Strategic Supply Chain Planning
Three Key Priorities of the Chief Supply Chain Officer

September 2010
Nari Viswanathan
Executive Summary

Today, senior management is looking for the supply chain organization to deliver more than just efficiency – it is being asked to deliver innovative cost reduction strategies to help grow their company and to present a market strategy differentiator (68% of respondents have indicated that reducing supply chain costs is the top pressure). In fact, 86% of respondents indicate that their management team has asked them to review the supply chain process in order to find opportunities to improve their company’s supply chain planning processes, and 71% of respondents have indicated the same for supply chain technology improvement. The focus of this report is to provide the Chief Supply Chain Officer (or VP of Supply Chain, Director of Supply Chain, etc.) a prioritized list of best practices within supply chain planning.

Best-in-Class Performance

Aberdeen used three metrics to determine Best-in-Class, Industry Average and Laggard performers in this study. The performance of Best-in-Class companies (top 20% of respondents) is as follows:

- Experienced an 82.3% forecast accuracy level for three months out into the future
- 96.9% of orders are delivered to customers complete and on time
- Experienced a cash-to-cash cycle time of 25.6 days

Competitive Maturity Assessment

Survey results show that the firms enjoying Best-in-Class performance shared several common characteristics, including:

- Best-in-Class companies are two times as likely as all other companies (the Industry Average and Laggards combined) to create demand forecasts that reflect true customer demand
- Best-in-Class companies are two times as likely as all others to collaborate with the customers on a strategic level

Required Actions

In addition to the specific recommendations in Chapter Three of this report, to achieve Best-in-Class performance, companies must:

- Implement the ability to better understand tradeoffs between service level and inventory investment
- Implement the ability to collaborate with the customer on a strategic level
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Chapter One:
Benchmarking the Best-in-Class

**Business Context**

The Chief Supply Chain Officer (CSCO) role provides a way for the supply chain to earn a place in the board room and drive strategic decision making. The CSCO has emerged as a key stakeholder in the company to make supply chain transformation happen. Today, senior management is looking for the supply chain organization to deliver more than just efficiency – it is being asked to deliver innovative cost reduction strategies to help grow their company and to present a market strategy differentiator. In fact, 86% of respondents indicate that their management team has asked them to review the supply chain process in order to find opportunities to improve their company's supply chain planning processes and 71% of respondents have indicated the same for supply chain technology improvement.

Supply chain planning is the part of the end-to-end Supply Chain Management (SCM) with the potential to provide market differentiation for companies. The specific processes that will be studied as part of this report are: supply chain network design, demand forecasting, inventory optimization, supply planning, and S&OP.

**Key Business Pressures**

As Figure 1 illustrates, the need to reduce operating costs is still top-of-mind for responding companies. During the early part of 2010, there was considerable optimism regarding the economy and companies seemed to be gearing up for the sales revenue growth.

**Figure 1: Key Pressures to Improve Supply Chain Planning**

| Need to reduce supply chain operating costs | 68% |
| Customer mandates for faster, more accurate and more unique fulfillment | 43% |
| Management of increasing demand volatility | 42% |
| Need to improve top line revenue | 42% |
| Management of increasingly global supply chains | 29% |

Percent of Respondents, n = 215

Source: Aberdeen Group, September 2010
Now with fears of a double dip recession and overall global reduction in growth (Europe including), the focus is squarely on cost reduction. The exception for the reduction in growth are countries like China and India which are seeing near double digit growth - but it has to be kept in mind that these countries had a lower baseline in terms of actual GDP compared to their population and specifically in India, there is considerable inflation to contend with. Hence the need for looking at supply chain planning to reduce operating costs is universal across all regions.

