

May, 2011

Executive Sales and Operations Planning Maturity Levels and Key Solution Criterion

Sales and Operations Planning (S&OP) is the key integrated process that the supply chain organization (specifically the Chief Supply Chain Officer) can leverage to achieve visibility and transformation across the entire organization and throughout the value chain. There are several stages in the maturity of S&OP processes, and associated technology enablers that can help companies reach them. In addition industry specific differences abound that complicate the process of gaining success with respect to S&OP. In this Research Brief, we will explore the current business challenges faced by companies, the priority allocated to S&OP, the maturity levels associated with S&OP and the role of technology enablers.

Business Context

Thus far, 2011 has been an extremely challenging year with unstable economic conditions, awful and unexpected catastrophic events, and continued political unrest. As can be seen from Figure 1, the top pressures that companies are facing today (chief supply chain officer survey, January 2011) include rising costs and the growing complexity of global operations. The goal of S&OP is to maximize the profitability of the business for which cost control and reduction is a key driver.

Figure 1: Top Pressures Facing Companies with respect to Supply Chain Management from 196 enterprises



Source: Aberdeen Group, January 2011

Research Brief

Aberdeen's Research Briefs provide a detailed exploration of a key finding from a primary research study, including key performance indicators, Best-in-Class insight, and vendor insight.

"Our top pressure, due to the economy, as been mostly reducing costs within the organization in order to stay competitive within our industry. We have researched alternate suppliers and left some open employment positions empty in an attempt to lower our overall costs. While this was difficult at first, we have managed to survive and now have multiple employees cross-trained in various departments."

~ Supply Chain Planner at Mid-size Health Care Manufacturer

According to the research, the top areas of focus for companies in 2011 were as follows:

- Supply chain visibility (58%). Given the significant levels of outsourcing, many companies have lost control and visibility to their processes ([Integrated Demand-Supply Networks: Five Steps to Gaining Visibility and Control](#), March 2009). The growth of the supply chain for companies on both the buy-side as well as sell-side has resulted in visibility emerging as their top process area of focus.
- Inventory management (56%). The expansion of the supply chain into demand-supply networks necessitates the need for precision in sizing inventory buffers. The recent capital crunch has shifted the focus towards working capital optimization - the key driver of which is an organization's inventory levels, ([Working Capital Optimization: Increase Cash Flow in the New Economy](#), May 2010).
- Supply chain collaboration (50%). Collaboration has gained in importance due to the rise in number of trading partners including those in emerging countries. Also, the Pareto rule no longer applies when it comes to trading partners. In the past, companies could only integrate and collaborate with the top 20% of their supplier base which often formed as much as 80% of the revenue. This is no longer the case in many situations. The expanding number of trading partners has resulted in the need to expand collaboration throughout the entire supply chain including the non-critical (long tail) suppliers ([B2B Integration and Collaboration: Trading Community Enablement for the Multi-Enterprise Supply Chain](#), March 2010).
- Sales and operations planning (48%). S&OP has always been important to companies but now it is given even more attention in today's dynamic business conditions. As past Aberdeen research has identified, it is critical to look at S&OP as not a purely SCM function but as a business planning function that is tightly integrated with finance ([Sales and Operations Planning: Strategies for Managing Complexity within Global Supply Chains](#), July 2010).

The key pressures that companies are facing with respect to S&OP (in this report when we talk about S&OP, we are referring to the executive S&OP process defined in the callout box to the right) processes include the need to reduce supply chain operating costs (53%) and the management of increasing demand volatility (49%), which creates the need for balancing these mutually exclusive business pressures (Figure 2). All of these pressures are competing against each other amidst an increased complexity of supply chain processes and the global nature of these supply chains. The view point of the supply chain organization follows the priority shown above.

