

Optimizing Performance Across Your Supply Chain

A White Paper

by Alan Eisman

WebFOCUS



Alan Eisman Alan Eisman serves as the National Director of Performance Management Solutions at Information Builders. Prior to this position Alan ran Information Builders' NY Metro Region and advised many clients on a wide range of business intelligence applications designed to improve operational performance. Alan has over 20 years of senior management experience in enterprise software including ERP, business intelligence, CRM, and enterprise integration.

Prior to Information Builders, Alan held director and vice president positions with JD Edwards, System Software Associates, and Information Management Associates. He received his initial training in information systems with IBM.

Alan is a frequent speaker on topics like operational performance management and translating strategy into execution. Alan is also certified in the American Production and Inventory Control Society. (APICS)

Table of Contents



Executive Summary

Historically when a firm (typically a manufacturer or distributor) referred to its supply chain it primarily considered business processes directly within its control. Yes customers and vendors mattered, but these factors could be better controlled since relatively fixed production schedules were the norm, products were less commoditized, and local proximity mattered. Past initiatives to improve supply chain performance primarily focused on cost reduction, efficiency, and quality through total quality management (TQM), just in time (JIT), and six sigma initiatives. To be competitive today emphasis needs to be placed on maximizing not only cost reduction, but on greater agility, innovation, and partnerships.

According to Harvard Business School Professor Michael Porter any activity in a firm's value chain that does not provide real competitive advantage is a candidate for outsourcing to a partner that can provide a cost or value advantage.¹ With this trend towards outsourcing more functions, the supply chain extends well beyond the internal functions of an organization. While this presents opportunities for competitive advantage and business agility it also presents a greater need for communication, information sharing, trust, and shared goals between supply chain partners. Figure 1 illustrates the virtual supply chain's potential for optimal performance.



Figure 1.

Broadly defined, the term supply chain has come to mean value chain. Today supply chains exist in every type of business and represent all processes related to creating and providing value to stakeholders. For manufacturers, distributors, and retailers, a supply chain is the core business for other types of organizations: healthcare, financial services, state and local government etc. – when we think of the supply chain as the value chain the same principals apply.

¹ Martin, Christopher. "Logistics and Supply Chain Management," Pearson Education Limited, Third Edition 2005.

Each year business executives emphasize strategy and lay out broad goals and initiatives to support corporate objectives. These lofty proclamations are put forth in annual reports, on corporate Web sites, and in company newsletters and posters that are hung in every corridor and by each watercooler. Dr. David Norton, who along with Dr. Robert Kaplan pioneered the balanced scorecard approach to translating strategy into operational execution, was recently guoted as saying, "Strategy is what differentiates a company, yet nine out of ten firms fail to execute on their strategies." Norton goes on to say, "The value gap defines the difference between an organizations' aspiration and its reality, how you close the gap is the essence of strategy."2

A firm's supply chain is the essence of how it delivers value to its customers. According to the Supply Chain Operations Reference Model (SCOR) the supply chain includes all processes related to planning, sourcing, producing, delivering, and returning goods. Today innovation is more tightly linked to these processes as supply chain partners must collaborate on ways to improve efficiency and quality.

Therefore the stakes are much higher for how a firm differentiates itself from its competitors as it seeks to achieve better alignment between its business strategy and operational execution. The supply chain is in effect a firm's value chain and largely embodies the actual translation of the strategy into operations. This is made even more challenging, due to the need not only to create true alignment within the enterprise, but also with each supply chain partner.

² CMP. "Q&A: Scorecard Pioneer David Norton on Strategic Alignment," Intelligent Enterprise, March 5, 2007.

Competing Objectives

The reason that supply chain performance management is so challenging and critically important lies in the very nature of the performance objectives themselves. For each objective there is an equally important objective that if managed in isolation, will adversely impact another objective.



Figure 2.

For example perfect order achievement – defined as delivering all of the items in the right quantities on time with zero defects – is critical to sustaining high rates of customer retention. In order to create a buffer for fluctuations in real demand, safety stock inventory is needed at various stages of the supply chain, but maintaining excess inventory directly conflicts with objectives related to maximizing inventory turnover and return on assets. Cost metrics should be broken down to the lowest level and by customer across the supply chain – known as ABC costing – so that inefficiencies and individual costs associated with individual customer buying patterns are identified. When this is done all players in the supply chain can treat cost reduction and each supply chain sub-process as a shared goal to be balanced with other important goals.

