

DRIVING **SHAREHOLDER VALUE** WITH YOUR SUPPLY CHAIN

INSIGHTS TO HELP UNLOCK VALUE ACROSS YOUR
SUPPLY CHAIN FOR COMPETITIVE ADVANTAGE

APRIL 2019



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THE FOURTH IN THE **STRATEGY** SERIES OF
UT'S HASLAM COLLEGE OF BUSINESS SUPPLY CHAIN MANAGEMENT WHITE PAPERS

APRIL 2019

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Driving Shareholder Value with Your Supply Chain



Introduction

Why Should You Care About Shareholder Value?

Supply chain

excellence will translate into balance sheet, income statement, and cash flow improvements yielding more economic profit for the firm – and as we will show, economic profit links supply chain excellence directly to shareholder value.

Whether you work for a publicly traded company or a private firm, the value of your company is reflected in either the public share price of your firm's stock or the private valuation of the organization. But why should **you** care about shareholder value?

- You may own some of the company's stock, and/or have stock options;
- Shareholder value, as we'll show in this paper, is a measure over the long run of the financial health and long-range prospects for your firm and therefore your career with that firm;
- Shareholder value is the language of the CEO and the Board of Directors. If you expect to be relevant as a supply chain professional, you have to speak that language and show how your actions drive shareholder value. And, as we'll show later, shareholder value is inextricably linked to supply chain performance.

Chances are, if you have picked up this white paper, you do care about shareholder value and are curious about the topic. Perhaps it is because you feel that your supply chain is not delivering excellence, or that it could deliver more; that it could be an indispensable tool used by the CEO and the board of directors to propel your firm to a new level of performance. At a minimum, your company may be looking for ways to unlock capital as an alternative to equity and debt, and your supply chain can be just the lever to do that.

Outstanding

supply chain performance drives shareholder value because it controls the heartbeat of the firm; that is, the fundamental flow of materials and information from suppliers through the firm to its customers.

Perhaps you know the tremendous potential power of your supply chain but are frustrated with how slowly your company is moving to realize that full potential. The purpose of this white paper is to show how a new level of company performance and shareholder value can be unlocked through supply chain performance. Supply chain excellence will translate into balance sheet, income statement, and cash flow improvements yielding more *economic profit* for the firm – and as we will show, economic profit links supply chain excellence directly to shareholder value.

Later in the paper, we'll address the question: "What is supply chain excellence?" We'll base that on information from literally hundreds of companies, many having come to the Global Supply Chain Institute (GSCI) at University of Tennessee for in-depth supply chain audits or participated in our Supply Chain Forum. In addition, for this white paper, we added recent interviews with prominent investment analysts and executives from leading companies.

Driving Shareholder Value with Your Supply Chain

Given the hype of the last ten years surrounding the supply chain excellence of companies like Apple, Unilever, Amazon, McDonald's, P&G, etc., the investment community has slowly realized that shareholder value runs through supply chain performance. Unfortunately, this concept is not fully internalized in many companies.

Why do the stock analysts care about a firm's supply chain excellence? This isn't all about cost-cutting, though supply chain excellence often dramatically reduces costs over the long term. Outstanding supply chain performance drives shareholder value because it controls the heartbeat of the firm; that is, the fundamental flow of materials and information from suppliers through the firm to its customers. Unfortunately, too many companies have a supply chain crippled by the lack of a strategy, lack of talent, a misapplication of technology, internal and external silos, and a basic lack of discipline in managing the end-to-end supply chain.

The supply chain isn't just trucks, pallets, and warehouses, but being trapped in such a traditional view is one of the primary reasons that many companies are not taking advantage of the shareholder value opportunity presented by supply chain excellence. Certain senior executives that we talked to are skeptical that committing to this new expansive vision of a supply chain is worth it. So, we'll begin by looking at the unequivocal link between supply chain excellence and shareholder value by focusing first on *economic profit*, the lynchpin between the two.

The linkage

begins with supply chain excellence and continues to shareholder value via economic profit.

Creating Shareholder Value with Your Supply Chain by Generating Economic Profit

Economic profit very simply is *profit less the cost of capital needed to generate that profit*. Economic profit is a big deal because it means the company is delivering returns above the cost of the capital invested. Generating economic profit should be the prime goal of all firms. Most CEOs intuitively know that economic profit drives shareholder value. *But many don't clearly comprehend the linkage that begins with supply chain excellence and continues to shareholder value via economic profit.* Outstanding supply chain performance can often deliver a huge upside to economic profit and shareholder value because its full potential has been so under utilized in the past versus other corporate initiatives.

When Economic Profit Increases Over Time, Shareholder Value Increases

When economic profit increases over time shareholder value increases. Stern Stewart has done extensive research on this concept, which they call EVA (economic value added) and define as “net operating profit after tax less the opportunity cost of invested capital.” Their research shows that companies adopting an EVA growth strategy have outperformed the global market by 200% in the past ten years.¹

To understand the impact of economic profit, consider the following example: suppose a newly-formed company earned \$10 million in net income on a capital base of \$100 million. This capital base includes both physical capital like factories and warehouses, as well as working capital – like inventory and receivables. In this simple example, the company has a return on capital of 10%. However, suppose the required return that investors demand for having their money locked up in this new venture adds up to an investment expectation of 13% on the invested capital. That means that, although this firm is enjoying accounting profits, it actually lost 3% for its shareholders versus their expectations. Economic profit charges the company a penalty for tying up investors' cash to support operations. The capital on the balance sheet becomes just as important as the net income on the income statement.

As Peter Drucker said in one of his *Harvard Business Review* articles:² “Unless a business returns a profit that is greater than its cost of capital, it operates at a loss.” Interviews we conducted with stock market analysts from several different investment firms substantiate Drucker's view. They confirm that the price of a firm's stock depends on whether investors see



it earning a good return over its cost of capital over time, e.g. a good economic profit.³ The relationship between supply chain excellence, economic profit, and shareholder value is portrayed in Figure 1 below.

The Linkage between Shareholder Value and Supply Chain Excellence: Cost, Cash, and Growth

World-class supply chains create economic profit when they:

- Support higher *revenue* by providing flawless delivery to customers thereby enabling growth;
- Reduce *cost* by ever more efficient operations;
- Reduce *capital* requirements with lower inventory, lower overall working capital, and streamlined physical networks.

Figure 1

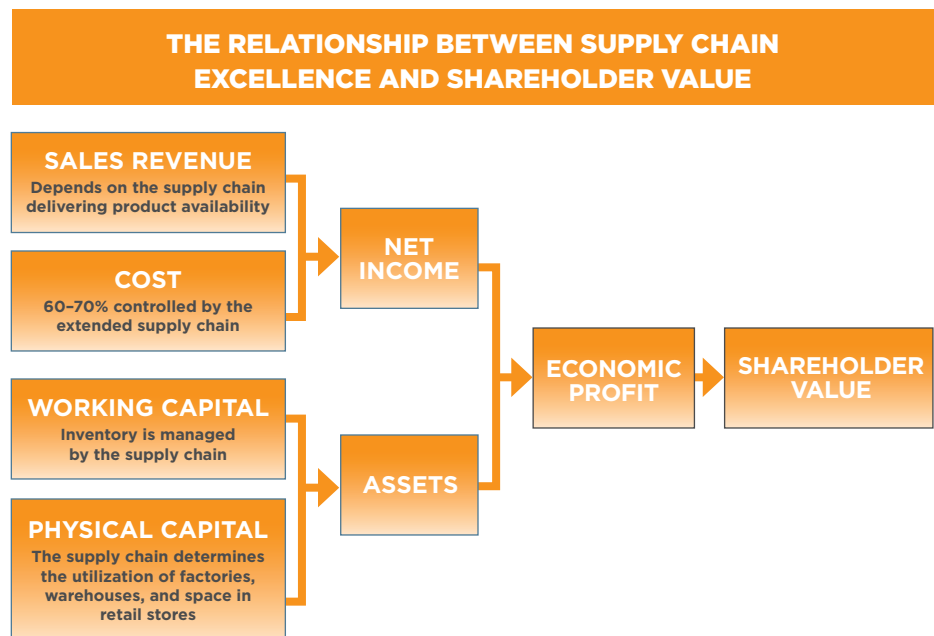
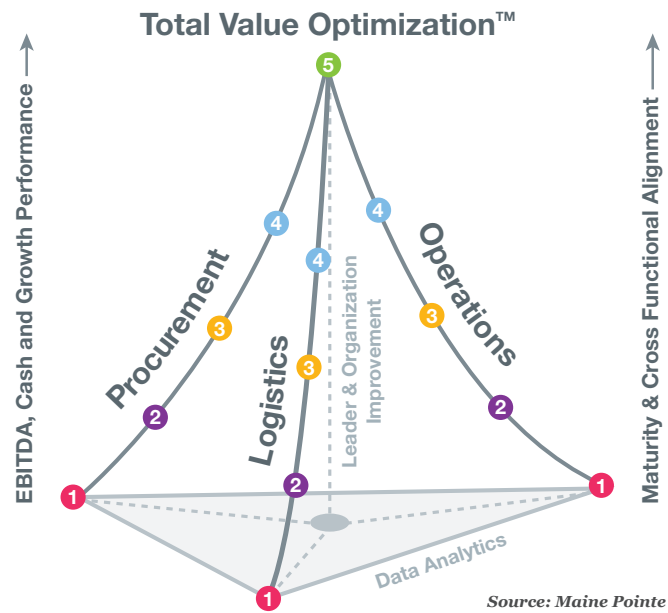


Figure 2

MAINE POINTE TOTAL VALUE OPTIMIZATION PYRAMID™



Cost, Cash, and Growth

The TVO framework (Total Value Optimization), pictured in the graphic in Figure 2, focuses on finding the value drivers for cost, cash, and growth, and then constructing an action plan to achieve them by leveraging the end-to-end supply chain. In a Maine Pointe survey of fifty private equity firm executives⁴ who work with firms to improve financial results, supply chain functions such as logistics, operations, and procurement were surprisingly ranked by many firms as “relatively unimportant” in driving cash and growth. This indicates a significant lack of understanding regarding the critical importance of supply chain in these areas. Many organizations rank low on the maturity curve with respect to supply chains’ impact on financials and haven’t honestly faced the gap in their performance versus world-class (See Steve Bowen’s book for more detail.⁵).

