How Supply Chain

Supply chain finance is an invaluable tool for lengthening a buyer's days purchases outstanding and increasing cash flow. SCF has the powerful potential to improve a supplier's financial viability and reduce a buyer's purchase costs and internal procurement expenses. Here's a quick refresher course for supply chain leaders in every industry who want to drive stronger cash flow.

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Business leaders have one big reason to be happy these days. Most are heading up companies that are sitting on historically high cash balances. Research by FinListics Solutions shows that in the United States, companies outside of financial services—retailers, distributors, manufacturers, and telecommunications providers, for example—have accumulated almost $2 trillion in cash among them. At companies with more than $1 billion in revenue, cash was equivalent to 8.5 percent of revenue in 2009 compared to 5.2 percent the year before.

Laudable though those numbers may be, they are still not enough to give businesses the long-term resilience they need to sustain growth, let alone to outcompete in today's volatile global economy. That is why many leading companies are focused on initiatives to further improve cash flow and liquidity. One of these is better management of the cash operating cycle, which is the net number of days in inventory, accounts receivable, and accounts payable.

This article explores the use of supply chain finance (SCF) to better manage the cash operating cycle. SCF can lengthen accounts payable without hurting suppliers' financial viability; at the same time, it has the potential to lower direct purchasing costs as well as the costs of the procurement transactions themselves. The concepts are well proven, and the tools and techniques are not new. But they are still not used by supply management teams to the extent that they should be. Given the broad-based hunger for improvements in cash flow, the time is right for a short refresher course on the topic.

The Cash Operating Cycle Explained

The cash operating cycle is a key driver of financial performance and is comprised of:

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Andy Baker

• Days in inventory (DII)—the number of days of inventory held in raw materials, work-in-process, and finished goods for which a company has ownership

• Days sales outstanding (DSO)—the number of days it takes to collect from customers the revenue from products and services provided

• Days purchases outstanding (DPO)—the number of days it takes to pay suppliers for products and services that have been bought and invoiced

The cash operating cycle is expressed in days to make it easier to analyze changes in a company's performance and compare them to those of other companies. DPO is deducted in the calculation because accounts payable is financing provided by suppliers. However, accounts payable is not a free source of financing. A company's payables are suppliers' receivables upon which they incur a capital charge. This capital charge is a part of the product purchase cost.

The authors regularly track the median and top-quartile cash operating cycle and its components for a sample of large U.S.-based companies. Our studies show that the median cash operating cycle is 62 days compared to only six days for the top quartile. Examining the cycle's three components provides valuable insights into the big difference between those numbers. The top quartile companies have 22 fewer days invested in DII;

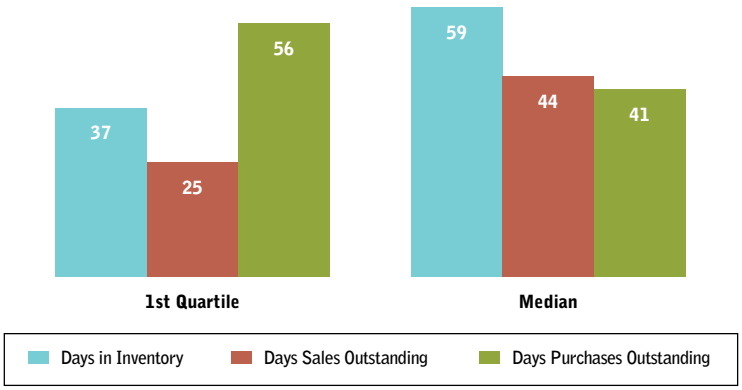
19 fewer days in DSO; and 15 more days in DPO. (See Exhibit 1.)

Table 1 below shows the make-up of the cash operating cycle for some well-known companies. Note that Dell's overall figure is negative 49 days. Dell sells its inventory and collects its receivables before paying its suppliers. Walmart's DPO of 37 days is less than its 41 days DII. The retailer has a publicly stated goal of increasing accounts payable faster than it expands inventory, which will increase DPO relative to DII. It is also interesting to note that P&G's DPO already exceeds DII.