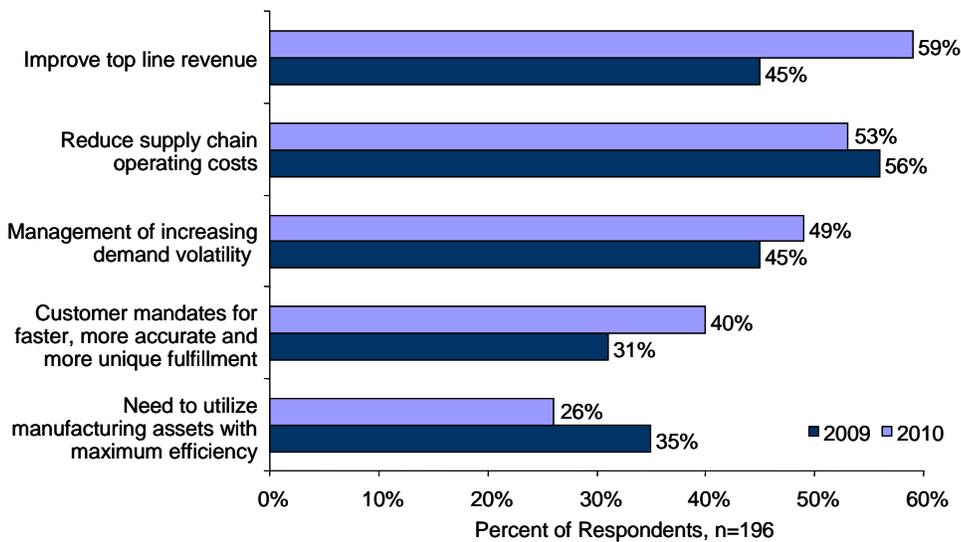
"We are reporting on historical performance on sales, profit, mix and inventory. We are tying all P&L projections directly to the top line generated by S&OP and preparing executive level P&L reporting with an outline of qualitative and quantitative risks/opportunities. In addition we are ensuring pricing, trade spend, SG&A are in alignment with latest movements from S&OP."

~ Director of Supply Chain at
Large Consumer Electronics
Company

Definitions:

- ✓ Executive S&OP: The process by which the management review is performed after the operational aspects of supply review, demand review and product review is performed
- ✓ Operational S&OP: This is the process prior to the executive S&OP where the demand patterns are assessed to create unconstrained demand, the supply constraints utilized to identify the constrained demand
- ✓ Integrated Business Planning: Level 3 of the S&OP maturity which involves tight integration with the Financial Planning and Budgeting process

Figure 2: Leading Pressures to Improve S&OP



Source: Aberdeen Group, July 2010

Other key stakeholders - Finance, Sales and Marketing

However, the finance organization has a slightly different viewpoint in terms of top pressures: 59% indicate that the top pressure is the need to improve top line revenue and 53% indicate that the need to utilize manufacturing assets with maximum efficiency is a key pressure. This illustrates that the perspective of the finance organization does not necessarily reflect the view point of supply chain organizations. In order to truly obtain engagement of the finance organization in S&OP, it is necessary to understand their financial perspective on the business. Then it is easier to explain how the incorporation of their perspective in S&OP will help alleviate their top pressures and align the organization to the business’s financial objectives.

In addition, today’s senior management looks to all functions for ways to weather the recession, while at the same time taking advantage of any business opportunities that may arise from the current economic conditions. The supply chain organization is being asked to deliver more than just efficiency; it is also being asked to deliver innovative cost reduction strategies. Capitalizing on such opportunities first requires visibility into the extended supply chain – something many companies find difficult to achieve.

The sales and marketing organization(s), with their responsibility for revenue generation and business expansion opportunities, also plays a key role. Where revenue growth and expansion opportunities are scarce, today’s senior management looks to sales and marketing to enhance margins and prevent share erosion, at the very least. These objectives are tied both to extended supply chain costs/efficiencies and new product infusion.

Best-in-Class Companies:

- ✓ Experienced 81.9% forecast accuracy level for three months out into the future
- ✓ 97.2% of orders delivered to customers complete and on time
- ✓ Decreased cash-to-cash cycle time by 0.3% year over year

To assist, product development is being asked to accelerate speed to market and improve reliability through the product development cycle to increase the percentage of sales from new products.

Conventional S&OP processes have failed to integrate these broader lifeblood issues of the sales, R&D/Product Management, marketing and financial business leaders into the process. Two examples of the broader scope of the process are as follows:

- Product management: an important requirement of the process is the integrating the results from portfolio and product life cycle management into a Product Review process.
- Sales and marketing: the analysis and refinement of marketing plans, sales account management tactics like pricing can be used as gap-closing actions during the Demand review process.

Maturity Levels of Executive S&OP

Table 1 identifies the three levels of maturity that companies have with respect to the executive S&OP process. Level 1 is the lowest level (Laggards) and Level 3 is the IBP level (Best-in-Class).