Effective supply chain management drives enterprise cross-functional integration to produce the highest availability with the minimum cost and capital investment. This increases economic profit because it supports higher revenue at lower costs and with lower working capital; in other words, a focus on cost, cash, and growth. An increase in economic profit supports an increase in shareholder value.

Note: Maine Pointe is a supply chain and operations consulting firm founded in 2004 that focuses on driving excellence in procurement, operations, logistics, data analytics, leadership and organization improvement



Table 1 shows a couple of examples of using the supply chain to drive cost and cash and enable growth.

Private Equity Firms Are Getting It

In a CSCMP Supply Chain Quarterly article, Adam Palmer⁶ noted that private equity firms made nearly 50% of their deals in 2017 in the transportation/logistics space, up 40% from 2015. Transportation and logistics private equity firms have emerged that specialize in this area. In general, private equity firms are rapidly becoming aware of how integral transportation and logistics firms are to the domestic and global economy.

Table 1: Examples of Cost, Cash, and Growth Breakthroughs Using the Supply Chain

INDUSTRY	AREA OF BUSINESS	BENEFIT CATEGORY	SPECIFIC BENEFITS	APPROACH
Global manufacturer	Procurement function, plus rail, road and ocean carrier partners.	<ul style="list-style-type: none"> ■ Growth ■ Cash ■ Cost 	<ul style="list-style-type: none"> ■ 80% <i>growth</i> in volumes. ■ 22% margin enhancement (<i>cost</i>). ■ Working capital reduction of \$30M (<i>cash</i>). 	<ul style="list-style-type: none"> ■ Reconfigured distribution network. ■ Built collaborative relationship with transportation providers. ■ Facilitated negotiations between the company and short-list service providers. ■ Major reduction in transit times.
Global crop nutrient provider	Overall product distribution and data analytics.	<ul style="list-style-type: none"> ■ Growth ■ Cost ■ Cash 	<ul style="list-style-type: none"> ■ Improved market share by 28% over four years (<i>growth</i>). ■ Reduced transportation cost by \$48M (<i>cost</i>). ■ Reduced working capital by \$500M (<i>cash</i>). 	<ul style="list-style-type: none"> ■ Reconfigured the distribution network. ■ Evaluated 48 origin-destination options. ■ Reduced time to market by 5 days, better than competition.

Source: Maine Pointe Data Base of Engagements

Managing Risk in the Supply Chain

When a supply chain is severely disrupted, it can have a devastating impact on shareholder value. The research done for the University of Tennessee Global Supply Chain Institute white paper *Managing Risk in the Global Supply Chain*⁷ verified that few companies have

Table 2: Risk Mitigation Using the Supply Chain

INDUSTRY	AREA OF BUSINESS	BENEFIT CATEGORY	SPECIFIC BENEFITS	APPROACH
Global Chemicals Firm	Procurement and maintenance operations	<ul style="list-style-type: none"> ■ Risk reduction ■ Cost reduction ■ Safety improvement 	Better control, with a major risk reduction	<ul style="list-style-type: none"> ■ Consolidated hundreds of vendors into a group of strategic partners ■ Implemented cross-functional governance
Electronics Manufacturer	Sourcing	<ul style="list-style-type: none"> ■ Risk reduction ■ Cost reduction 	25% lower cost of supply	<ul style="list-style-type: none"> ■ Supplier reconfiguration introduced new, higher-tier global suppliers to reduce this risk, protect company's IP and support sustainable growth

Source: Maine Pointe Database of Engagements

Effective supply chain management drives enterprise cross-functional integration to produce the highest availability with the minimum cost and capital investment.

a formal process for managing risk in their global supply chains. Yet there are many examples of a catastrophic supply chain event having a major negative impact on shareholder value. One need only refer to the landmark study on the topic. Kevin Hendricks and Vinod Singhal analyzed the long-run negative impact on shareholder value from supply chain disruptions.⁸ Robust supply chains minimize the probability and impact of risk. A good supply chain strategy has risk management as one of its fundamental building blocks.

Table 2 above includes several examples of using the supply chain to manage risk.

How One Manufacturer Used Its Supply Chain to Add \$600 Million to Cash Flow Creating Higher Economic Profit

There are a number of ways to generate economic profit. The list is well-known and includes new products, new marketing programs, acquisitions, and simply squeezing cost and assets. Most firms have worked these approaches to the extreme for years. Supply chain, however, provides a new opportunity with huge upside potential. Consider one company that had tried everything to increase shareholder value; in desperation the CEO and CFO turned to their supply chain as described in the case study below.



The CEO and CFO of a Fortune 150 manufacturer of consumer durable goods had a problem. They were returning from the latest quarterly results conference call, still smarting from the withering barrage of questions they had received regarding the woeful state of cash flow in the corporation. Even though net income was excellent, their cash flow and economic profit were disappointing to investors. They knew they had to take aggressive action fast, not only to support their stock price, but for the long-term viability of the company.

The CEO and CFO decided to implement a creative and radically different plan to increase cash flow. For several months, they had been debating whether to use their supply chain organization as the catalyst to drive down working capital and improve cash flow. They realized that the time for debate had passed. They threw down a challenge to the supply chain organization: “Find a way to cut the \$1.2 billion in working capital *in half* in the next three years!” Their first step was to demystify working capital and fully embrace its critical importance.

What is Working Capital? (Demystifying Cash)

Everyone seems to understand the income statement. “Revenue minus cost equals profits” is something everyone gets. But the balance sheet is much more mysterious to the average non-financial executive. When we conduct seminars for business executives, very few can *precisely* define concepts like working capital and cash flow. We’ve heard these two terms our entire business career, yet many of us have a fuzzy understanding of them.

Let’s start with *working capital*. Working capital is actually “the capital that doesn’t work.” It just sits there, consuming cash and blocking cash flow. Clearly any business is much healthier with its assets in motion.

From our Accounting 101 course, we might recall that working capital is defined as current assets minus current liabilities. But that definition helps only a little. Most of us for example would be hard pressed to define a “current liability.” We believe a better, more understandable definition of working capital is “inventory *plus* accounts receivable *minus* accounts payable.” That’s the definition used by the company in this case study and, as we’ll see below, it served them well. The definition is portrayed in Figure 3.

This brings us to *cash flow*. As displayed in Figure 4, cash flow is exactly like it sounds, “cash in minus cash out.” Specifically, one good definition is EBITDA *plus* depreciation *minus* capital expenditures *minus* the increase in working capital.

Figure 3

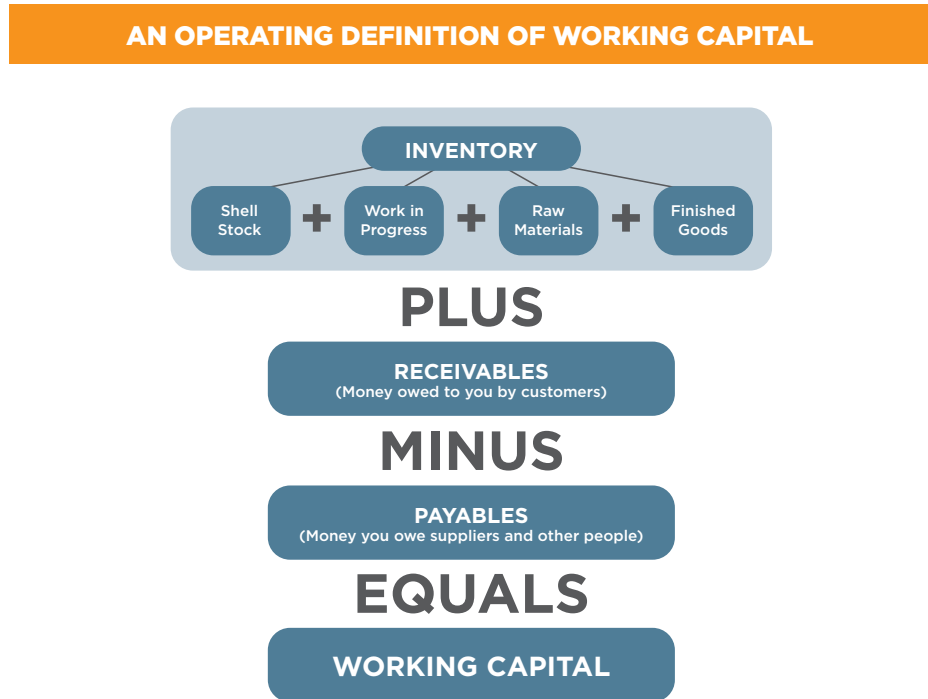
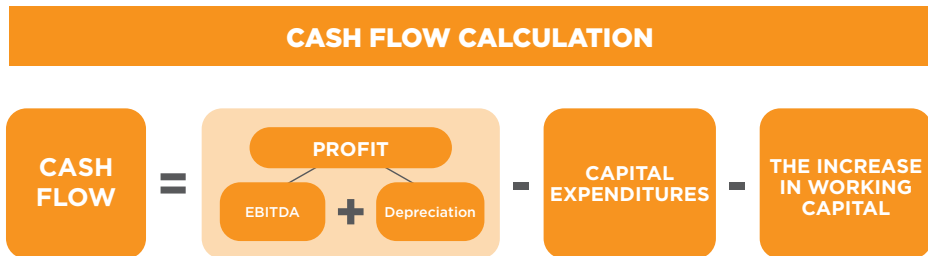


Figure 4



Working capital is capital that doesn't work. It just sits there as a barrier to cash flow.

From this definition, the role of working capital reduction in generating cash flow becomes clear. So that's why the company in this case study wanted to aggressively reduce working capital. The analysts evaluating their stock wanted higher cash flow, and they realized that a lower level of working capital was the pathway to getting there.

With the working capital goal set, the company formed a supply chain working capital team to create a strategy for accomplishing the goal. The working capital team launched projects in each of the working capital buckets listed in Figure 4, starting with their comfort zone - finished goods inventory.



Finished Goods Inventory

The durable goods manufacturer created a detailed plan to rationalize finished inventory to 50% of its current level, a \$250 million reduction, without negatively impacting product availability. They did this with their supply chain organization leading the way on four major initiatives:

1. They cut the number of SKUs in order to manage inventory across fewer finished products;
2. They improved manufacturing flexibility to react faster to demand changes;
3. They addressed slow-moving inventory: 30% of the inventory was simply not selling. They implemented a product segmentation strategy allocating most of their inventory to the faster-moving SKUs. (Prior to this initiative, profitability suffered because customers of fast-moving SKUs were under-served with the same inventory days of supply as slow-moving SKUs.);
4. They managed demand to more closely match the constraints of the supply chain through a disciplined Sales and Operations Planning (S&OP) process.