However, it is important to remember that the emphasis must be on financial performance overall not on this or that financial metric. Frequently, corporate performance suffers because the appropriate trade-offs between specific metrics are not made. Too often, decisions are not made from an enterprise-wide perspective, often because department or function managers are working with scorecards that optimize primarily the performance of their areas of operation. Nonetheless, experience suggests that differences in financial metrics often indicate significant opportunities for improvement even if the gap —between your company's performance and that of its best-performing competitors, for example—is not completely closed.

EXHIBIT 1

What Drives Differences in Cash Operating Cycle Performance



Source: FinListics Solutions. Results are for North American non-financial services companies with revenues greater than $1B.

TABLE 1:
Cash Operating Cycle Examples

	Dell	Walmart	Procter & Gamble
DII (Days in inventory)	9	41	67
DSO (Days sales outstanding)	40	4	25
DPO (Days purchases outstanding)	98	37	76
Cash Operating Cycle (DII + DSO – DPO)	-49 days	8 days	16 days

Better performing companies typically are more efficient in their use of working capital to support operations, as evidenced by their lower cash operating cycles. Most companies strive to manage working capital by reducing inventory (DII) and improving collection of receivables (DSO). Inventory levels and the speed of collecting receivables are concrete indicators of working capital efficiency and are usually relatively easy to monitor and control.

However, accounts payable—measured as DPO—is a vital component of the working capital equation. For example, for each $1,000 million in purchases, a one-day extension in DPO increases accounts payable by about $3 million ($1,000 million divided by 365). Closing the 15-day DPO gap shown in Exhibit 1 cuts investment in working capital by $45 million per $1,000 million in purchases.

The Overlooked Payables Factor

It is our observation that business leaders overlook or undervalue accounts payable—or see it as a less controllable component. We believe that that perspective has to change.

There is movement in the right direction: More companies are setting goals to extend DPO to meet specific operational targets. For example, retailers often require suppliers to actively participate in the positioning of product on the store shelves, manage in-store promotions, and monitor point-of-sale data for replenishment. Now, some actively require the suppliers to participate in the cash cycle and to accept payment terms based on the retailers' DII. The extreme example: automotive component retailers that typically have DII levels approaching one year because of the slow turnover of automotive parts. Several have successfully moved suppliers out to one-year payment terms using various supply chain finance programs.

All else being the same, a higher DPO is better because it means more funding is provided by suppliers, resulting in a lower investment in the cash operating cycle and a higher return on capital. But, we all know that all else is never the same. The management of DPO involves trade-offs between product purchase costs and supplier financial viability. (Note that these trade-offs do

not include other considerations in the overall supplier selection decision, like internal costs and supplier quality and flexibility.) Let's explore two examples of these trade-offs.

1. DPO vs. Purchase Costs

Take the example of a company that makes annual purchases worth $1 billion. Its marginal tax rate is 40 percent and its cost of capital is 10 percent. The company provides terms of 2/10 net 30—that is, the buyer takes a 2 percent discount off the purchase price if the invoice is paid in 10 days or less, or the full amount if paid after 10 days. The buyer always pays on day 10 and takes the discount or pays on day 30 if the discount is not taken. Taking the 2 percent discount increases annual net income by $12 million. (See Table 2.)

Accounts payable are approximately $82 million if the discount is not taken (DPO 30 days) and $27 million if the 2 percent discount is taken (DPO 10 days) for a reduction in accounts payable of $55 million. The $55 million is a one-time change in the balance sheet whereas the $12 million increase in net income occurs each year as long as the 2 percent discount is taken.

TABLE 2:
Example of Trade-Off between DPO and Purchase Discount

Change in Cash Flow	Year 1	Years 2...n
Net Income*	$12M	$12M
Accounts Payable	-$55M**	$0M
Net Cash Flow	-$43M	$12M

*$1,000 purchase cost x 2 percent discount x (100 percent - 40 percent marginal tax rate)
**($1,000 purchase costs/365 days) x (10 DPO – 30 DPO)

Table 2 shows that the net cash flow impact the first year is negative $43 million—that is, a $12 million increase in net income with a $55 million reduction in accounts payable. However, in subsequent years the net cash flow benefit is the $12 million increase in net income from the lower purchase price.

So the trade-off in this example is the $12 million annual increase in net income versus the one-time $55 million reduction in accounts payable.