The other pressures - customer mandates to improve order fulfillment and the need to manage demand volatility - are related to each other. The reason why demand volatility exists is due to the widespread impact of the "Great Recession" as well as global competition. Due to the participants in the demand network (retailers, wholesalers etc) seeing this demand volatility first hand, they pressure the manufacturers to improve their order fulfillment capabilities. Also only 4% of companies indicate that sustainability related pressures are top of mind for companies. The reason for this change in mindset towards sustainability is the realization that it is more important to stay in business than worry about long term considerations of sustainability.

The Maturity Class Framework

Aberdeen has used the following metrics to determine Best-in-Class, Average and Laggard performers in this study:

- Forecast accuracy (average forecast accuracy at the product family level)
- Perfect orders delivered to customers (complete and on-time)
- Cash-cash cycle (from the time you pay a supplier to the time you collect cash from a customer)

Table 1: Top Performers Earn Best-in-Class Status

<table>
<thead>
<tr>
<th>Definition of Maturity Class</th>
<th>Average Class Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best-in-Class: Top 21% of aggregate performance scorers</strong></td>
<td>Experienced 82.3% forecast accuracy level for 3 months out into the future</td>
</tr>
<tr>
<td></td>
<td>96.9% of orders delivered to customers complete and on time</td>
</tr>
<tr>
<td></td>
<td>Experienced Cash-to-Cash Cycle Time of 25.6 days</td>
</tr>
<tr>
<td><strong>Industry Average: Middle 49% of aggregate performance scorers</strong></td>
<td>Experience 68.1% forecast accuracy level for 3 months out into the future</td>
</tr>
<tr>
<td></td>
<td>88.4% of orders delivered to customers complete and on time</td>
</tr>
<tr>
<td></td>
<td>Experienced Cash-to-Cash Cycle Time of 54.9 days</td>
</tr>
</tbody>
</table>

"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

"The “V” that was the technology market between October 2008 and October 2009 taught us that inventory can be both a strategic asset and a painful liability. Focusing on demand planning accuracy, cycle time reductions, postponement techniques, and close supplier relationships has increased for us. I like to joke that supply and demand match for one day before trending counter-cyclically until they cross over again. Demand flew buy supply for us in late 3Q09 and seems to have dropped back below supply in July of 2010. It’s key not to overreact to either transition or you find yourself bloated or starved. Customer collaboration is also critical as they are one step closer to your end market. We also engage with key suppliers to understand their utilization so that we can have some forewarning on changes. Inflection points kill. Predicting them is virtually impossible."

~CVP of Supply Chain, Large Semiconductor Manufacturer
The Best-in-Class PACE Model

Using Strategic Supply Chain Planning concepts to achieve corporate goals requires a combination of strategic actions, organizational capabilities, and enabling technologies that can be summarized as shown in Table 2.

Table 2: Best-in-Class PACE Framework

<table>
<thead>
<tr>
<th>Pressures</th>
<th>Actions</th>
<th>Capabilities</th>
<th>Enablers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need to reduce supply chain operating costs - 59%</td>
<td>Improve internal collaboration process for creating forecasts, pricing and promotion plans and making mid-course corrections – 57%</td>
<td>Centralized supply chain organization – 86%</td>
<td>Demand Planning applications</td>
</tr>
<tr>
<td></td>
<td>Optimize end-end inventory based on customer service levels – 50%</td>
<td>Ability to measure the adherence of the plans to actual figures – 79%</td>
<td>Network design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to create demand forecasts that reflect true customer demand – 75%</td>
<td>Supply Planning applications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to model the KPIs from the previous periods with regards to capacity, forecast accuracy and inventory – 71%</td>
<td>Inventory Planning applications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C-level supply chain officer – 70%</td>
<td>Executive reporting applications (BI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to segment the demand forecasts based on key product-customer characteristics – 67%</td>
<td>Scenario Management applications</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S&amp;OP applications</td>
</tr>
</tbody>
</table>

Best-in-Class Strategies

Strategic actions, like the ones shown in Figure 2, provide direct insight into respondent companies’ overall strategy and disposition. It has to be noted that Best-in-Class, Industry Average, and Laggard companies have generally prioritized the same strategic actions; however this does not mean that their organizational capabilities are the same. In Chapter Two, we will explore the specific differences in process capabilities between the Best-in-Class, Industry Average and Laggard companies.
Figure 2: Strategic Actions Taken by Best-in-Class Companies

The top two actions that companies are taking are demand management and inventory management. In order to understand why companies are still focusing on an area that has seen considerable interest recently from the supply chain community, we need to take a look at the demand patterns that companies are facing.