All four of these initiatives required radical new thinking and cross-functional cooperation that had never existed before. Fortunately, the CEO provided the leadership and support the team needed to succeed.

Raw and Work in Process Inventory (RWIP)

To reduce this component of inventory, four projects were launched with a stretch target to cut RWIP nearly 70%, to less than one third of its starting level, eventually achieving a \$75 million reduction over two years. The components of the plan consisted of:



1. First, reduce component part complexity. Fewer parts in the factories simplify processes and drive down cost and inventory;
2. Collaborate with the 600 major suppliers to shrink component supply lead times, reducing costs and inventory;
3. Reduce the \$40 million in non-production material (MRO) such as maintenance supplies;
4. Continue implementing world-class (Lean) manufacturing techniques.

Accounts Payable

The supply chain working capital team then ventured out of its comfort zone and geared up to address accounts receivables and accounts payables. It took some education for them to fully comprehend the positive impact of payables on working capital. Like good and bad cholesterol, this was *good* working capital. The company had \$300 million in payables and wanted to increase it to \$450 million. They rejected the notion of simply increasing supplier payment terms and punishing their suppliers without a quid pro quo.

Yes, payment terms for suppliers were increased from the 45-day range to the 90-day range. This firm probably had enough clout with many of its suppliers to simply force their suppliers to accept these increased payment terms, but the working capital team realized that in the long run that would be counterproductive.

Rather, the team wanted to find a win/win arrangement. To accomplish that, they worked with each core supplier to find a way to help offset the payment terms increase. This involved a combination of increased business for the core suppliers, longer-term contracts, and open sharing of data, technology, and strategy for the future. In addition, they developed an online information system so suppliers could see when their invoice was scheduled for payment.

The increase in payment terms resulted in a \$150 million increase in accounts payable. The firm was able to hold on to its cash longer, reducing working capital and increasing cash flow.

Accounts Receivable

The toughest area to address was accounts receivable. This \$800 million gorilla was the largest component of working capital and could not be ignored if the



goal were to be met. Good progress in the other areas meant that accounts receivable had to be cut “only” 20% or approximately \$175 million to make the overall working capital reduction goal of a 50% reduction. How could this possibly be done using supply chain tools? One common technique employed by firms to cut receivables is to simply “sell” them to a financial institution, a tactic called “factoring.” Anyone can factor receivables. But the working capital team wasn’t interested in this “smoke and mirrors” approach, and asked: “How can we really reduce receivables using our supply chain?”

Receivables of course depend on payment terms. In a very real sense, negotiating payment terms with customers is the same thing as negotiating pricing, and is normally the responsibility of the sales organization. Unfortunately, it’s rare to find a company whose sales organization understands how to use supply chain concepts in these negotiations. The key was to find a win-win for all parties.

The working capital team decided to use *faster resupply* as its lever.

Working with sales, they promised to reduce lead-times to the customers by 35% in return for a 20-day reduction in payment terms. Faster resupply meant that customers could carry less inventory and respond better to end-consumer demand.

This was a win-win for both parties. The consumer durables company reduced its working capital (accounts receivables) and so did the customer (inventory). Furthermore, their retail customers reduced their out-of-pocket costs of holding and storing the inventory. This strategy allowed the consumer durables firm to reduce their accounts receivables by the required \$175 million.

Case Study Summary

In summary, the team attained its goal and took \$600 million, or 50%, out of working capital, resulting in a dramatic increase in cash flow and economic profit. They achieved this and still improved customer fill rates. Also, less inventory meant less inventory holding cost, and also less need for warehouse capital. To drive this improvement with their supply chain, they used new technology and collaborated externally with their suppliers and customers, as well as internally across the functional silos. The team addressed all aspects of economic profit. They greatly reduced invested working capital, cut cost, increased cash flow, and contributed to revenue growth with the improved availability of product.



Today, a small but growing number of companies report that they leverage their supply chain to drive economic profit and shareholder value.

Shareholder Value and Supply Chain Excellence

Today, a small but growing number of companies report that they leverage their supply chain to drive economic profit and shareholder value. Supply chain organizations of the future must focus on far more than just taking out cost and improving product availability. Instead, they need to become an engine of overall financial improvement for their companies. Smart companies will use innovations in their supply chain to generate the cash to fund innovations in their product lines and growth in their business.

When the credit markets froze in 2008-2009, a few firms realized that they could free up cash internally without having to go to the banks. A major lesson learned in our work with firms is that this focus must be driven from the top of the company. Without strong consistent support by the CEO, CFO, and COO, an initiative like that described in the case study could not have been successful due to the massive alignment of functional silos required.

The fundamental learning from the case was how supply chain can be used as a lever to dramatically lower working capital and improve cash flow. Since these changes positively affect economic profit, investors reward these efforts with higher shareholder value.

Does the CEO Understand the Role of Supply Chain Excellence?

In order for your firm's supply chain to be a critical lever in generating economic profit, you need a documented multi-year strategy to achieve supply chain excellence. After working with hundreds of firms, our surveys show that only 16% have a multi-year, documented strategy for achieving supply chain excellence.⁹ Perhaps this is because the CEO doesn't demand such a strategy.

In the *Harvard Business Review* article, "Are You the Weakest Link in Your Supply Chain?",¹⁰ the authors recognized that the weakest link in the supply chain is often at the very top of the corporation. For that reason, they developed an eight question self-test to prompt reflection in the executive suite. Table 3 opposite provides the eight key questions for CEOs from that *Harvard Business Review* article.



Some

business-to-business (B2B) CEOs may have a blind spot to the concept and may be falling behind progressive competitors.

Are You, the CEO, the Weakest Link in Your Supply Chain?

Opposite is a self-test for the CEO to help them evaluate how well they understand supply chain excellence and its application in their company.

Without a doubt, an increasing number of CEOs “get it.” In fact, it is not uncommon for the CEO to rise to that senior leadership position through the supply chain organization.

Do CEOs Understand the Linkage Between Supply Chain Excellence and Shareholder Value?

Apart from the questionnaire, the people we interviewed felt that it's a mixed bag relative to the CEO's understanding of the linkage between shareholder value and supply chain excellence. More CEOs seem to understand that linkage, if for no other reason than the need to respond to outside analysts who evaluate the company (today, the analysts do “get it!”). There was a sense that business-to-consumer (B2C) retail CEOs are further along the learning curve due to the sea change brought about by the omnichannel wave. Some business-to-business (B2B) CEOs may have a blind spot to the concept and may be falling behind progressive competitors.

We also found that chief financial officers often have even less understanding of the *share price-supply chain linkage*. In fact, our interviews showed that many CFOs see better information systems (IT) as the primary focus for building shareholder value.

What is Supply Chain Excellence?

If supply chain excellence drives shareholder value, it begs the obvious question: What is supply chain excellence? Some say excellence is like good art in that “you’ll know it when you see it.” But, clearly, we need a more objective standard. It’s important that you honestly assess your supply chain against a standard of excellence. The standard of supply chain excellence can be set only when you know how the leading supply chain organizations perform in your industry and understand the world-class benchmarks for supply chain excellence.

To discuss everything involved in supply chain excellence is a daunting task and beyond the scope of this white paper. However, we’ll offer a few thoughts for your consideration below. You’ll see a variety of opinions on this topic in the material below.

Table 3: CEO Self-Test

QUESTION	1-3	4-6	7-10	Your Score
1. Career mentoring: Is supply chain management a highly valued career path in your company?	You do not understand why your supply chain leader must have a supply chain background.	You are working on a plan to enhance supply chain talent in your company at all levels.	Your senior supply chain executive has a very broad scope of responsibility and reports to you as key member of your team.	
2. Metrics: Are your metrics customer-focused, based on best practice benchmarking, and do they drive cross-functional alignment?	You do not know how your customers view you. You don't do formal benchmarking, and metrics are not aligned across functions.	There is some alignment of metrics across functions. You want to know if your customers view your performance the same as you do.	Your metrics are based on best practice benchmarks. You and your customers have common metrics for performance and are working together to improve them.	
3. Strategy: Do you have a documented multi-year supply chain strategy, with appropriate rewards to drive the right behavior?	You are not familiar with competitor's supply chain capabilities. You are not aware of the technology and megatrends impacting the supply chain field.	You have completed enough benchmarking and internal assessment to accurately know how your supply chain compares to best-in-class.	You have a documented multi-year supply chain strategy that you personally support. It is driving significant results in customer service, cost, and cash flow.	
4. Technology: Do you understand the power of new supply chain technology trends and support their adoption?	You have little interest in the new physical and digital technology trends impacting the supply chain field.	You are curious about new technology trends and seek answers to how they could impact your firm.	You are sponsoring a major effort to identify appropriate supply chain-oriented technologies and driving their implementation.	
5. Functional alignment: Do you strive to resolve cross-functional alignment problems in a way that efficiently exceeds customer expectations?	You have no S&OP process. Product complexity is increasing with its impact not measured. Obsolete inventory is increasing.	An S&OP process is in place and is maturing. Product complexity and obsolete inventory are tracked and understood.	You are involved in the S&OP process. You are holding the organization responsible with clear goals to manage product complexity, obsolete inventory, and other cross-functional issues.	
6. Marketing and product integration: Do you demand that supply chain expertise be factored into product design and marketing programs?	Customers are not segmented and are all treated equally. Customer negotiations do not consider supply chain issues.	Supply chain collaboration is taking place with suppliers and customers. Some supply issues are considered in customer negotiations.	External partners and internal functions are aligned in providing outstanding customer service in an inventory and cost-efficient manner.	
7. Short term reaction: Do you ensure that short term thinking doesn't sabotage supply chain opportunities?	Quarter end surges and month end surges are normal.	You understand the negative effects of end-of-period surges and are planning to reduce them.	You have eliminated artificial end-of-period spikes and are seeing the financial benefits.	
8. Risk: Do you understand how severely shareholder value can be impacted by negative supply chain events?	There is no formal process for evaluating supply chain risk.	You have identified the possible risks that could impact your supply chain.	You have identified supply chain risk and have developed and implemented a plan to mitigate the most important risks.	
YOUR SCORE:				