Table 1: Sales and Operations Planning Competitive Framework

	Level 1	Level 2	Level 3 (IBP)
Process	S&OP process is ad-hoc, with disparate data sources and there is not a single demand number based on which the company performs. Top-down forecast is not tied to plan and there is no formal process.	S&OP process is more refined with some level of data synchronization and organizational mandates to arrive at a single demand number off of which the company executes.	Is a true integrated business planning process where all the organizations involved work collaboratively to arrive at a single demand number off of which the company executes. Margin and revenue focus exists.
Organization	S&OP process is non-standardized across different departments – no clear ownership of S&OP process.	S&OP process is standardized across different departments with one of the departments taking ownership of S&OP process.	Collaborative balanced cross-functional team takes ownership of the integrated business planning process. Finance organization is playing a more leadership role in the process.

	Level 1	Level 2	Level 3 (IBP)
Knowledge	Pockets of information known at different departments. No sharing of information across departments.	Some level of sharing of information across departments; however there are still internal barriers to overcome like corporate politics and lack of cross-functional focus.	Information available instantaneously to all parties with cross-functional interdepartmental focus.
Technology	Usage of spreadsheets for enabling S&OP process or non-integrated technology tools.	Individual demand and supply planning modules not integrated to each other.	Executive-level what-if analysis capability along with integrated supply and demand planning modules with ability to optimize on financial metrics.
Measurement	Basic measurements like forecast accuracy, capacity utilization owned by individual departments.	More advanced measurements like forecast accuracy at individual SKU level, family level, lead-times measured and owned by individual departments but shared with organization.	Cross functional metrics like order fill rate, supply/demand match, gross margin measured and monitored as part of S&OP process.

Source: Aberdeen Group, May 2011

Industry Focus

Industry: The research sample included respondents from the four major industry segments - process, consumer, discrete and high-tech/electronics. Please note: Respondents may identify themselves in more than one category, thus the percentages will not equal 100%. Key demographics are:

- √ Discrete (26%): Aerospace and Defense (4%), Automotive (4%), Industrial Equipment Manufacturing (9%), Industrial Product Manufacturing (9%)
- √ Consumer (40%): Apparel (3%), Consumer Durable Goods (4%), Consumer Packaged Goods (8%), Consumer Electronics (4%), Wholesale/Distribution (7%), Food/Beverage (9%), Retail (5%),
- √ Process (21%): Chemicals (4%), Metals and metal products/ Mining/oil/gas/utilities (10%), Paper/lumber/timber (3%), Pharmaceutical manufacturing (4%)
- √ High-tech/electronics (20%): Computer equipment and peripherals (2%), Health/medical/dental devices or services (9%); High-technology (2%); Telecommunication equipment/services (7%)