One of the best ways to make a decision when faced with this trade-off is to evaluate the total procurement cost, defined as the after-tax purchase cost less the capital charge avoided from accounts payable. (Note that this excludes items such as internal procurement expenses and supplier quality and flexibility, which would be included in the overall supplier selection decision.) After-tax purchase cost is defined as the unit price multiplied by the quantity, with that figure multiplied by 100 percent minus the marginal tax rate. The capital charge avoided from accounts payable is the dollar figure derived by multiplying accounts payable by the cost of capital.

In the example mentioned earlier, the change in after-tax purchase costs is $12 million and the change in the capital charge avoided from accounts payable is negative $5.5 million ($55 million reduction in accounts payable multiplied by 10 percent cost of capital). The net change in total procurement costs is $6.5 million savings ($12 million less $5.5 million).

From an economic perspective, it would appear that the 2 percent discount should always be taken because the total purchase cost is lower. However, there are other

Supplier Discounts: Fact or Fiction?

Cash-strapped suppliers often offer early payment discounts in order to get paid in 10 days or less. Interestingly, it is not always the financially weak suppliers that offer such discounts for quick payment. Separating unit cost from payment terms and viewing transparently is also a good method to determine if supplier-offered discounts are in fact real. When 2 percent discounts are offered in exchange for payment in 10 days, many procurement and finance managers feel compelled to take the discounts and reflect the savings as "income" or demonstrable benefits for the procurement department.

However, if the supplier is a highly rated company and always offers the discounts, is the unit cost $100, or is it really $98 with 10-day payment terms? If the procurement process is incented by the capture of early payment discount savings, the resulting behavior essentially inflates unit cost in order to obtain discounts. The net results are payment terms of 10 days and use of the company's balance sheet to finance the payments.

One option is to determine the cost of goods and add back in the financing cost under a bank SCF program so the supplier gets paid fast and the buyer gets true cost savings. For example, if the financing cost for a $100,000 invoice over 60 days is $329 (see main article), the buyer should be negotiating for a reduction in price of $1,671—that is, a unit price of $98,329 with 60-day terms. After discounting with the SCF program, the supplier gets its $98,000 and the buyer gets a 1.67 percent price reduction and the 60-day payment terms it wants. Overall, a company needs to segment suppliers and determine which are offering true discounts. Only then can it opportunistically take advantage of these discounts against a managed balance sheet while negotiating with other suppliers to lower cost and extend payment terms.

factors to consider. For instance, does the company have sufficient liquidity, alternative funding sources, and financial flexibility to take the discount? Is the 2 percent discount really a 2 percent discount? Has the supplier increased the selling price knowing buyer will take the discount? (For more on whether discounts are real or not, see accompanying sidebar.)

It is essential to understand dynamic financing concepts because the ideas are essential to competitiveness.

2. DPO vs. Supplier's Financial Viability

More and more buyers are demanding that suppliers provide longer payment terms. This increases a buyer's DPO but it requires the supplier to invest in accounts receivable, and thus incur higher capital charges. Securing of longer payment terms is not without a cost. The supplier may increase the purchase cost to compensate for the higher capital charge. Supplier service levels may decline as the supplier focuses on faster-paying buyers. In some cases, the supplier's financial viability may be impaired, which increases performance risk resulting in possible disruptions in the supply chain and ultimately, lost revenue for the purchaser's company.

Let's say that in this example we've been using, the buyer demands a 30-day increase in payment terms from a supplier. The supplier can increase price to offset the increased payment terms. Assume that the supplier's net income margin is 2.5 percent (typical of many Asia-Pacific suppliers). Its cost of capital is 12 percent; its marginal tax is 33 percent.

Let's also assume that the supplier in question accounts for 10 percent of the total $1 billion spend. With a 2.5 percent margin, net income then amounts to $2.5 million. Also, in many cases where a buyer can demand longer payment terms, the supplier is smaller and its cost of capital higher. Our supplier in this example is paying 12 percent whereas the buyer pays 10 percent.

The 30-day increase in payment terms requires the supplier to invest roughly $8.2 million (its $100 million in revenue divided by 365 multiplied by 30) more in accounts receivable. Its capital charge increases by almost $1 million ($8.2 million x 12 percent). The supplier would need to increase its sales price by about $1.5 million ($1 million increased after-tax capital charge divided by 100 percent minus its 33 percent marginal tax rate) for a 1.5 percent price increase. From an economic perspective, the supplier is made whole because the $1.5 million price increase offsets the after-tax $1.0 million increase in capital charge resulting from the $8.2 million hike in accounts receivable. But from a practical perspective, that rise in receivables may hurt the supplier's financial flexibility, depending on its access to funds.