The New Supply Chain Agenda

One Definition of Supply Chain Excellence

In our book, *The New Supply Chain Agenda*,¹¹ we argued that supply chain excellence is the result of excellence in five dimensions:

1. *Having unsurpassed talent.* This is the number one for any organization. Every organization needs a talent management strategy including plans for identifying, recruiting, developing, and retaining top talent;
2. *Using new technology at the best time in the most appropriate manner.* In our white paper *New Supply Chain Technology*,¹² we note that never have there been so many new technological developments that could immensely impact supply chains as today. These take the form of *digital* innovation (e.g. IoT, blockchain, cloud computing, big data, cognitive analytics), and *physical* innovation (e.g. drones, robotics, 3-D printing, driverless vehicles, wearable technology);
3. *Establishing win-win collaboration processes with suppliers and customers.* Most executives insist that they want to collaborate with their suppliers and customers. Unfortunately, when all is said and done, there's far more said than done. Companies that have win-win collaborative relationships have alliances that always win against single-entity competitors;
4. *Managing the functional silo problem* internally requires a disciplined process to match supply with demand. This can take the form of a world-class integrated business process (IBP), or a world-class sales and operations planning (S&OP) process. Providing unsurpassed customer service at minimum cost and capital investment is a horizontal process that depends on the integration of all functions in an organization;
5. *Having a disciplined and proven process to deliver projects on-time, on-budget, and on-benefit.* World-class supply chain strategies clearly are irrelevant unless the projects they spawn are successfully delivered.

A Second Definition of Supply Chain Excellence

In our University of Tennessee white paper, *Game Changing Trends in Supply Chain*,¹³ we proposed ten megatrends that define supply chain excellence:

1. *Move from simply serving your customers to customer relations management.* This involves customized service based on the needs of individual customers requiring multiple supply chain configurations. This does not mean trying to be all things to all customers, but instead requires hard choices of prioritization and segmentation;



2. *Transition from adversarial supplier relationships to collaborative relationships.* This involves freely sharing information and striving for win-win relationships. Collaborative partners measure success with the same metrics and fairly share all collaboration benefits;
3. *Have a transitional agile strategy, not an incremental reactionary approach.* As noted previously, only 16% of firms surveyed have a documented multi-year supply chain strategy;
4. *Move from a functional focus to an integrated process focus.* In our white paper, *Bending the Chain*,¹⁴ we discuss the challenges and opportunities of cross-functional integration. And supply chain functions are not exempt. Purchasing must be aligned with logistics operations and with supply chain planning;
5. *Focus on customer value, not internal metrics.* Exceeding customer expectations with minimum cost and capital investment is always the goal. Metrics should be linked in a logical framework to this overarching goal. This involves first identifying the key outcomes that must be achieved, and the critical behaviors that must be changed, and then identifying the drivers of those outcomes. Best-in-class companies set up a hierarchical framework, or “driver tree,” to visibly show how each metric and sub-metric feeds the overall goal. This avoids the all-too-common problem plaguing many firms: death by a thousand metrics, with its massive laundry list of metrics disconnected from the overarching goal of exceeding customer expectations;
6. *Manage demand strategically vs. simply creating a forecast.* Forecasting is an important skill, but far more important is how the forecast is used in an overall process of matching supply with demand. A world-class integrated business planning (or S&OP) process is required to align all



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excellence is like good art. You know it when you see it. But you still need objective standards.

functions in the firm to serve the customer in an unsurpassed manner with minimum cost and capital investment (See the Global Supply Chain Institute white paper *Best Practices for Demand Supply Integration.*);¹⁵

7. *Enhance professional development for all employees vs. random training exercises.* In our supply chain audits, we rarely find a company with a tailored professional development plan in place for each individual. When it comes to talent management, firms put a lot of emphasis on hiring and retaining top talent, but far too little on developing their talent. Every person has weaknesses that need to be strengthened, and that can only be done with a professional development plan tailored to the needs of each individual. Without that, it can be argued that companies are wasting their most precious resource. (See the Global Supply Chain Institute white paper *Managing Talent in the Global Supply Chain.*);¹⁶
8. *Decide to virtually integrate, not vertically integrate.* One of the fundamentals of business is to stick to what you do well and leave the rest to world-class service providers. Third parties can help you, but only if you follow a well-defined set of best practices. (See the Global Supply Chain Institute white paper *Best Practices for Selecting and Managing a Third-Party Logistics Provider.*¹⁷);
9. *Share information and make it visible across the chain; don't hoard information.* Information hoarding is a common disease borne of misplaced insecurities. Promoting visibility across the supply chain from suppliers to customers invariably carries far more benefits than risks. Understanding how digital tools can help improve information connectivity and visibility is the subject of our white paper: *A SAVVY Guide to the Digital Supply Chain.*¹⁸
10. *Look at activity and value-based evaluations, not managerial accounting.* Traditional accounting allocations can mask good performance as well

as real problems. Initiatives need to be evaluated based on how well they drive the overall objectives of the firm.

A Third Definition of Supply Chain Excellence

Dan Gilmore of *Supply Chain Digest* several years ago proposed an excellent framework for supply chain excellence embodied in his article “The Ten Dimensions of Supply Chain Excellence.”¹⁹ To summarize, those ten dimensions are:

1. *Alignment.* This refers to a close alignment between the overall strategy of the company and the supply chain strategy and execution;
2. *Strategic depth.* A great supply chain must be based on a clear multi-year strategy (As a footnote, our data at the university says that only 16% of firms have a documented, multi-year supply chain strategy. Our book, *Supply Chain Transformation*, lays out a nine-step process for developing a supply chain strategy.);²⁰
3. *Customer satisfaction and supply chain performance.* The best supply chain chains focus on the needs of their end-customers and relentlessly focus on meeting and exceeding those expectations. See the Global Supply Chain Institute white paper on supply chain integration best practices;²¹
4. *Supply chain network design.* Gilmore notes that 80% of total supply chain costs are determined by the design of the physical network. Supply chain excellence is driven in large part by the quality of the network in which it operates;
5. *Macro agility.* This refers to the ability to respond to the changing environment and the changing competitive environment very fast and faster than competition. As Gilmore says, this is not an easy thing to measure, but you know it when you see it;
6. *Micro agility.* This refers to the day-to-day agility of the operation to react to near-term changes in dimensions like demand;
7. *Talent management.* There's little need to expand further on this one. Top talent is a scarce commodity, especially in supply chain management. A strategy to identify, recruit, retain, and develop talent is crucial to the success of any supply chain;
8. *Technology management.* This dimension has taken on even more importance since this article was written. The tsunami of physical (driverless vehicles, drones, robotics, 3-D printing) and digital

We recommend
*that you review this material
and develop your own
objective definition of
supply chain excellence.*



(blockchain, big data, the internet of things, supply chain digitization) innovation makes this area crucial. Supply chain professionals have to decide where to place their bets, and then have a highly disciplined process of implementation (See our white papers *New Supply Chain Technology*²² and *A SAVVY Guide to the Digital Supply Chain.*);

9. *Collaboration intensity.* Much has been written about the power of collaboration with trading partners, suppliers and customers, and more and more powerful success stories emerge every year (See the Global Supply Chain Institute white paper *End-to-End Supply Chain Collaboration.*);²³
10. *Supply chain culture.* Gilmore mentions some examples that could make huge differences such as the approach to risk-taking, the learning culture, etc. All cultures emanate from the top of the company.

A Final Definition of Supply Chain Excellence

Lora Cecere, in an article in CSCMP's *Supply Chain Quarterly*,²⁴ made some insightful comments regarding supply chain excellence. She analyzed the financial statements for approximately 2,000 companies and found that the best performing supply chains were able to drive improvements in three areas *simultaneously*:

- Inventory turns;
- Operating margin;
- And return on invested capital (ROIC).

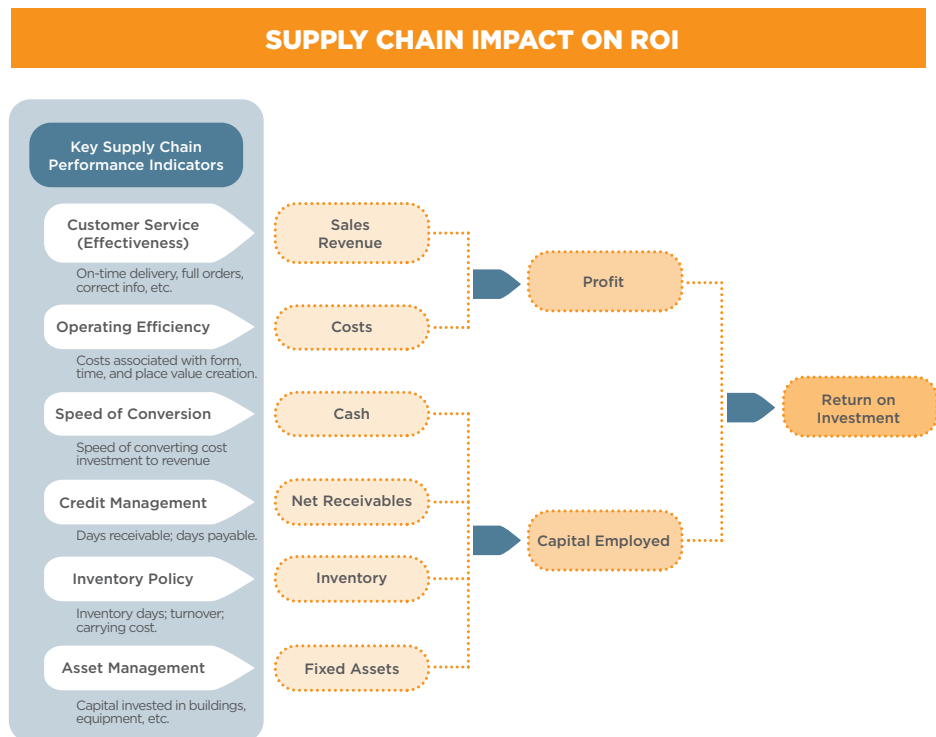
This definition of supply chain excellence is based on seeing improvements in all three areas simultaneously, a feat achieved by only 10% of companies, according to Cecere.