Three Best-in-Class Requirements for the S&OP process enabler

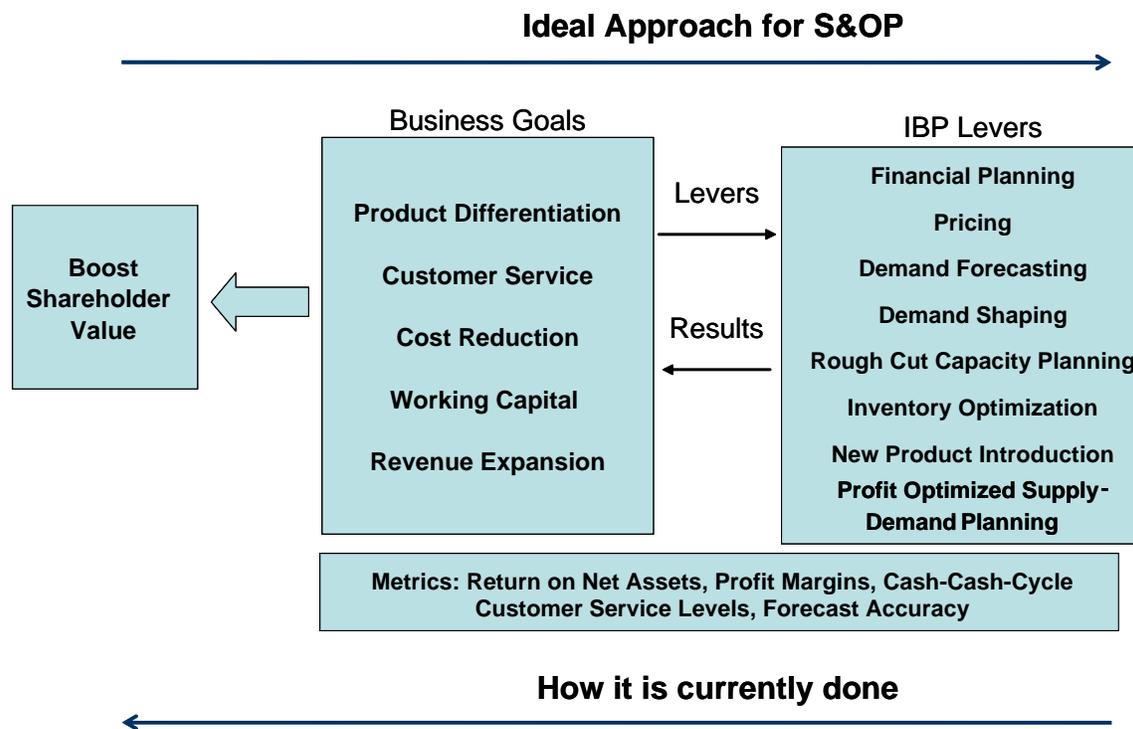
- **Ability to support scenario management and analytics.** Aberdeen research finds that Best-in-Class Companies are twice as likely as all other companies to evaluate constrained planning scenarios during supply demand balancing. Simultaneous consideration of supply, demand and finance is a key requirement. Demand, including product / customer profitability and product mix optimization should be supported. Financials should be both a constraint and an output. All of these elements must be considered simultaneously and not in silos
- **Support for collaboration with internal and external stakeholders.** Consideration of sales pricing, service policy and promotions as a key driver of demand and being able to integrate

the product management organization within the S&OP process. Integrating the sales data into the S&OP process is critical but companies are challenged with this due to the lack of a collaboration platform that captures sales input in an effective manner.

- Financial planning integration.** Best-in-Class companies are twice as likely as all others ability to evaluate and optimize inventory and service policy to maximize cash flow and profitability as part of the S&OP process. In addition Best-in-Class companies are three-times as likely as all others to have the ability to express the S&OP plan in terms of revenue and margins

Typical S&OP solutions support the right hand side of the picture (Figure 3) and move to the left but an ideal S&OP solution should start from the financial picture in the left and move toward the right towards supply chain capabilities.

Figure 3: Financial Profitability Drives S&OP Tactics



Source: Aberdeen Group, May 2011

Financial modeling needs to be very deep in order to properly consider and evaluate impact on working capital, profits, cash flow and other financial metrics. In addition, the financial modeling needs to replicate the company’s reporting structure in order to feed directly into the budgeting and planning process including modeling multi-currency, differential tax rates and partial ownership situations.

Industry Specific Capability Requirements of S&OP

Table 2 shows the industry specific requirements of the Executive S&OP process for the 4 key industry segments (the breakdown is shown in the callout box).

Table 2: Industry Specific Requirements of S&OP Across Demand, Supply and Product Characteristics

Industry	Demand	Supply	Product
Process	Focus on long term statistical forecasting	Long lead-time manufacturing process which is campaign focused (larger volumes of production with a single set up and long set up times)	Mostly Build to Stock Reverse Bill of Materials
Discrete	Statistical forecasting at SKU level has limited application. Requires attach rate forecasting at component level	Long lead-time operations with assembly line manufacturing	Build to Order mix with Build to Stock Highly configured product with large multi-level BOM to SKU level simple products
High-Tech	Highly dynamic nature of business operations requires that demand patterns are updated at high frequency	Long lead-time operations upstream but rapid ability to configure products downstream	Configure to Order Very rapid product lifecycles makes product phase in phase out critical
Consumer	Understanding demand patterns of consumers critical to business success. Statistical forecasting augmented with causal forecasting (promotion planning and event management)	Has characteristics of process manufacturing but smaller lead-times	Build to Stock Product lifecycles are short and large number of SKU variants to address consumer demand