Now suppose that the supplier cannot increase prices to offset the increased investment in accounts receivable. Its $1.0 million increase in capital charges (decrease in net income) results in a 1.5 percent net income margin, which equals a 40 percent reduction in net income. This would likely weaken the supplier's financial viability over time and increase the risk of disruptions to the supply chain, which could lead to higher operating costs and a possible loss of sales by both the buyer's organization and the supplier.

Techniques to Combat Payables Challenges

Not surprisingly, buyers often get push-back when they request longer payment terms from suppliers. This is where a well-managed SCF program can pay off. It can help to neutralize supplier constraints such as limited access to cheaper funds.

Supply chain finance programs typically enable suppliers to secure financing at lower costs than they can get on their own since the borrowing rates are based on the buyer's credit rating. In a typical SCF program, the buyer will usually request (or mandate, depending on the size of the buyer's organization or its economic leverage) that payment terms move from 30 days to 60 days, for example. A supplier can choose to provide the terms and self-finance the receivable. But if it needs access to low-cost funding to provide the longer terms, it can opt in to a buyer-sponsored SCF program provided by a bank. (See Exhibit 2.)

In an SCF scenario, the supplier ships the goods and the buyer matches the receipt to the invoice and approves it for payment on the due date (Step 1 in Exhibit 2.). The buyer then sends an electronic copy of the approved invoice to the bank verifying that it

will pay the supplier the net amount on the due date via the bank (Step 2). The bank notifies the supplier of the approved invoices (Step 3), usually on an electronic platform or Web portal, and asks the supplier if it would like to finance the invoice to get paid early. If so, the bank discounts the payment at an agreed interest rate and purchases the invoice from the supplier (Step 4). The supplier is essentially cashed out of the transaction and the bank receives the full payment from the buyer upon due date of the invoice (Step 5).

Let's look at an example of a $100,000 invoice. Payment terms are 60 days, and the discount rate is LIBOR (London Interbank Offered Rate) currently equaling 0.25 percent plus 1.75 percent for a 2 percent per annum total. So the discount is $329, calculated at $100,000 times 60 days times 2 percent divided by 365. The net proceeds, then, are $99,671.

In this example cited earlier, if a middle-market supplier borrows at the prime rate plus 0.75 percent, currently 4 percent per annum total, the carrying cost of a 30-day $100,000 invoice is $329. However, if the invoice is financed through a SCF program at the buyer's credit rating of LIBOR + 1.75 percent, currently 2 percent per annum, the carrying cost is halved so the $100,000 invoice can be financed for 60 days for the same $329 cost.

Essentially, the improved visibility of the buyer-approved transactions and netting of deductions and credit memos means that the bank can safely provide 100 percent financing to suppliers. Standard bank financing—without visibility from the buyer—sees banks usually financing only about 80 percent of an invoice's value, providing a buffer for deductions and offsets.

Further Benefits of SCF for Both Sides

As buyer and supplier negotiate the embedded cost and what the precise cost should be, an SCF program has the added benefit of validating the real cost. The benefit here is that when the supplier sells the invoice to the SCF bank, it accelerates its cash flow and reduces its own DSO to improve its working capital—even though the program was sponsored by the buyer to improve its working capital.

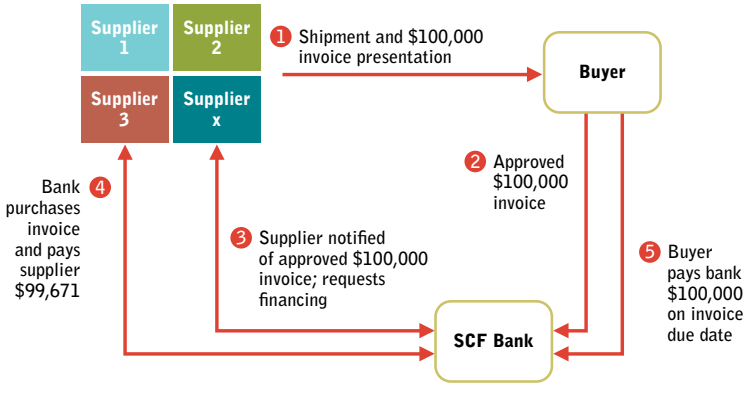
Supply chain finance programs typically enable suppliers to secure financing at lower costs than they can get on their own because the borrowing rates are based on the buyer's credit rating.