Another definition of supply chain excellence is the well-known Gartner ranking of the best supply chains. This ranking is based on the following criteria:

- 25% peer opinion;
- 25% Gartner opinion;
- 20% return on assets;
- 10% inventory turns;
- 10% corporate responsibility index.

You can also view supply chain excellence through the lens of what it takes to drive an increasing level of return on investment, a ratio very closely related to economic profit. Ted Stank, who holds the Bruce Chair of Excellence in Supply Chain Management here at the University of Tennessee, offers the illustration below (Figure 5) to illustrate how supply chain excellence can drive return on investment which creates economic profit and shareholder value.

Figure 5



From Martin Christopher, Logistics and SCM, 5th ed., 2016, Prentice-Hall



In addition to the senior executive's insights, we polled stock analysts and private equity investors to add an investor perspective.

Supply Chain Excellence

So, there you have it. It's a lot to consume, and hopefully we haven't confused you. We recommend that you review this material and develop your own objective definition of supply chain excellence. If you and your team decide to engage in this exercise, it will generate an outstanding product with a great deal of buy-in. Of course, once you define supply chain excellence, it is critical that you measure it and track your performance over time.

Best Practices to Support Shareholder Value

Now that you have a better understanding of supply chain excellence, and the connection between supply chain excellence and economic profit, we want to give you some insights into what leading companies are doing to optimize their supply chains to support shareholder value.

As part of this research, we interviewed a wide range of senior supply chain executives across numerous industries, from CPG, food, apparel, and consumer durables to original equipment manufacturing, automotive supplies, chemicals, and supply chain consulting. These senior executives manage truly global supply chains. For instance, one of the executives we talked to is responsible for a \$17.5 billion supply chain with global manufacturing and business processes for the entire organization under his direct control.

All the other executives we spoke with had similarly broad areas of responsibility, and all of them brought their extensive experience in supply chain management to our discussion of shareholder value. Additionally, in order to gain external perspectives, we interviewed a number of stock analysts and private equity investors who follow developments in supply chain management. These external analysts gave a unique investor perspective on how the best companies manage their supply chains.

In all of our interviews, we asked our experts to discuss the ways that supply chain professionals can drive shareholder value through managing costs, cash flow, growth, and risk. The best practices below reflect participants' discussions around these four key drivers of shareholder value:

- **Cost** – It's not unusual for a company's supply chain costs to represent at least 60% of every dollar of sale. From purchasing to manufacturing to distribution and warehousing, managing the cost of getting product to customers clearly drives profitability. But this fact has led many companies to view the supply chain as just a cost center – and nothing more. Not surprisingly, companies that adopt this overly simple view of the supply chain typically attempt to support their financial goals through simplistic cost-cutting measures.

The conversations we had with executives and investors, however, reflected a much more strategic approach to supply chain cost. Across the board, these executives emphasized the need for cost optimization, rather than simply cost reduction, in the supply chain. Targeted cost increases in the short run could lead to much larger reductions in the long run. This more strategic approach to managing supply chain costs is at the core of end-to-end supply chain integration initiatives and informs the metrics that drive decision making in leading companies;

- **Cash Flow** – Generating a positive cash flow and managing working capital are fundamental to the success of any business. But many companies don't realize the extent to which decisions in the supply chain influence cash flow. Thinking about working capital as "inventory plus accounts receivable minus accounts payable" is a good first step toward highlighting the role that supply chain management can have on cash flow. This definition of working capital brings to the fore supply chain decisions around payment terms with customers and suppliers, as well as inventory management, all of which drive a company's cash conversion cycle and financing costs.

But managing the cash conversion cycle is just the beginning. Our conversations with executives pointed to numerous other ways that supply chain management intersects with cash flow management. In particular, senior executives and analysts highlighted the critical impact that supply chain management has on capital expenditures and the cost of capital, and how these components feed into a company's cash flow;

- **Growth** – Ask any marketer, and they'll tell you that the key to company growth is consistently exceeding customer expectations while positioning the firm to take advantage of future trends. Ask any supply chain leader,

and they'll tell you that is exactly what they do, day in and day out. Although there is lots of room for improvement, CEOs and boards of directors are getting much better at recognizing the huge potential of supply chain management to drive growth.



Beyond supporting customer performance, superior supply chain management allows companies to be first to market and take advantage of upswings in business cycles. Moreover, strong supply chain capabilities allow companies to realize the synergies that underlie a strategy of growth through acquisition. All of these activities help position a company to beat analyst expectations for returns. And any investor will tell you that beating expectations is a very good thing for shareholder value;

- **Risk** – Supply chain risk goes far beyond concerns about the weather or terrorism. From physical disruptions to key supply routes, to unexpected changes in customer preferences or perceptions, to macro-level political and economic turbulence, to network cybersecurity – supply chain risks represent the major risks that any company will face. Too often, though, supply chain risk management is thought of as a separate discipline that simply protects the core business, rather than an integral part of how a company ensures its long-term viability. But as our discussions revealed, building resilient supply chains helps companies withstand the impact of unforeseen shocks as well as adapt to emergent threats and opportunities. Supply chain risk management is therefore critical for companies seeking to protect their margins, manage stock price volatility, and present an attractive option for investors.

Drawing on our interviews, and on discussions with the hundreds of companies we have interacted with through consulting and educational engagements, the research team developed a set of ten best practices (Table 4) for better aligning supply chain decision making and processes toward maximizing shareholder value. These best practices are concrete and implementable in any company. They can help supply chain leaders raise awareness within their company of supply chain management's impact on shareholder value – and can also serve as guidelines for supply chain leaders looking to better position their supply chains to drive greater shareholder value.

1. Seeing the Impact

As one executive told us: “We can’t improve what we don’t see.” And nowhere is that statement more true than in the supply chain. Even the most basic supply chain represents a complex network of suppliers and customers that

needs to be managed by a cross-functional team so that short- and long-term decisions ensure the right product, in the right quantity and condition, arrives at the right place and time, for the right customer at the right price. Given this complexity, just visualizing the supply chain as a whole – let alone understanding its impact on specific financial metrics – can be a serious challenge. Compounding this challenge is the fact that many supply chain professionals may not feel comfortable with analyzing financial reporting or generating ratios for key financial metrics.

Here is where some basic continuing education can have a huge impact. We spoke to a senior executive who has given numerous presentations on the connection between supply chain management and financial performance to groups inside and outside his company. The presentations last about an hour and are aimed at simply equipping audience members with enough knowledge so that they can go out and start relevant conversations with stakeholders on supply chain management’s connection to financial performance. These presentations have been hugely successful at engaging audiences in the conversation and inspiring them to drive greater financial literacy in their supply chain organizations.

Table 4: Maximize Your Shareholder Value

BEST PRACTICES FOR DRIVING SHAREHOLDER VALUE THROUGH SUPPLY CHAIN MANAGEMENT
1. Seeing the Impact
2. Focusing on the Right Metrics
3. Building Key Relationships
4. Building the Right Team
5. Driving End-to-End Supply Chain Integration
6. Making a Data-Driven Case for Supply Chain Initiatives
7. Getting Your Supply Chain Team in Front of Investors
8. Viewing Supply Chain Risk Management as Business Risk Management
9. Focusing on Maximizing Upsides and Minimizing Downsides of the Business Cycle
10. Thinking Creatively about Supply Chain Opportunities that Come from Better Financial Management



As this executive reported, once people start to see the connections between supply chain management and the overall financial performance of the enterprise, they can immediately see how clearly communicating those connections has the potential to create an entirely new kind of conversation with stakeholders.

Enhancing the financial literacy of your supply chain organization can include attending presentations and breakout sessions at industry conferences, engaging external experts to come into your company and present to your team, or pursuing more formal options through executive education and certification programs. Managers may also consider sitting down with their teams and carrying out a line-by-line assessment of their company's financial statements. Start with the income statement. Line one is revenue. Ask your team: "How do supply chain decisions in our company impact our revenue?" Depending on your industry, the answer can include a range of factors such as lead times, time-to-market for new products, response time to customer requests/orders, on-time delivery, stock outs, fill rates, etc.

Continue down the income statement and think through the supply chain impact on cost of goods sold, operating costs, and sales, general, and administrative costs. Keep the conversation open and record your team's thoughts. Then do the same thing for the balance sheet and statement of cash flow. Going through an exploratory exercise like this can help your team see the connections between supply chain decisions and company financials and may also raise fruitful ideas about how decision making can be improved to better support financial performance. The final step in this process would be to link supply chain decisions to key financial metrics such as economic value added, as discussed above.

Linking the many decisions in supply chain to company financials – and then managing decision-making toward key financial metrics – can be a powerful way for supply chain leaders to enhancing the profile of their supply chain organization and create conversations with internal and external stakeholders that move well beyond cost reduction. They and the entire organization can truly *see the impact on the overall financial health of the firm.*

2. Focusing on the Right Metrics

The supply chain world is awash in metrics. Supplier spend ratios, on-time purchases, freight bill accuracy, supplier defect rate, yield, scrap rate, inventory carrying costs, inventory accuracy, inventory velocity, days of supply, warehouse productivity, order fill rate, order cycle time, shipping accuracy, and customer

A free cash

flow/net income ratio

greater than 1.0 gives

investors a strong indication

that a company is operating

efficiently while maintaining

adequate short-term

liquidity.

satisfaction represent just a few of the myriad metrics used to measure the huge variety of supply chain activities. But as important as many of these metrics may be in managing day-to-day operations in a particular area of the supply chain, most of them fail to speak to the larger impact supply chain management has on company financial performance. That failure of traditional supply chain metrics to connect with company financial performance can have serious negative implications for managers.

By failing to connect supply chain metrics to financial metrics, managers run the risk of not seeing the connection at all. As argued above, even the most basic supply chain is going to be complex and dynamic. Supply chain leaders that want to have a significant impact in their organizations need to step back from all that complexity and take a holistic, strategic view of where their supply chain is currently – and where it needs to be – to support the business. Having financial metrics as part of a portfolio of supply chain performance measures allows managers to keep an eye on the bigger picture. Financial metrics may also help managers visualize the implications of supply chain decisions that might not be obvious at first. The role that financial acumen plays in a supply chain leader's ability to manage currency risks is just one example that came up in our conversations.