Source: Aberdeen Group, May 2011

Role of Technology

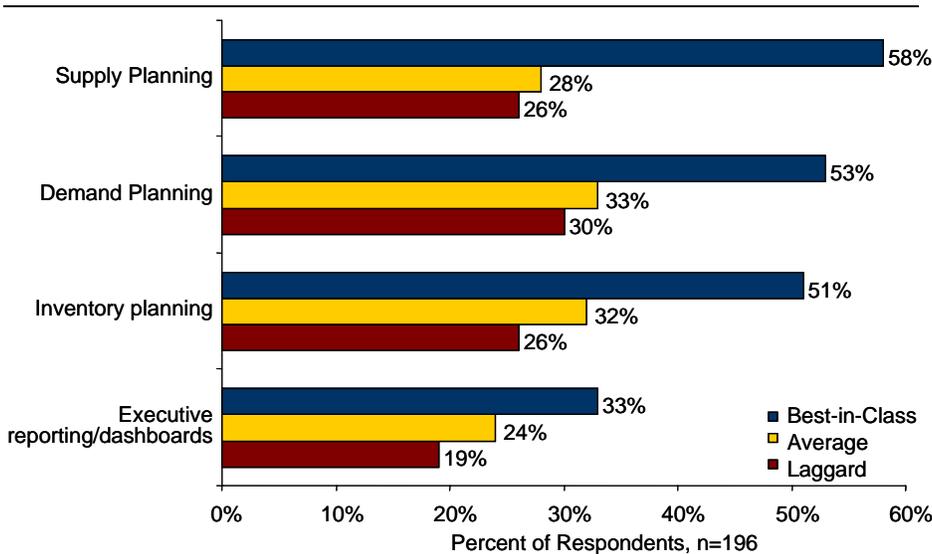
Best-in-Class companies are now leveraging technology as a differentiator as shown in Figure 4. In addition to the traditional areas associated with

inventory planning, demand and supply planning, Best-in-Class companies are also getting differentiation with the areas around executive reporting.

We still see rampant usage of spreadsheets across all the categories - 84% of overall respondents indicate that they are using spreadsheets to support the enablement of the S&OP process. Fifty-two percent (52%) of respondents indicate the usage of integrated ERP modules. Twenty-one percent (21%) of these respondents indicate the use of best of breed solutions whereas 31% still utilize custom legacy systems. Thirty-eight percent (38%) of respondents utilize business intelligence solutions. The variety of technology adoption approaches is due to the fundamentally interdisciplinary and customized nature of the S&OP process for each organization.

So given the large number of touch points in terms of roles associated with the S&OP process, the solution adopted by enterprises should enable integration across planning, business intelligence and optimization. An ideal approach is to utilize a solution that can perform financial planning and supply chain planning in the same platform.

Figure 4: Technology Adoption with Respect to S&OP Related Areas



Source: Aberdeen Group, April 2011

Case Study: Building Material Industry Illustrates the Importance of S&OP

Owens Corning Utilizes S&OP to Manage Rising Energy Costs and Housing Market Downturn

Owens Corning offers insulation, roofing, basement finishing, acoustic systems for building and remodeling, composites solutions and asphalt.

Owens Corning is organized into two business divisions – building materials and composite solutions. Their revenue was around \$5 Billion USD in 2010. The focus of this case study is on the building materials division. The customers of the building materials division are retailers, distributors and contractors. The primary products manufactured by this division are asphalt roofing shingles and glass insulation products. There are 31 plants along with three distribution centers located in Canada and the US for this business. The raw materials are purchased from a variety of global suppliers.

The biggest challenge facing Owens Corning is the economic conditions resulting in a tremendous drop in new house construction. There has been no precedence to such a drop off in market demand. Previous recession cycles have been predictable. Exacerbating the challenge is the increasing energy costs and the tight transportation market. The commercial market has been affected as well but not as significantly as the residential building materials market

In order to manage the situation, Owens Corning has initiated a major S&OP initiative. They have started the focus of their S&OP from the customer inwards. The big focus has been on getting closer to their customers and understanding their needs. They are looking to improve cycles and to provide reliability to their customers. There is a lot of work happening on inventory management to identify the right mix of products to be sold. The critical S&OP metrics that are looked at are order fill rate, on time delivery, working capital, days inventory outstanding, and forecast accuracy. The organization is focusing significant efforts on S&OP processes looking at KPIs with the intent to improve service and manage costs

Owens Corning has also started a technology initiative to upgrade existing systems including the ERP and Advanced Planning and Scheduling systems. Their corporate finance is also using a solution called Business Planning and Consolidation to rollup the financial data from global organizations. There is an opportunity to implement an S&OP solution using the same platform.

