between the buyer and seller, and it is not obvious which one applies to this invoice
- Charges are not line-itemed sufficiently so as to allow analysis of specific work, back orders being included or not, past charges being adjusted, etc.

It is advantageous to devote some attention to the efficiency of the payment portion of the financial supply chain. However, understanding where the effort is best spent can ensure greater efficiency to the overall supply chain - including the physical, financial, informational, and relational supply chains.

Information provided by Joseph L. Cavinato, Ph.D., C.P.M., senior vice president and ISM distinguished professor of supply management for ISM.
Boundary of Supply

Second-Tier Supplier

- Supplier's Business Model Costs/Risks
- Supplier's Asset Investments
- Supplier's Creation and Design Costs
- Supplier's Purchasing Costs and Processes
- Supplier's Logistics, Manufacturing, Service Costs and Processes
- Supplier's Pricing Models
- Supplier's Order Management
- Supplier's Settlement
- Supplier's Working Capital
- Transportation, Delivery, Make-Ready Processes
- Landed Costs
- Settlement
- Relationship and Order Processes

Price

- Requisition/Release
- Need Detection and Planning
- Purchasing/Supply Process and System Costs
- Working Capital
- Make/Service/Use Costs
- Logistics, Manufacturing, Service Costs and Processes
- Asset Investments
- Design Costs and Processes
- Business Model Costs and Risks
- Customer Logistics
- Sales Costs and Processes
- Customer

There are no boundaries to supply - internally or externally.

**Source:** Joseph L. Cavinato, Ph.D., C.P.M., senior vice president and ISM distinguished professor of supply management for ISM.

Alternative Financial Models

There is no one standard model to which every organization's financial supply chain must conform. There is not even one standard way to conduct every transaction. Though most organizations are fairly traditional in their payment methods and financing options, alternative financial models and options may prove a viable option for some organizations.

What are these new financial models and options? One model or structure operates with an entire supply chain linked together by the physical supply chain, while the financial supply chain is routed through a central financial institution. Products and services travel between each member of the supply chain, but the payments and invoices are handled by a central financial institution. The system is triggered when a purchase order matches a shipping document, and the invoice is sent to the financial institution rather than the customer.

The financial institution gathers all of the transactions and funds each company as it executes an order. Financial institutions will match the financial engine - accounts receivable and accounts payable records - to the supply chain so that every company is paid immediately and electronically via a third-party bank.
Alternative models and options are based on the same premise - accelerating payment to suppliers and thereby accelerating cash flow throughout the supply chain. One such model involves a third-party provider that is able to offer settlement or payment services through collaboration between its financial and logistics entities. Upon receipt of the deliverables, the supplier is paid (accelerating payment) and yet there is little risk because of the logistics team's superior tracking abilities.

Besides strengthening relationships with members of the supply chain, an accelerated cash flow has a terrific effect on other aspects of the supply chain. If the entire supply chain is linked to the same financial institution, customers buying your organization's end product will pay faster. Less working capital is lost in the supply chain tied up in receivables and payables. All organizations in the supply chain have more money available to them to expand business.

Alternative financing options and models need not be sophisticated. A simple example: A buying firm, in a candid conversation with a selling firm, realizes that the seller's cost of capital is much higher than the buying firm's. By condensing the payment schedule (i.e., making payment more quickly), the buying firm enables the selling firm to incur less cost in terms of working capital - thereby impacting the cost of the goods or services, and in turn, the price of those goods or services to the buying firm. Clearly, this example requires a strong relationship of trust, but it is another simple example of alternative financing options that may make a financial supply chain more efficient.

Alternative financial models and options are just that - alternatives. Not every example may be appropriate for every organization, but they should serve as a catalyst for organizations to identify and examine options for greater efficiency in their own financial supply chains.

Information provided by Irene Moore, director of marketing and communications for UPS Capital; Joseph L. Cavinato, Ph.D., C.P.M., senior vice president and ISM distinguished professor of supply management for ISM; and Ephraim Schwartz, "Financial Services Streamline B-to-B Supply Chain," March 9, 2001, infoworld.com.

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