There has been an increase in lumpy or intermittent demand versus the traditional normal distribution demand. Forty-three percent (43%) of companies indicate that up to 40% of their products have lumpy/intermittent demand. Furthermore, 61% of companies state that up to 60% of their products have lumpy/intermittent demand. The main reason for the increase in lumpy demand is the proliferation of multiple channels for sales as well as the growth in geographic sales regions. In environments like aftermarket spare parts with a large number of SKUs and the highly intermittent nature of demand, forecasting demand is difficult. This makes optimizing inventory very challenging since understanding and forecasting the demand variability is essential to the inventory management process.

Many companies are looking to create a tighter feedback loop from actual POS data and also to do customer level forecasting for key B2B customers. In an environment where pareto analysis of the customer revenues indicate a 20-80 split, doing customer level forecasting is a very appropriate approach for companies to take. In Chapter Three, we will explore the actual process competency levels for Best-in-Class, Industry Average, and Laggard companies.
Even though the notion of a customer service level is known to companies today, the setting of customer service level policies and its adherence is not uniform. Please note that for this study customer service level is the percent of orders delivered to customers complete and on time.

For example, the following data points are important to note. When asked about the attributes that determine the customer service level for the company, the highest percentage was for customer (43%) and the lowest percentage was for price (6%). For build to order companies, profit margin played a more critical role with 26%. For build to stock companies, geography (17%), channel (15%) and volumes (19%) played critical roles as well.

When asked about how well the company meets its target customer service levels, only 8% indicated that they do not have any targeted customer service levels and 62% indicated that they meet their targeted customer service levels.

The above points create the impression that companies do have a very good handle on how to come up with a target customer service level as well as to meet it.

But the troubling data point is that 38% of companies indicate that they do not calculate the cost of increasing service levels and the impact of service on reducing inventory. Also 25% of the remaining 62% adopt a rule of thumb approach to give them a general estimate. Twenty-four percent (24%) analyze the standard deviation of the historical data and 12% analyze forecast error.

Increasing service levels and meeting it comes with a price - increased inventory. The goal of supply chain planning processes and associated technologies should be to provide a clear visibility to the tradeoffs between these two important parameters - customer service level and inventory.

"Using a statistical forecast to offset the natural bias in sales and or product group demand signals is critical. It provides a great forum for discussing what the market will bear vs. the often conservative sales numbers and the usually aggressive profit center numbers."

~ CVP of Supply Chain, Large Semiconductor Manufacturer
Chapter Two: Benchmarking Requirements for Success

Supply Chain Planning serves as a solution to enable companies to achieve supply and demand goals through greater optimization of inventory management, forecasting, customer service and finance. The following chapter identifies the process, organization, knowledge, and technology management capabilities which make this success a reality.

Case Study — Chiesi Manages Build to Order Pharmaceutical Business through Demand Responsive Planning Process

Chiesi is an 850 M Euro pharmaceutical company, founded in Parma in 1935, with a global presence. It has global operations consisting of 22 direct affiliates, three manufacturing sites, and four research centers. Chiesi has grown through the acquisition of affiliates in different countries such as Pakistan and Brazil. These affiliates provide a local presence to Chiesi. Due to this approach, Chiesi’s technologies and products are available in over 50 countries through a strategic alliance network. This alliance network of international pharmaceutical groups was developed with a local presence in several different global regions.