Case Study: Chemical Manufacturing Industry Illustrates the Role of Knowledge Management, Data and Organization

S&OP Anchors Supply Chain Transformation Project at Dupont

DuPont offers a wide range of products and services for markets including agriculture, nutrition, electronics, communications, safety and protection, home and construction, transportation and apparel. DuPont operates in over 90 countries with 2010 revenues of over \$31.5 billion with 60,000 employees worldwide. DuPont has over 14 different business divisions ranging from crop protection, food and nutrition, seeds, commodity chemicals, refrigerants, polymers, paints, pigments, electronics and communication technologies.

DuPont has over 95 + supply chains with around 300 different product families. It has a very complex supply chain structure with a large number of SKUs. There is a need to rationalize the number of SKUs to avoid storing excess inventory of low volume, slow moving SKUs. DuPont has had a significant focus on S&OP over the course of several years with some business units making significant progress. However they have realized that the S&OP process was unsustainable due to a lack of organization, data, knowledge management and technology capabilities. DuPont had worked with a leading S&OP process consulting provider to institute a strong process but faced many challenges institutionalizing it.

The fact that DuPont is in the process manufacturing industry brings about unique challenges as well. They have to deal with multiple stages in global supply chain, with a lack of coordination and synchronization across their end to end supply chain. They have to deal with higher working capital and poor customer service.

So what are the corrective actions that DuPont is taking?

From a knowledge management standpoint, DuPont is focusing on creating a Business Process Management (BPM) repository. In other words, DuPont is documenting their S&OP processes in a single central repository and they are instituting a core set of people who can keep this going, manage, and train the people in the execution of the S&OP process. There will be a central core group of people who will manage this repository. BPM is being used to highlight the connectivity and integrated nature of the supply chain.

From a data standpoint, it was realized that there needs to be a reconciliation of data. For example, multiple regions are using different terminology when it comes to products, customers or services. This causes challenges in creating a corporate dashboard where aggregation of data is critical. There is also no standardized relationship defined between various hierarchies across divisions, which make it difficult to perform ad-hoc business intelligence reporting.

From an organizational perspective, the General Managers of the business units are the owners of the S&OP process but they also have a centralized supply chain competency center.

Finally from a technology standpoint, DuPont realizes that their existing S&OP technology is inadequate to scale and will evaluate S&OP application integrated with financial scenario planning for their corporate roll out.

Case Study: Apparel Industry illustrates S&OP Phase I & II - Consensus Demand Forecasting and Collaboration

Under Armour Gets to a Single Number Forecast to Drive S&OP Demand Review

Under Armour Inc. is a developer of branded performance apparel, footwear, and accessories. Founded in 1996, they have been enjoying a

meteoric growth to around \$850 Million in 2010. They have achieved tremendous brand loyalty among consumers who range from young people to professional athletes.

Rapid growth brings with it huge challenges in terms of supply chain. Under Armour had to deal with rapidly increasing number of SKUs with very short product lifecycles in a highly fashion centric environment. They did not really have a consensus forecasting process even though there was feedback from sales, finance, merchandizing, etc.

They decided to implement a demand management solution from SAP to create a collaborative, one number consensus forecast. But the process was instituted first before launching the implementation. Sales planners, demand planners and merchandize planners all were included in the process definition stage and had accountability in process design. Once the process was designed, the implementation was done of the SAP Demand and Supply planning solutions.

An important part of this implementation was that not only was a consensus demand planning solution implemented, there was also a business intelligence solution instituted. This allowed Under Armour to perform exception management with alerts and provide the ability to visualize the data and prepare reports. Under Armour also sends the results of the consensus demand plan to the financial plan which is managed by the BPC solution also provided by SAP.

These have resulted in both qualitative as well as quantitative benefits. Under Armour has reduced inventory by around 20% and improved forecast accuracy by 10%. They have reduced data collection activities by 2/3 of what they used to do previously. This has resulted in better visibility of customer demand and an improved ability to execute. Now Under Armour is looking to improve other aspects of their S&OP process and acknowledge that process improvement is a continuous initiative and they have only scratched the surface.