Financial metrics can also help managers identify opportunities to create a step-change in the way the business is run, over and above incremental improvements. As one executive argued, investments in the supply chain today build the capabilities needed to respond to market disruptions and technological changes tomorrow. Any successful case for investing in supply chain capabilities has to be grounded in clear and compelling links to financial performance. Supply chain leaders that lack the ability to translate supply chain decisions into financial metrics in this way limit their ability to impact that conversation at the executive and board levels.

So, what financial metrics should supply chain leaders and executives focus on? It depends on the industry, of course, but here are six suggestions from the experts. Formulas and explanations of each of these metrics can be found online at reputable sites like Investopedia.com:

- Economic Value Added;
- Economic Profit;
- Return on Invested Capital;
- Return on Invested Capital / Weighted Average Cost of Capital;
- Free Cash Flow / Capital Invested;
- Free Cash Flow / Net Income.

Once you start

the conversation, most executives find that the CFO, especially, becomes one of supply chain's strongest allies.

Let's focus briefly on the final metric: free cash flow/net income ratio. This ratio really comes down to working capital management. An analyst we talked to told us that the ratio has become a near obsession for investors, especially when they look at manufacturing companies. A free cash flow/net income ratio greater than 1.0 gives investors a strong indication that a company is operating efficiently while maintaining adequate short-term liquidity. For a manufacturing company to achieve that ratio consistently it must excel in every aspect of inventory management, tailoring inventory levels exactly to sales not just once, but each and every cycle. If that's not a supply chain metric, then nothing is! Having a ratio like free cash flow/net income as a performance measure drives both financial and supply chain excellence as well having a direct linkage to shareholder value.

3. Building Key Relationships

Thirty years ago, supply chain managers reported up through executives in different areas of the firm and were tasked largely with controlling costs and putting out fires. Today, companies are realizing that the supply chain has a substantial ability to impact all parts of the business. Supply chain leaders need to step up to this new role. As one highly experienced senior executive told us, a supply chain manager needs to show up to work first as a total business leader, second as a provider of solutions for growth, and third as an outstanding leader in supply chain – in that order!

Showing up as a total business leader first and foremost allows supply chain leaders to have meaningful conversations with CFOs and other executives in their organizations about the company's total performance. These conversations are the building blocks for strong relationships at the top. As one chief supply chain officer told us, his ability to articulate a vision for the company allowed him to develop close ties with his CFO. Now there's not a week that goes by when the two don't sit down to discuss ways to support each other – from the chief supply chain officer adjusting operations to help the CFO with cash flow challenges to the CFO accelerating a particular supply chain project with additional money that has become available. Building strong relationships at the top are critical to greater integration between supply chain and finance.

The good news is, starting a conversation with other senior executives can be pretty easy. Frame your discussion in terms of economic value added or other key financial metrics and you'll get their attention. Moreover, once you start the conversation, most executives find that the CFO, especially, becomes one of supply chain's strongest allies. That's because supply chain managers that understand the financial goals of the company are better positioned to offer creative options for supporting those goals. For instance, faced with what he saw



Several of the executives we spoke with had dedicated finance personnel within the supply chain team.

as an overly simple cost reduction plan, one of the executives we talked to went to his CFO and drilled down to the specific financial goals the plan was aimed at supporting. Once he understood the financial goals, this executive was able to articulate more strategic alternatives that avoided the potential constraints that would have come with the initial heavy-handed cost cutting approach.

The bad news is that many – if not most – supply chain leaders do not feel comfortable having those conversations. Particularly if a manager is one or more steps removed from the executive level, they may not have had experience or education in financial management. Executives identified this lack of exposure to financial management, and an associated uneasiness with translating between supply chain and financial metrics, as one of the biggest barriers to stronger relationships with senior-level counterparts. Without an understanding of the financials, supply chain professionals oftentimes end up viewing their counterparts as adversaries only interested in driving down costs to support their own goals. The relationship ends before it even begins.

One way to combat a lack of financial literacy in your supply chain organization is through building relationships with industry organizations, internal or external experts, or educational institutions. As noted earlier, all that's needed is enough knowledge to start relevant conversations on supply chain management's connection to financial performance. Once supply chain managers take the initial step of starting the conversation, the likelihood is that they will find a receptive audience.

4. Building the Right Team

To drive change, a business leader needs the right team and the right processes. Driving greater integration between supply chain management and financial performance is no different. Although there is no single way of organizing a team that will fit all companies, the executives we spoke with had some clear ideas about what has worked for them. These ideas focused on the ways in which




Although the supply chain has the ability to move the needle on almost any financial metric, it will fail to deliver without end-to-end supply chain integration.

supply chain leaders can manage people and processes to better integrate finance talent into the supply chain.

First, supply chain leaders need to bring the right people into their team. This often means having finance personnel reporting at least on a dotted line to supply chain leaders. Several of the executives we spoke with had dedicated finance personnel within the supply chain team, some had financial personnel with direct lines to executives in both the supply chain and finance areas, and some even had their own finance teams. One executive described a purchasing transformation initiative with the potential to realize savings of upwards of \$500 million. According to this executive, the finance personnel on his team were as involved in the project – from analyzing risks and rewards to thinking through contract terms – as the lawyers and purchasing team members. Having dedicated financial personnel with this level of involvement in supply chain initiatives vastly improved the team’s ability to make sound decisions that set the stage for future growth and performance.

Second, supply chain leaders need to be thoughtful in how they employ the finance talent on their team. If finance personnel are treated like bean counters, whose only job is tallying the numbers after a decision has been made, then they clearly will not be able to contribute to enhancing performance. Rather, supply chain leaders need to put a consistent process in place that ensures finance personnel have meaningful input on decisions. Moreover, finance personnel need to be tapped to come up with creative solutions to meeting overall numbers, self-funding projects, and finding other ways to meet requirements under budget and before schedule. Ultimately, the role of finance personnel should be to make sure that every decision made in supply chain management is based on sound financial reasoning and analysis.

An automotive parts executive provided a mundane, but telling, example of how finance personnel can facilitate supply chain decision making. The question



Supply chain
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to understand how all
of the pieces fit together
rather than divided across
functional domains.*

of service levels arises frequently in his company. Historically, the decision on service levels for a retail location had been driven by past relationships and a desire by the sales team to leverage high service levels to drive future sales. With the addition of finance personnel to his team, the decision-making process on service levels has completely changed. Now, the economic value added of delivery frequency and inventory levels drives the discussion. Finance brings the data, does the analysis, and the decision is based on the numbers. It's as simple as that.

Building finance talent into your team and putting a process in place to ensure they have a meaningful input on supply chain decisions may take time, but the discussions we have had with executives clearly indicate it is worth the investment.

5. Driving End-to-End Supply Chain Integration

Every supply chain executive that we spoke with said that, although the supply chain has the ability to move the needle on almost any financial metric, it will fail to deliver without end-to-end supply chain integration. Strategic cost savings, superior inventory and working capital management, enhanced responsiveness to growth opportunities, and greater resilience against risk – all of these require end-to-end integration. As one executive put it, the number one capability of any supply chain professional must be managing system dynamics.

In other words, managers need to be able to understand how all the pieces fit together as a whole, rather than seeing activities as divided across functional domains. As this executive explained, when there is a problem in the supply chain, managers too often look for local solutions at the point of the problem. But local solutions don't address the source of the problem at the level of the supply chain as a whole, so more often than not they serve to simply mask the underlying issue or shift it to another area. The end result is that the supply chain stays in a reactive firefighting mode and is never able to position itself as a foundation for business goals.

An entire white paper, or even an entire book, could be written about supply chain integration – and we've done both!²⁵ The first step in a journey toward end-to-end supply chain integration is understanding what is meant by the term. Supply chain integration is the process of connecting decisions and actions across an end-to-end supply chain (supplier's supplier to consumption) to drive total value for all stakeholders. Supply chain integration requires aligning



strategies, effectively managing operations, and maintaining reciprocal flows of information among stakeholders to consistently optimize results for the entire supply chain. This means having a united and cohesive supply chain team within your company's four walls that includes not only the typical supply chain functions but also other representation from other major functional areas such as IT, finance, and marketing.

It also means working with supply chain partners to achieve well-defined goals that are based on a common understanding of the value that is being created for stakeholders and consumers. In other words, integration is a disciplined approach to total value in the end-to-end supply chain. Supply chain integration is grounded in a clear-eyed vision of the supply chain value requirements. It drives achievement of that value, while also providing feedback on how best to maintain alignment among stakeholders for future success. Supply chain integration is therefore laser-focused on achieving tangible results for stakeholders. When integration efforts are guided by the right set of financial metrics, the results can be truly game changing.

A CPG retail executive gave us his personal experience on just this point. Focusing on an economic profit metric, this executive mapped the warehousing, distribution, and logistics impact on the company's net income, working capital, and physical asset structure. From there, he was able to show that, by increasing on-shelf ability by 1.50 percentage points, the company could increase sales revenue by \$120 million.

But how could the supply chain deliver on those numbers? The process started with close collaboration with suppliers, a much deeper internal integration across the company through an enhanced S&OP process, and far more data from retail stores. By connecting decisions and actions across the end-to-end supply chain, the company was able to reduce forecast error by 30%, improve inventory



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managers must support their company's financial objectives by developing data-driven, financial analysis for their initiatives.

accuracy in key categories from 25% to 85%, and focus planning and execution on the 20% of SKUs that drove 80% of sales. The takeaway here is that integrating with partners to achieve well-defined goals based on a common understanding of key financial metrics is a powerful way to run your supply chain.

6. Making a Data-Driven Case for Supply Chain Initiatives

Supply chain organizations struggle to collect and make sense of an overwhelming amount of data scattered across different processes, sources, and siloed systems. Under these conditions, it is exceedingly difficult to manage and monitor the complete supply chain – resulting in unnecessary risk exposure, disruptions, and delays, as well as increased costs. To help supply chain leaders navigate this increasingly data-saturated supply chain environment, the University of Tennessee Global Supply Chain Institute published *A SAVVY Guide to the Digital Supply Chain*.²⁶ That white paper introduced the SAVVY framework, which focuses attention on sources of data, analytical capabilities, variety of applications across the supply chain, value provided to the organization, and your changing role. But it's not just process data that managers need to collect and analyze to make sound supply chain decisions – it's also financial data.