Some of the challenges that Chiesi faced include the need for large product portfolios to support global markets, a high level of regulation by various countries, products with a limited shelf life and risk of expiration, a high level of variability due to promotion of products, and a build to order business model with long lead-times.

Over 50% of the company’s revenue is obtained through the demand from the affiliates outside of Italy. The replenishment of the affiliates is managed by a make to order rather than a make to stock process. Given the long lead-times, there is a three month frozen horizon for replenishment orders from the affiliates. Chiesi understood the impact of the demand forecasting function on the overall S&OP process. They realized that the build to order process requires a different approach than pure statistical forecasting. Thus Chiesi went about their implementation project that involved the institution of S&OP across their affiliates.

In order to implement the S&OP process within their affiliate network, Chiesi realized the need to spread the culture of effective S&OP process. The S&OP process was started in two affiliates as a pilot project. Says Corrado Snaiderbaur, Chiesi’s Corporate Demand Manager, “It is important to go slow in S&OP because of culture change that needs to permeate through the organization. Time is most important for the culture change to happen. That is why we went through step by step.”

Fast Facts

- Best-in-Class companies are two times as likely as all others to create demand forecasts that reflect true customer demand.
- Best-in-Class companies are two times as likely as all others to collaborate with the customers on a strategic level.
Case Study — Chiesi Manages Build to Order Pharmaceutical Business through Demand Responsive Planning Process

The S&OP process had the following implementation steps. The local sales rolling forecast is provided as an input from the affiliates on a monthly basis before a predefined deadline. The corporate demand forecast is aggregated into the local sales forecast. Corporate supply planning creates the purchase orders for the first three months, which is frozen, and then creates a supply constrained plan. Chiesi adopted a best of breed solution provider to implement this process.

Given the long lead-times, it is important to measure the changes in the sales forecast from the affiliates and their end consumers. This is why the accuracy is calculated on a three month average through the tool. In other words, Chiesi takes a snapshot of the demand picture three months into the future and then measures the difference between real sales and those forecasted. This is shared with marketing, production and most importantly the management team. There is an email that is sent to the executive committee of group, general managers of affiliates, marketing director of the affiliates, and the logistics manager. There is high visibility of these results, and at the end of the year the forecast accuracy is correlated with the inventory levels. There are over 50 Chiesi employees around the world that use the best of breed solutions tool.

Benefits of the solution include:

- The marketing department plays a very important role within the S&OP process. The existing process is very simple and creates clear visibility of data for the marketing team. For example, there is conditional formatting – where a cell becomes green when they sell more than forecast, and if they sell less than forecast then the cell becomes red.

- After a period of 12 months of the S&OP rollout in Germany and UK, Chiesi saw inventory levels reduced by 15% and a 30% improvement in Mean Absolute Percentage Error (MAPE).

- Prior to implementing this process, the company had 110 days on average inventory levels and 15% to 20% of forecast error initially. One year after implementing the process at the affiliates, the inventory decreased 20% (reduced to 90 days) and forecast error reduced to 10% to 13% of forecast error.

- These strong results have strengthened the level of management commitment as well as resulted in S&OP becoming a standard operating procedure of the company’s processes.

Competitive Assessment

Aberdeen Group analyzed the aggregated metrics of surveyed companies to determine whether their performance ranked as Best-in-Class, Industry Average, or Laggard. In addition to having common performance levels, each
class also shared characteristics in five key categories: (1) **process** (the approaches they take to execute daily operations); (2) **organization** (corporate focus and collaboration among stakeholders); (3) **knowledge management** (contextualizing data and exposing it to key stakeholders); (4) **technology** (the selection of the appropriate tools and the effective deployment of those tools); and (5) **performance management** (the ability of the organization to measure its results to improve its business). These characteristics (identified in Table 3) serve as a guideline for best practices, and correlate directly with Best-in-Class performance across the key metrics.