Within an organization this challenge can be overcome with strong leadership that brings together various functional groups to balance the objectives relative to overall corporate goals and business strategies, which in turn is communicated so that everyone is on the same page. Then incentives need to be aligned so each department benefits by contributing to corporate goals related to profitability, return on assets, and stock price.

But with the extended supply chain the challenge is exponentially harder since each company, while interdependent, answers to different shareholders.

Managing Risk

Managing objectives in order to achieve superior supply chain performance ends up being an exercise in risk management because any breakdown in the supply chain represents a risk that needs to be managed. We previously discussed safety stock, which in effect is one way of mitigating the risk relative to variations in demand. Other examples of risk include the availability of quality labor, supplier risks, commodity shortages and price fluctuations, obsolescence, fluctuations in foreign exchange rates, and plant breakdowns. A recent study of leading supply chain companies by McKinsey³ asked company executives what they do to minimize the increasing risk of supplying customers effectively. A large number of firms are looking towards performance agreements with partners and better communication with customers regarding potential concerns.



Figure 3.

So not only do we need to get various functions within an organization working to mitigate risk and align goals, but we must extend this process of shared goals and collaboration across the extended supply chain. When this is done then all players in the supply chain can treat managing risk as a shared goal. They jointly develop forecasts and replenishment plans as well as processes for monitoring, managing, and adjusting plans as demand changes.

³ McKinsey Quarterly. "Understanding Supply Chain Risk: A McKinsey Global Survey," September 2006.

Collaborative planning forecasting and replenishment (CPFR) is a concept that seeks cooperative management of inventory by replenishing products throughout the supply chain. Information is shared between suppliers and retailers in planning and satisfying customer demands. By providing real-time visibility into demand and inventory, CFPR seeks to make the supply chain process more efficient by:

- Decreasing inventory, logistics, and transportation
- Improving the flow of goods from raw material suppliers and manufacturers to retailers
- Quickly identifying discrepancies in forecasts, inventory, and order data so problems can be corrected before they impact sales or profits
- Gaining up front agreements SLA scorecards
- Sharing information and fostering collaboration
- Responding to and measuring issues as well as improving processes

One Information Builders client, a large distributor of office supplies and furniture, ships 640,000 order lines per day through 64 warehouses. Their largest customers are office supply superstores like Staples. Drop shipping directly to the superstores' commercial customers cuts out costly steps in the supply chain. In order to achieve this type of cooperation between supplier and retailer there needs to be real sharing of information and real trust. In effect the superstore is entrusting their customer relationship to the supplier. This trust is developed through shared goals so otherwise conflicting objectives of agility vs. cost and efficiency vs. effectiveness are balanced.

The Case for Information Sharing – Collaboration and Trust

Fostering a high performance value chain starts with an overall emphasis on creating an environment where performance and operational information is shared in a transparent manner. This creates an environment of trust, which empowers the supply chain partners to collaborate in a proactive way to solve operational problems while constantly striving for more innovative ways to improve overall performance and achieve greater value. The old axiom that knowledge is power must be revised for the highly interdependent world of the supply chain to knowledge is power only when it is shared.

In the book How by Dov Seidman he quantifies the value of trust through communication by citing the results of a survey by professors Jeffrey H. Dyer of the Marriott School at Brigham Young University and Wujin Chu of the College of Business Administration at Seoul National University. "Dyer and Chu surveyed almost 350 buyer/supplier relationships involving eight automakers in the United States, Japan, and South Korea and found a direct and dramatic relationship between trust and transaction costs. The least trusted buyer incurred procurement costs six times higher than the most trusted: same parts; same sorts of transactions. These additional costs came from added resources that went into the selection, negotiation, and compliance costs of executing deals. Dyer and Chu point to Nobel Prize-winning economist Douglas C. North's findings that these sorts of transaction costs account for more than a third of all business activity and that the least-trusted companies were the least profitable."