Managers seeking to better align their supply chains to support their company's financial performance need to develop a data-driven case for their initiatives. One way to start thinking about how to build that case is by viewing financial data through the lens of the SAVVY framework:

- *Sources of data.* There are numerous sources of data that can be tapped, both internally and externally, to acquire financial data. Some of the easiest sources include company financials. Finance personnel may also have access to industry databases. As with any data collection effort, the key is to collect data that are reliable and relevant to the decision you want to support;
- *Analytical capabilities.* Here's where your finance personnel are critical. Analytics is as much of an art as it is a science, especially when you are trying to think through the implications of various supply chain decisions on specific financial metrics. Financial personnel can help you make sure that your analysis is founded on sound economic reasoning. At the very least, output from this analysis needs to support predictions around future scenarios and highlight potential solutions to future problems and opportunities;

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leaders need to articulate a clear and compelling case that supports the company's strategic priorities.

- *Variety of applications across the supply chain.* There are very few applications on the market today that directly support the kind of supply-chain-to-financial-metrics analysis that we have been discussing in this white paper. Still, many companies do have applications that collect a wide range of supply chain process data, such as forecast error, lead times, response times, inventory accuracy, and supplier and customer transaction accuracy. Managers need to think creatively about the ways in which these existing applications can be leveraged to map supply chain process metrics onto financial outcomes;
- *Value provided to the organization.* Putting in place the analytics capabilities needed to collect and present financial metrics for supply chain decision making requires resources. Supply chain managers need to make the case for those resources with conversations at the senior levels of their organization that demonstrate the potential returns. As discussed, there are numerous ways that supply chain excellence can drive financial performance and shareholder value. Supply chain leaders need to articulate these in a clear and compelling case that speaks directly to their company's strategic priorities. Focusing on cost, cash flow, growth, and risk is one way to approach this conversation that we have found to be fruitful;
- *Your changing role.* It bears repeating: supply chain managers' roles are changing. Supply chain managers need to step up to this new role by showing up to work as total business leaders. This requires having the financial acumen to clearly articulate the shareholder value implications of decisions in the supply chain. If you, or your team, are not confident in making the connection between supply chain and shareholder value, now is the time to engage with external or internal partners who can enhance knowledge, skills, and abilities in this critical area.

Ultimately, supply chain leaders need to track, analyze, and utilize financial metrics the same way they currently track, analyze, and utilize familiar supply chain process metrics. Doing so can turn financial metrics from static numbers that are calculated once a quarter (if at all) into dynamic markers of everyday success. Very few companies we've talked to are at this level, but it needs to be the long-term goal.

7. Getting Your Supply Chain Team in Front of Investors

The executives and analysts we spoke with all agreed that the investor community is highly focused on understanding the implications of supply

Investors'
*understanding of the
company's supply chain
often rivals that of the
executives running the
business.*

chain decisions for shareholder value. Some even suggested that investors sometimes have a better understanding of a company's supply chain than the executives running the business! Not surprisingly, companies are asking supply chain managers to be on investor calls, and even take the lead. That's a good thing! It raises the supply chain's profile in the company and provides a critical opportunity to drive home supply chain's role in the overall business.

An executive from a global manufacturer of engines and similar technologies described a recent call with investors in which his team got 30% of the airtime. Why? Because analysts were interested in learning more about a specific supply chain initiative that was underway. But here's the real value that this supply chain executive was able to bring to the table: after letting his team describe the initiative, the executive went on to make a compelling argument for why the initiative positioned his company as a strong investment for growth and gain, rather than just dividends. Being able to make that link represents the next level of supply chain leadership.

The portfolio managers, stock analysts, equity investors, and senior executives that we talked to had three main suggestions for what supply chain leaders need to focus on when talking with investors: metrics, margins, and timing. We've already talked a bit about metrics in this paper. One additional suggestion on this point is that, when talking to investors, supply chain leaders should address metrics related to fundamentals (cost, cash flow, growth) as well as metrics related to investment and the company's price-to-earnings multiple. Being able to talk about both kinds of metrics will allow managers to give relevant answers to investor questions.

Supply chain leaders also need to address margins. Most supply chain leaders have a good idea of their margin contribution, but investors are also looking for companies to prove that they are protecting margins through structural changes. Investors reward initiatives that produce a step-change in how the business creates value for its customers. Such structural changes improve margins in ways that are not tied to volume sales, enhancing the quality of a company's earnings. Companies that can show that margins are moving to a higher level, not just flowing with the business cycle, get a higher earnings multiple – and get the love from investors.

Finally, supply chain leaders need to talk about timing to investors. Oftentimes, investors have good sense of the dollar value of a supply chain initiative. But in order to value the investment opportunity, analysts need to put a time value on the cost and growth initiatives. This means that investors are highly focused

on understanding not just what the supply chain is doing, but also how quickly the supply chain is going to deliver on a change. In fact, the supply chain executives we talked to told us that they get more questions from investors on the timing of initiatives than the dollar value.



Beyond talking about metrics, margins, and timing, supply chain leaders also need to have a good sense of their investor audience. For instance, with a company that is acquisition-driven, investors typically have a deep understanding of expected acquisition synergies and have baked these into their projections. Here the role of the supply chain leader is to communicate to investors that they are meeting and exceeding those expectations. This may be a somewhat different conversation than the one a CPG or retail company may have with its investors. In that case, investors may be looking for information on customer service or store traffic. Even among the investors for a single company, there is likely a diversity of interests. Supply chain leaders need to understand this diversity and speak to how their supply chain drives value for the specific investor audience they are engaged with.

8. Viewing Supply Chain Risk Management as Business Risk Management

Companies wanting to defend margins often seek to take costs out of the system through vertical disintegration or outsourcing. Outsourcing components of the supply chain can also provide companies with the flexibility to adjust to changing market demand. But to successfully pursue a highly-outsourced model, a company needs an extremely reliable supply chain. That's where risk enters the picture.

The scope and reach of the supply chain cries out for a formal, documented process to manage risk. But without a crisis to motivate action, risk planning often falls to the bottom of the priority list. Supply chain executives find themselves at the center of the daily storm, striving to balance demanding operational objectives while satisfying customers, cutting costs, and helping grow revenue. They must deliver results today while working on capabilities that will make their companies competitive in the future. They operate in the same maelstrom of competing priorities and limited time as their executive peers - but their scope of activities is broader, and they have less direct control over all the moving parts. In this environment, risk management receives a much lower priority than it should.



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and reach of the supply chain cries out for a formal, documented process to manage risk.

In fact, supply chain risk is business risk. Because supply chain plays such a critical role in cost performance, cash performance, and service performance, disruptions in the supply chain can affect every aspect of the business. Two examples of how supply chain risk has impacted companies stand out from our discussions. The first revolves around the aerospace and defense industry. Companies like Boeing, Lockheed Martin, and BAE operate in an industry with virtually unlimited demand. But limitations in their supply chains constrain these companies from capturing this demand.

Even more significantly, supply chain issues frequently keep these companies from bringing projects in on time and on budget. Such failures can be highly public and lead to lost sales. For instance, after a key supplier of blades stumbled, Boeing was forced to delay production of their new turbofan engines. Pressure mounted on the company, with Boeing having to pay penalties to angry customers who had planned route schedules based on delivery promises that went unmet. Boeing lost sales to competitors, putting future growth into jeopardy. Not surprisingly, all this turbulence in the supply chain was reflected in the stock price.

Another example comes from a major global durable goods manufacturer. When companies don't have visibility into their supply chain, the financial risk associated with inventory can suddenly hit them hard. That's exactly what happened to this company. They failed to understand how much inventory they were carrying, not just on the books but in the entire system. As a result, between 2012 and 2016 this firm had to obsolete over \$6.5 billion in excess inventory in the channel. Company revenues declined 43% in that period, with the inventory burn off contributing ten points. Margins collapsed and the stocks traded at fire sale prices. The company's CEO recognized that a lack of



coordination in the supply chain had created a bullwhip effect, which in turn led to a painful adjustment.

The executives we spoke with were clear that supply chain risk needs to be broadly understood and regularly assessed. One executive even has a standing enterprise risk management discussion with his board. Yet this level of risk management is by far the exception rather than the rule. As mentioned above, managers most often view supply chain risk management as a separate discipline that simply protects the core business, rather than an integral part of how a company ensures its long-term viability. But as the two examples above demonstrate, that can be a costly way of managing a company.

9. Focusing on Maximizing Upsides and Minimizing Downsides of the Business Cycle

When a company overinvests and is caught in a downturn – or underinvests and can't flex up to meet rising demand – its stock is sure to suffer. In fact, the investors we spoke with saw mistakes in timing the business cycle as one of the biggest risks that companies face, as it can create multiple, cascading effects. Overinvesting on the upside can create cash flow problems, which in turn can compel companies to cut dividends, deepening investor pessimism about a stock and driving down share price. Alternatively, severe cost-cutting measures on the downside might prop up share prices in the short term, but prices quickly sag when analysts realize the company has not made the necessary investments to realize future sales. Regardless of which side of the cycle a company is on, investors saw superior supply chain management as the most significant tool companies had for managing that risk.

Analysts pointed to numerous instances where decisions in the supply chain were rewarded or punished based on their implications for managing the



business cycle. For example, a leading diversified manufacturer of specialized industrial equipment and consumables undertook an initiative to improve supplier quality while at the same time redesigning products so as to use strategic suppliers across multiple lines. Better designs and closer supplier collaboration meant less complexity and greater flexibility. Investors took notice and stock prices rose.

Other companies have had to learn their lesson the hard way. An analyst told us the story of a manufacturer which had been chasing an upward cycle by booking double orders from key customers on the bet that sales would continue to increase. When the cycle turned, those same customers began to cancel their order positions. The manufacturer's revenues collapsed and investors punished the stock. Learning from their mistakes, the manufacturer worked hard to clean up their order books. As a result, during the next downturn, investors rewarded the company for having far more stable orders. More generally, investors warned that companies can easily get wrapped up into chasing a trend instead of making sound supply chain decisions based on end-to-end integration that aligns the entire supply chain toward actual demand.

Managing lead times is another way companies create the flexibility needed to manage business cycles. A company we interviewed reduced lead times for customer orders to a third of what they had been previously. Their strategy was to stand up local businesses near their customers to serve as distributors. They paid those distributors a decent margin and then were able to work very closely with them to service customer needs. This company's ability to promise much faster service meant they won business from their competitors. Their ability to actually deliver much faster service earned them the loyalty of their customers. Strong customer loyalty keeps their sales stable during cyclical downturns and investors reward the company accordingly.