Because the supplier has been financed transactionally outside of its bank facility, there is less pressure on the supplier's credit line. Furthermore, SCF programs can sometimes reduce transaction costs by bundling payments or helping foreign suppliers to move away from letters of credit to open account sales. It also means far fewer inquiries to the payables department because all parties have greater visibility of approved invoices and reconciliation results.

However, there are circumstances in which it makes sense to blend SCF programs with dynamic discounting—that is, where buyers take advantage of early payment discounts offered by suppliers. The difference is that the buyer uses its own cash to discount the invoice and pay the supplier early. The advantages of dynamic discounting are that the buyer can lower the cost of goods by paying early and earn more than it would on other available short-term cash investments. The disadvantage? It moves the DPO needle the wrong way and has a high balance sheet cost, thus limiting the scalability of buyer-funded discounts.

EXHIBIT 2

The Basics of Supply Chain Finance



For its part, SCF helps reduce investment in working capital and increases cash from operations. However, with SCF sometimes it is harder to see these cost savings because they need to be calculated, whereas a buyer-funded discount is immediately captured and is a concrete saving. The goal should be to balance opportunistic dynamic discounting against a target of self-funded cash discounts with the use of SCF to obtain longer payment terms from a wide base of suppliers in order to achieve the desired DPO benchmark for optimal working capital management.

A Roadmap for Better Managing DPO

Unfortunately, most companies are not good at recognizing the working capital savings of obtaining longer payment terms. Many buyers are not well trained in finance and capital cost theory. So it is essential to provide ongoing education in these concepts so there is widespread understanding of how the results help the company's bottom line—and so that buyers feel comfortable in explaining these financing ideas to suppliers.

In general, it is essential for more procurement departments to understand dynamic financing concepts because the ideas are essential to competitiveness. There is already a substantial gap between the top performers and the rest; those leading companies make longer DPO a core plank of their procurement programs, assigning DPO-linked individual performance goals to procurement managers. Indeed, at these companies, larger DPO numbers become concrete goals across the organization and within specific functions—all reinforced by consistent attention from senior executives. In one recent case, a contract manufacturer set payment terms as a performance goal for its sourcing staff and declared that new contracts with payment terms less than 60 days required the approval of top management.

In fact, some leading organizations set minimum standards for payment terms. If a supply contract has payment terms of less than the standard, the purchase cost savings must exceed the capital cost of the faster payment terms because procurement staff would be tapping the company's balance sheet to pay earlier.

So how should procurement executives respond in future? Three points stand out:

- It is essential to set company-wide goals to optimize DPO and regularly track progress within your company. Procurement managers must be trained to analyze the value of extended payment terms when negotiating pricing with suppliers; their individual performance goals should be geared to meeting DPO objectives.
- It has to be communicated to suppliers that payment terms are vital to the financing of the supply chain. They have to hear that total purchasing costs, including payment terms, will be examined in detail during contract negotiations.
- It is important to evaluate supply chain finance programs that can help suppliers to provide the payment terms required in order to improve DPO cost-efficiently.

SCF creates wins for buyers and suppliers. It increases a buyer's days purchases outstanding and frequently reduces purchase costs and internal procurement expenses. The supplier benefits from being paid faster and by being able to finance accounts receivable at lower cost. As such, SCF is a discipline that every supply chain organization must master.

Cash Flowing? Questions to Ask Now

To begin exploring the potential benefits of SCF and better overall management of procurement, it helps to have good answers to the following questions:

1. What is your DPO, and how does it compare to your competitors' DPO numbers?

2. If some of your competitors' DPOs are higher than yours, are you receiving commensurate discounts on purchases from the suppliers you share with those competitors?

3. What is the gross value of a one-day improvement in your DPO—annual purchases divided by 365? What about a 30-day improvement?

4. What is the gross value of increasing your DPO to that of your best competitor's DPO?

5. What are the implicit capital charges in purchase costs being levied on you by each supplier?

6. What is the annual value if your implicit capital charges in purchase costs were reduced by 25 percent? By 50 percent?

7. How would your organization's overall financial performance improve if it could make the improvements implied in these questions?