There is enormous benefit that can be derived through information sharing of strategies, performance goals, key performance indicators (KPIs) and operational information. Creating and sharing strategies ensures the necessary alignment is in place, shared goals ensure stakeholders "are pulling in the same direction, KPIs let us know how we are performing and operational information enables us to be agile, collaborative, and operate in real time. To relate this to football, the strategy is the game plan so everyone knows their roles, the goals are to win, with intermediate goals of scoring or getting first downs; the KPIs are the scoreboard; and the stats and the operational information are what is actually happening on the field in real time and in replays. With the teams' shared understanding of goals and strategies, the KPIs, and operational data in conjunction with what is happening on the field, adjustments required to win the game can be made.

Aligning Objectives Across Strategies and Perspectives

The start of any exercise is to establish specific value chain themes to create a real focus on the organization's strategy and define what it is uniquely qualified to do. For example Apple Computer emphasizes innovation while Dell Computer emphasizes efficiency. The most common methodology in use today for developing and implementing strategy is the balanced scorecard approach first introduced in 1995.⁴

When developing a scorecard, companies need to choose a few themes, for example customers for life, that will guide the inevitable tradeoffs among objectives and resource allocations. Strategic and tactical objectives are assigned measures and targets so progress towards objectives can be measured. Objectives are then grouped along the four scorecard perspectives and loaded, with their individual metrics and targets, into a performance management database.



Figure 4.

To maximize performance across the value chain, business intelligence (BI) must be provided across the organization from both a strategic and operational perspective. The strategy map provides an integrated model that balances diverse goals and processes across the organization. Objectives and initiatives are described in cause and effect chains, which are then cascaded throughout the organization so each participant understands how they will be measured and how their contributions relate to corporate goals.

Then management organizes communication via dashboards and KPIs that let people on the front line understand how they are doing by using analytical tools that drill into detail and uncover the

⁴ Kaplan, Robert S. and Norton, David P. "The Balanced Scorecard," Harvard University Press, 1996.

root causes of various performance problems. Management analyzes effectiveness to further refine strategies and puts initiatives, also known as gap projects, in place that are directed at improving performance. This is called operational performance management and leads to performance improvement due to improved alignment and the truth in the adage, what gets measured gets done.

The ultimate goal is to improve business performance, which comes from improving execution on the processes designed to support strategic goals. According to a Brookings Institute study only 15 percent of a typical company's market value is today made up of tangible assets vs. 62 percent in 1982.⁵ So the goal has shifted from the efficient use of tangible assets to the effective and efficient use of human, organization, and information capital. This shift points to the need to embed real-time information into operational processes (BI) for front-line workers across the enterprise. If front-line workers are armed with this knowledge, there is a real opportunity to achieve the type of virtual supply chain described earlier.

With shared goals and the information needed to optimize performance in real time, stakeholders work together to close the gap between strategy and operations. When you provide performance management coupled with operational intelligence to everyone in the extended enterprise you achieve strategic business intelligence because now BI directly supports operational effectiveness in alignment with strategies and goals.

Yet sadly the average organization only provides access to 20 percent of its information to 10 percent of its employees. For more information on how Information Builders provides BI to the masses refer to the white papers "Business Intelligence Goes Operational" and "Process Driven Business Intelligence."



8



⁵ Lev, Baruch. "Intangibles," Brookings Institution Press, 2001.

Operational Performance Management

If performance management is a strategic corporate directive, defining corporate business objectives needs to be a priority. To manage performance from a strategic and operational point of view, systems and processes need to interact in a way that delivers a two-cycle closed-loop solution. The first cycle is the operational business intelligence systems used by individual business units. Operational BI needs to deliver usable and actionable operational data across all business units and then deliver key performance indicators to a strategic performance management system.

The two closed loop systems, operational and strategic, need to intersect in order for data to be shared and to create alignment between all levels of the organization so executives and operational managers are tracking the same benchmarks. For example, balancing the lagging financial indicators of sales and charge-backs with the leading indicators of customer satisfaction and cycle-time measures can drive coordinated performance across the customer support, manufacturing, and sales business-units.

Not only do shared goals and operational information open up the possibility for greater alignment, but they also create the potential for a cycle of continuous improvement as depicted in Figure 6.