Wall Street continues to push companies in a relentless drive to improve profits, forcing companies toward ever-greater efficiency. And, for the most part, companies have responded. First, they outsourced; then they consolidated their footprints; next they took people out of the system. All of these moves allowed companies to reduce costs that were directly under their control. But at the same time, both companies and investors have seen how an over-emphasis on efficiency gains has hampered firms from meeting demand on the upside of a business cycle.

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chains. To deliver on this new expectation, companies must create truly integrated supply chains that remain lean during downturns but are ready to ramp up when sales opportunities present themselves. Making the investments needed to integrate the supply chain will build investors' confidence that the company will grow in the long term.

10. Thinking Creatively about Supply Chain Opportunities that Come from Better Financial Management

Much of what we've talked about in this paper has focused on the ways in which supply chain management can support the financial performance of a company. And that's as it should be. As we heard from the executives and investors, supply chain management affects the cost, cash flow, growth, and risks of a business – all of which ultimately roll up into shareholder value. But as important as it is to recognize the impact of supply chain management on shareholder value, we wanted to end with some thoughts on how managing to financial metrics can improve the supply chain.

Although there are many examples to choose from, we want to concentrate here on some of the concrete benefits that supply chain leaders have achieved through a greater focus on cash flow management. In particular, we want to close with two examples of how companies used a deep understanding of their cash-to-cash cycle to drive innovation and improve relationships in their supply chains.

The first example comes from a global equipment manufacturer. This company aligns the supply chain for every new customer based on a thorough breakdown of cash-to-cash metrics. Aligning customer supply chains on these metrics allows the company to drive important conversations about payment terms with customers and suppliers up front. The company can offer critical customers terms that help gain the order and maintain the right levels of inventory, while also ensuring that the supply chain is configured to meet the cash flow needs across key partners. And even when the company cannot offer the terms a supplier or customer requests, the conversation remains constructive because the firm is able to provide substantial visibility into how it makes those decisions.

A second example comes from a global manufacturer of health and beauty products. After instituting a new customer payment system, the company was able to substantially reduce its receivables. For most companies, it



would have been enough to call the new payment system a win and pocket the difference in the cash-to-cash cycle. But instead, the company decided to use the increased flexibility in its cash flow to invest in its supply chain. Key suppliers were identified through a global supply base rationalization process. Those key suppliers were then moved from payment in 30 to 60 days to a guarantee of payment in two days if certain performance metrics were met. These highly favorable terms immediately solidified strong, strategic partnerships with top suppliers, driving innovation and cost reductions.

Managing to financial metrics also allows supply chain leaders to think through the cost to serve customers. Although companies know that cost-to-serve should drive supply chain decision making, many still don't have a reliable sense of this metric. Financial analysis helps managers work through different cost elements to come to a sound understanding of which are the truly profitable customers. Financial analysis further enables managers to think through the impact of various options – such as consolidating purchasing and logistics, inventory reductions, or changing the production portfolio – to enhance customer profitability.

One senior executive we talked to, however, cautioned us to beware of averages! He recounted an experience from early in his career, when he was a supply chain consultant. He had been tapped to present to the leadership team of a major food distributor. Using information from the company's public reports, he found that average inventory turns for the company appeared much lower than industry peers. Thinking he had a winning pitch for his services, he presented his findings to the senior leadership. He didn't get the response he was expecting. Executives in the meeting pointed out that, when average inventory turns were broken down by product line, the



company was actually performing much better than their competition in most categories. Although this supply chain executive ended up having a long and successful career, the lesson to “beware of averages” has stuck with him.

Overall, we found that, when supply chain leaders use key financial metrics to drive decision-making, they have a much clearer vision of the value they want to create and are better able to drive the end-to-end integration needed to achieve their goals.

So, there you have it: Ten best practices from an impressive group of industry experts and investment analysts. We offer the self-assessment opposite (Table 5) to assist you in evaluating how you are doing on these ten best practices.

Table 5: Best Practice Self-Assessment: Are You Driving Shareholder Value with Your Supply Chain?

BEST PRACTICE	LOW: 1-3	MEDIUM: 4-7	HIGH: 8-10	Your Score
1. Seeing the impact	You struggle to articulate the impact of supply chain performance on the overall financial health of the firm.	You understand the impact of supply chain performance on shareholder value, but other people in your department and the company do not see the linkage.	You and your organization clearly see the impact between supply chain performance and financial impact and can clearly articulate it.	
2. Focusing on the right metrics	Your work to a laundry list of disparate supply chain metrics that are seemingly disconnected from the overall financial health of the firm.	Your metrics have been rationalized and have a logical hierarchical structure but are not clearly linked to the overall business.	Your supply chain metrics are clearly connected to the firm's key financial metrics, and your organization understands the linkage.	
3. Building key relationships	A collaborative linkage between the finance organization and supply chain does not exist.	The finance organization provides good analytical support for supply chain on a project basis.	You have a strong partnership with the CFO and the finance department in your company and regularly have collaborative discussions.	
4. Building the right team	The finance and supply chain departments operate as totally separate functional silos.	Finance regularly participates to assist supply chain project teams.	You have outstanding finance support within your organization. Whether solid or dotted line, finance personnel are true members of your team.	
5. Driving end-to-end supply chain integration	There is no coordinated effort to build collaborative partnerships with your suppliers and customers.	You have established collaborative relationships with key suppliers and customers but have yet to see a significant impact on the bottom line.	You have win-win collaboration efforts in place with your key suppliers and customers that are producing bottom line results.	
6. Making a data-driven case for supply chain initiatives	You still need to acquire, develop and integrate analytical resources into your team.	You are comfortable with the analytical capabilities in supply chain, but feel you are falling short with full cross-functional buy-in.	All of your supply chain initiatives are grounded in analysis of hard data, including financials, and have wide-spread organization buy-in.	
7. Getting your supply chain team in front of investors	You and your team have never had any contact with investment analysts.	You have been sporadically involved in rare instances with investment analysts.	You and key members of your team regularly participate in meetings with investment analysts.	
8. Viewing supply chain risk management as business risk management	You have no formal documented risk management process.	You have begun to identify risks to the supply chain in general and also do a risk assessment at the beginning of every major supply chain project.	You have a formal documented and implemented process to identify, prioritize, and mitigate supply chain risks.	
10. Thinking creatively about supply chain opportunities that come from better financial management	You have not considered how supply chain initiatives impact your firm's shareholder value.	You are making good progress in tying supply chain initiatives to outcomes that are meaningful to the CEO, the Board, and to shareholders.	You use key company-wide financial measures to manage supply chain initiatives, uncover innovative supply chain solutions, and drive close relationships with strategic partners.	
9. Focusing on maximizing the upside and minimizing the downside of business cycles	Your supply chain is regularly buffeted by business cycle swings, and your mode of operation is reactionary.	You are putting in place a robust plan to manage the supply chain during business cycle swings.	You deploy the supply chain as a key tool for managing all phases of the business cycle, including having a well-tested plan for managing customer service, costs, and working capital during ups and downs in the cycle.	
YOUR SCORE:				

Score: 0-35: You are not following best practices and will fail to gain strategic relevance in your firm. Develop an action plan for at least 3-5 of the best practices for this year, and then build on that.
Score: 36-75: You are making progress, but still have a long way to go. Develop a three-year plan to move to world-class.
Score: 76-100: You are doing well! Continue to build on your strengths. Your best today may not be good enough for tomorrow.

Conclusion

The evidence is overwhelming. Supply chain excellence does drive shareholder value. And we would argue that it's the most important factor in determining the shareholder value in both public and private companies.

All CEOs and supply chain professionals need to understand this linkage in their companies and be able to clearly explain it. To do that, supply chain leaders need to speak the language of the board of directors, Wall Street, and the executive suite. Supply chain professionals need to have a seat at the table by clearly showing how supply chain excellence enables revenue generation; how it generates new cash flow; and of course, a continuous reminder of how it manages the vast majority of operating cost.

To do this, supply chain managers and executives need to de-mystify within their own organizations concepts such as working capital, cash flow, and economic profit. This, along with a clear focus on the customer, is allowing some progressive supply chain organizations to achieve the place of prominence in the corporate structure that they deserve. This way of thinking used to be a new concept; it's not anymore. Companies like Apple and Amazon have proven the case.

We hope you found useful our discussion of: "What is supply chain excellence?" We urge you and your organization to develop your own crisp definition and track your progress over time.

Whether it's partnering with the CFO to execute on company strategy or talking to investors about the metrics, margins, and timing of a new initiative, supply chain leaders need to see themselves as total business leaders focused on creating shareholder value. To drive shareholder value, supply chain leaders need to have the right people and processes, need to be SAVVY in tracking and analyzing financial data, and need to take a holistic approach to supply chain risk management. Most importantly, leaders need to build highly integrated supply chains that can protect margins during downturns and capture opportunities when markets rise.

Forging the connection between supply chain management and shareholder value raises the supply chain's profile in the company and provides a critical opportunity to drive home supply chain's role in the overall business. Ultimately, by aligning the supply chain to shareholder value, companies can appropriately balance risks and rewards and thereby optimize total value across the supply chain.

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DRIVING SHAREHOLDER VALUE WITH YOUR SUPPLY CHAIN

A FINAL NOTE

We hope you have found the material in this white paper helpful and useful. We at the University of Tennessee's Global Supply Chain Institute are committed to industry impact. This white paper is an example of how we translate research from our #1 ranked research faculty into useful information for supply chain professionals. We believe the real world of industry is our laboratory, and this is why we are so committed to engaging with practitioners. It fuels our research. It defines our courses. It prepares our students.

This deep connection with industry has allowed us to build the largest university-sponsored Supply Chain Forum with over sixty sponsoring companies. Our relationship with industry also drove the creation of our unique Executive MBA for Global Supply Chain and a robust portfolio of other SCM executive programs to help you be prepared to succeed now and into the future. We have more than 1,000 undergraduate students studying supply chain management, and our graduate students study around the world in innovative programs such as our first-of-its-kind Tri-Continent MS-SCM.

In the end, we are only as good as our network. If your organization is passionate about being a leader in the SCM field, please consider joining us.

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