Case Study: Apparel Industry Illustrates S&OP Maturity Phase 3 - Integrated Business Planning

ASICS Creates Cash Flow Statement from Sales Plan and Cost Data

ASICS is a leading designer and manufacturer of running shoes as well as other athletic footwear, apparel and accessories. ASICS is headquartered in Japan and ASICS America is headquartered in Irvine CA. ASICS America has around 300 employees with 2009 net sales of around \$567 Million. ASICS identified that their existing financial planning process had several gaps – it was driven by static cost drivers, it had an inflexible planning period and had no real-time adhoc reporting. Overall the planning cycle times were long and had no collaborative component.

ASCIS decided to do a process reengineering effort wherein they would integrate the sales and financial planning to streamline the process. This way

both the top down management budgeting element as well as the bottom up sales element were incorporated. In order to implement this process with respect to technology, the SAP Business Planning and Consolidation module was utilized. The inputs from the sales planning in terms of projected forecasts as well as the cost budgeting is converted to a cash flow statement. This is an example of a company that is trying to bridge the S&OP to the financial planning process. By doing this, ASICS was able to reduce the planning cycle time by more than 50%.

Recommended Actions

- **Create the ability to perform detailed scenario management, simulation and optimization.** Only 23% of Best-in-Class companies indicate that they have a strong ability to create upside opportunity assessment scenarios to analyze an S&OP plan. Ideally, the optimization and what-ifs should include the ability to set financials as the objective function and to toggle back and forth across different metrics as the objective function for proper analysis.

The ability to support decisions on product line, price policy, capital expenditures, financial policy, network design, open/close, supply chain policy, etc. are also part of the S&OP scenario management framework.

Without optimization, scenarios cannot be compared on an apples to apples basis. Optimization does this by making sure each scenario represents “the best the company can do” under the specific sets of assumptions. For example, different scenarios might require different production allocation, different use of raw materials, etc.

- **Create the ability to do root cause analysis.** Only 25% of Best-in-Class companies indicate that they have a strong ability to identify the cause of an S&OP metric being off-target. Significant time is wasted in organizations in diagnosing the “why” even though the “what” is known. This is an area where even Best-in-Class companies struggle. Persona based supply chain analytics solutions should be leveraged to create detailed business process playbooks that are industry specific to support this requirement.
- **Become adept at providing high-level reporting designed for executive management.** Only 22% of Industry Average companies are able to generate high-level reporting as compared to 54% of Best-in-Class companies. Given the large number of stakeholders involved in the S&OP process, companies must have a systematic way of identifying accountability and resolution/escalation mechanisms.

For more information on this or other research topics, please visit www.aberdeen.com.

Related Research	
<p><u><i>Supply Chain Intelligence: Adopt Role-Based Operational Business Intelligence and Improve Visibility</i></u>; Feb 2010</p> <p><u><i>Sales and Operations Planning: Strategies for Managing Complexity within Global Supply Chains</i></u>; July 2010</p>	<p><u><i>Integrated Demand-Supply Networks: Five Steps to Gaining Visibility and Control</i></u>; March 2009</p> <p><u><i>Multi-enterprise Manufacturing: The Role of Visibility and Collaboration in Driving Responsiveness</i></u>; July 2009</p>
<p>Author: Nari Viswanathan, Vice President / Principal Analyst, Supply Chain Management (nari.viswanathan@aberdeen.com)</p>	

For more than two decades, Aberdeen's research has been helping corporations worldwide become Best-in-Class. Having benchmarked the performance of more than 644,000 companies, Aberdeen is uniquely positioned to provide organizations with the facts that matter — the facts that enable companies to get ahead and drive results. That's why our research is relied on by more than 2.5 million readers in over 40 countries, 90% of the Fortune 1,000, and 93% of the Technology 500.

As a Harte-Hanks Company, Aberdeen's research provides insight and analysis to the Harte-Hanks community of local, regional, national and international marketing executives. Combined, we help our customers leverage the power of insight to deliver innovative multichannel marketing programs that drive business-changing results. For additional information, visit Aberdeen <http://www.aberdeen.com> or call (617) 854-5200, or to learn more about Harte-Hanks, call (800) 456-9748 or go to <http://www.harte-hanks.com>.

This document is the result of primary research performed by Aberdeen Group. Aberdeen Group's methodologies provide for objective fact-based research and represent the best analysis available at the time of publication. Unless otherwise noted, the entire contents of this publication are copyrighted by Aberdeen Group, Inc. and may not be reproduced, distributed, archived, or transmitted in any form or by any means without prior written consent by Aberdeen Group, Inc. (2011a)