Figure 6.

Fostering a High Performance Supply Chain

Once the basic strategies and goals have been established, tools are needed to motivate and empower everyone in the enterprise to execute on organizational plans. First powerful tools for communicating performance information are provided through intuitive and personalized dashboards. Since all stakeholders will ultimately use these tools, implementation should require no training, be strictly browser-based (no plug ins), adhere to the strictest security standards and be highly scalable. Dashboards must allow each user to focus in on their KPIs, alerts, operational drill paths, and also allow them to seamlessly collaborate with colleagues.

For more advanced users dashboards should provide comprehensive analytical tools that enable users to drill anywhere and evaluate trends to gain real insight.

But dashboards and analytics that exist without a framework for bringing an organization's strategy and operations into alignment fall short because the strategy has not been made operational. A framework provides the one lingua franca necessary to maintain order and context as opposed to each group presenting departmental numbers in the most favorable light. To achieve alignment, a rich framework is needed for creating strategies, maintaining metrics and dimensions, and propagating objectives.



Figure 7 – With superior communication, analytics, and alignment the foundation for continuous performance improvement across the supply chain is in place.

A true performance management system must be an overseer to all business-unit operational systems. It needs to evenly and objectively manage the indicators and plans of each unit. And it needs to review each unit's key performance indicators and objectives within the context of the organization as a whole.

A Framework for Operational Performance Management



Figure 8 – The intersection between operational business intelligence and performance management.

Information Builders provides a fully integrated application for operational performance management called the Performance Management Framework (PMF). PMF offers the best attributes of a tool and an application. As a tool it is adaptable to any set of measures, dimensional structures, or strategic methodology. As an application it comes complete with hundreds of predefined measures, data and analytic models, reports, publishing tools, collaboration workflow, alerts, and more.

PMF is built on the world's leading data integration framework from iWay Software, an Information Builders company. iWay solutions enable access to more than 300 information assets including databases, applications, documents (HIPAA, EDI, SWIFT etc.), and source measures. These KPIs along with your dimensional structure are loaded into PMF to optimize system performance and maintain historical data. This allows you to track progress as well as aggregate and analyze information by different dimensions (location, product, etc.). Measures may also be input directly into PMF and plans are easily loaded from budgeting and planning applications or spreadsheets.

Unlike most scorecard products that were developed independent of BI technology, PMF is built with WebFOCUS, the most widely utilized business intelligence (BI) platform in the world. With this architecture all functionality is integrated, easily customized and extended for real-time operational BI. WebFOCUS offers advanced and proven integration, scalability, and usability for all enterprise users, including managers, operational employees, business partners, and customers.

A Supply Chain Scenario

The scenario in Figure 9 involves a manufacturer of consumer electronics that distributes its products through a network of distributors and retailers and also uses WebFOCUS Performance Management Framework (PMF). It shows a dashboard that each user can personalize to include only their relevant KPIs, alerts, and graphs. Users can drill down from this high-level information to more detail, such as metrics data, alerts, trends, projects, commentary, and hidden reds that relate to the KPIs. You will notice that the profit measure is underperforming.



Figure 9.

Users drill through the chain of information to understand what causes and effects are related to this underperforming goal. They can also drill down to the dimensional structure for profit to understand who is responsible for poor profits, whether it is a particular division or product. First they can evaluate why profits are underperforming globally.

In Figure 10 the profit goal has three causal objectives: sales, margins percentage, and customer returns. It appears that customer returns is the primary culprit in underperforming profit. If users drill down on customer returns they will see all of the related causes and effects and learn that product quality is the cause. They can take their analysis even further by drilling down to specific plants or products, and then drill in to operational information to see what customer orders and shipments are being impacted



Figure 10.

A complete framework for performance management should provide the necessary reports, be built with BI solutions, and be adaptable to any business strategy or dimensional structure. PMF is delivered with over 100 highly parameterized reports and most data is immediately drillable, providing easy access to the information and real insight into performance problems through graphical reports and strategy maps. The business users responsible for various scorecards easily assemble maps like the one in Figure 11.



Figure 11.

The process of identifying and implementing strategic plans via balanced scorecards must provide flexibility in order to allow organizations to continually refine their strategies.

The Agile Supply Chain

The key to success in today's highly competitive environment lies in a businesses' ability to respond to customer demand in real time. This can only be achieved with an actual alignment of goals and strategies across all supply chain stakeholders and true information sharing. And, each participant should seek to optimize and integrate the level of service it provides in a virtual and seamless manner. Only then can otherwise conflicting objectives be balanced and the goals of all stakeholders be achieved. The benefits of having a high-performing supply chain are huge. Not only can partners wring out unnecessary costs, but the goal of achieving higher perfect order ratings yields enormous benefits.

Armed with shared goals and tools for collaboration, a company and its partners can achieve superior performance across the supply chain as the results of Debra Hoffman's research into perfect order rating metrics clearly illustrates below.





Optimizing Performance Across Your Supply Chain

The Bottom Line – Performance Improvement and Cost Savings

PMF is built for performance management on an enterprise scale. First PMF is deployed on the most scalable BI platform and takes advantage of iWay Software solutions that provide the greatest access into all of your information assets. PMF provides a rich database allowing for standardization of dimensional structures and metrics attributes for reuse across the organization. Scorecards may be cascaded for easy creation of new versions and to ensure proper alignment between scorecards.

As organizations rush to plug functional holes such as defining drill paths and report content at runtime, or adding complete BI functionality to acquired scorecard-publishing tools, they will be architecturally challenged as they attempt to incorporate BI, prove scalability, and provide reasonable cost-of-ownership metrics. Moreover in order to support deeper metrics like customer profitability, where measures must be combined from multiple sources, a system that provides deep and seamless integration and is also platform, application, or database independent is required.

In recent comparisons with other BI market leaders, Information Builders has found between a three-to-one and ten-to-one performance advantage, leading to substantially lower hardware costs and server-based licensing fees. The scalability of WebFOCUS allows substantially more users to be supported on a given configuration than any other BI product. And, since we require no proprietary databases, we have far lower administration requirements. In an environment of potentially thousands of users, there should be no need to purchase large server farms to support long-term performance management initiatives.

As performance management is automated and becomes part of the culture for all stakeholders they will expect even more broad-based operational and analytic BI functionality. Right-time information with the ability to intuitively drill anywhere will naturally be an important part of most strategic gap initiatives designed to improve performance. The ability to provide data as well as deep insight into information will be the secret sauce that motivates and empowers people to truly execute on objectives. In this way a culture of accountability is created where continuous improvement through collaboration, agility, innovation, and superior value chain execution becomes the norm.

Sales and Consulting Offices

North America

United States

- Atlanta,* GA (770) 395-9913
- Baltimore, MD Consulting: (703) 247-5565
- Boston,* MA (781) 224-7660
- **Channels**, (800) 969-4636
- Charlotte, NC Consulting: (704) 494-2680
- Chicago,* IL (630) 971-6700
- Cincinnati,* OH (513) 891-2338
- Cleveland, OH (216) 520-1333
- Dallas,* TX (972) 490-1300
- Denver,* CO (303) 770-4440
- Detroit,* MI (248) 641-8820
- Federal Systems,* DC (703) 276-9006
- Hartford, CT (860) 249-7229
- Houston,* TX (713) 952-4800
- Los Angeles,* CA (310) 615-0735
- Mid-Atlantic
 - New Jersey* Sales: (973) 593-0022 Philadelphia,* PA Sales: (610) 940-0790 Pittsburgh, PA Sales: (412) 494-9699
- Minneapolis,* MN (651) 602-9100
- New York,* NY Sales: (212) 736-7928 Consulting: (212) 736-4433, ext. 4443
- Orlando,* FL (407) 804-8000
- Phoenix, AZ (480) 346-1095
- St. Louis,* MO (636) 519-1411
- **San Jose,*** CA (408) 453-7600
- Seattle, WA (206) 624-9055
- Washington,* DC Sales: (703) 276-9006 Consulting: (703) 247-5565

Canada

Information Builders (Canada) Inc.

- Calgary (403) 538-5415
- Ottawa (613) 233-0865
- Montreal* (514) 421-1555
- **Toronto*** (416) 364-2760
- Vancouver (604) 688-2499

Mexico

Information Builders Mexico

Mexico City 52-55-5062-0660

Australia

Information Builders Pty. Ltd.

- Melbourne* 61-3-9631-7900
- **Sydney*** 61-2-8223-0600

Europe

- Belgium* Information Builders Belgium Brussels 32-2-7430240
- France* Information Builders France S.A. Paris 33-14-507-6600
- Germany Information Builders (Deutschland) Dusseldorf 49-211-523-91-0 Eschborn* 49-6196-77576-0 Munich 49-89-35489-0 Stuttgart 49-711-7287288-0
- Netherlands* Information Builders (Netherlands) B.V. Amsterdam 31-20-4563333
- Portugal Information Builders Portugal Lisbon 351-217-217-491
- Spain Information Builders Iberica S.A. Barcelona 34-93-344-32-70 Bilbao 34-94-425-72-24 Madrid* 34-91-710-22-75
- Switzerland Information Builders Switzerland AG Dietlikon 41-44-839-49-49
- United Kingdom* Information Builders (UK) Ltd. London 44-845-658-8484

Representatives

- Austria Raiffeisen Informatik Consulting GmbH Vienna 43-12-1136-3870
- Brazil InfoBuild Brazil Ltda. São Paulo 55-11-3285-1050
- China
 - InfoBuild China, Inc. Shanghai 86-21-5080-5432 Rongji Software Technology Co., Ltd. Beijing 86-10-5873-2031
- Ethiopia MKTY IT Services Plc Addis Ababa 251-11-5501933
- Finland InfoBuild Oy Espoo 358-207-580-843
- Greece Applied Science Athens 30-210-699-8225
- Guatemala IDS de Centroamerica Guatemala City 502-2361-0506
- Gulf States Nesma Advanced Technologies Bahrain Kuwait Oman
 - Qatar Yemen United Arab Emirates Riyadh 96-1-465-6767
- India* InfoBuild India Chennai 91-44-42177082

- Israel NESS A.T. Ltd. Tel Aviv 972-3-5483638
- Italy Selesta G C Applications S.P.A. Genova 39-010-64201-224 Milan 39-02-2515181 Torino 39-011-5513-211
- Japan K.K. Ashisuto Osaka 81-6-6373-7113 Tokyo 81-3-5276-5863
- Malaysia Elite Software Technology Sdn Bhd Kuala Lumpur 60-3-21165682
- Norway InfoBuild Norway Oslo 47-23-10-02-80
- Philippines Beacon Frontline Solutions, Inc. 63-2-750-1972
- Russian Federation FOBOS Plus Co., Ltd. Moscow 7-495-124-0810
- Saudi Arabia Nesma Advanced Technology Co. Riyadh 996-1-4656767
- Singapore Automatic Identification Technology Ltd. 65-6286-2922
- South Africa Fujitsu Services (Pty.) Ltd. Johannesburg 27-11-2335911
- South Korea Unitech Infocom Co. Ltd. Seoul 82-2-2026-3100
- Sweden InfoBuild AB Kista 46-735-24-34-97 Cybernetics Business Solutions AB
- Solna 46-7539900 Taiwan Galaxy Software Services Taipei 886-2-2586-7890
- Thailand Datapro Computer Systems Co. Ltd. Bangkok 662-679-1927, ext. 200
- Venezuela InfoServices Consulting Caracas 58-212-763-1653

Toll-Free Number

Sales, ISV, VAR, and SI Partner Information (800) 969-4636

*Training facilities are located at these branches. **Authorized to sell iWay Software only.

Inførmation Builders **Corporate Headquarters** Canadian Headquarters

For International Inquiries

www.informationbuilders.com askinfo@informationbuilders.com 150 York St., Suite 1000, Toronto, ON M5H 3S5 (416) 364-2760 Fax (416) 364-6552 +1(212) 736-4433

Two Penn Plaza, New York, NY 10121-2898 (212) 736-4433 Fax (212) 967-6406

Copyright © 2007 by Information Builders, Inc. All rights reserved. [67] All products and product names mentioned in this publication are trademarks or registered trademarks of their respective companies.



DN7505691.1107