**Table 3: The Competitive Framework**

<table>
<thead>
<tr>
<th></th>
<th>Best-in-Class</th>
<th>Average</th>
<th>Laggards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Process Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to create demand forecasts that reflect true customer demand</td>
<td>72%</td>
<td>46%</td>
<td>26%</td>
</tr>
<tr>
<td>Ability to collaborate with the customer on a strategic level</td>
<td>57%</td>
<td>36%</td>
<td>24%</td>
</tr>
<tr>
<td>Ability to better understand tradeoffs between service level and inventory investment</td>
<td>54%</td>
<td>30%</td>
<td>24%</td>
</tr>
<tr>
<td>Ability to perform constrained supply chain planning</td>
<td>46%</td>
<td>34%</td>
<td>31%</td>
</tr>
<tr>
<td>Centralized supply chain organization</td>
<td>85%</td>
<td>63%</td>
<td>63%</td>
</tr>
<tr>
<td>C-level supply chain officer</td>
<td>60%</td>
<td>50%</td>
<td>31%</td>
</tr>
<tr>
<td><strong>Organizational Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability of personnel to manage critical relationships through the end to end supply chain</td>
<td>41%</td>
<td>24%</td>
<td>21%</td>
</tr>
<tr>
<td><strong>Knowledge Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demand Management</td>
<td>59%</td>
<td>34%</td>
<td>29%</td>
</tr>
<tr>
<td>Sales and Operations Planning</td>
<td>48%</td>
<td>44%</td>
<td>33%</td>
</tr>
<tr>
<td>Predictive Modeling (Discrete Event Simulation)</td>
<td>30%</td>
<td>27%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to measure the adherence of the plans to actual figures</td>
<td>79%</td>
<td>53%</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Performance Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to model the KPIs from the previous periods with regards to capacity, forecast accuracy and inventory</td>
<td>71%</td>
<td>53%</td>
<td>35%</td>
</tr>
<tr>
<td>Ability to measure cross-functional metrics</td>
<td>54%</td>
<td>43%</td>
<td>39%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010
Capabilities and Enablers

Based on the findings of the Competitive Framework and interviews with research participants, Aberdeen’s analysis of the Best-in-Class demonstrates the following capabilities and enablers in process, organization, performance management, and technology.

Process Management

In terms of process capabilities, the Best-in-Class demonstrate significant advantages in terms of a specific set of functional areas as shown in Figure 3. These areas are demand forecasting, demand collaboration, supply planning and some aspects of inventory management (specifically the area of tradeoffs between service level and inventory investment).

Figure 3: Best-in-Class Advantage for Process Capability Level 1

The following functional areas within supply chain planning can be described as process capability level I - demand forecasting, demand collaboration, supply planning and inventory management. These are areas which provide the ability for companies to improve their inventory turns, forecast accuracy and customer service level metrics. However these functional areas do not address the strategic timeframe planning of their companies.

Whereas when it comes to more advanced capabilities such as simulation, network design, risk management etc., as illustrated in Figure 4, Best-in-Class companies do not have a significant advantage over all other companies. These functional areas can be described as process capability level II. These are the crucial ingredients for companies to manage long term supply risk, manage long term sustainability goals through simulation, predictive analytics and other similar approaches. The reason why even Best-in-Class companies do not have a higher capability level in these areas...
is the fact that mastering these process areas is difficult - they involve the need for solution capabilities that go beyond the traditional supply chain planning solutions. In fact, in the technology section, we will highlight additional points regarding this process capability gap.

**Figure 4: Lack of Best-in-Class Advantage for Process Capability Level II**

<table>
<thead>
<tr>
<th>Process Area</th>
<th>Best-in-Class</th>
<th>All Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to design risk management into your systems</td>
<td>36%</td>
<td>20%</td>
</tr>
<tr>
<td>Ability to simulate different scenarios based on predictive modeling approaches</td>
<td>33%</td>
<td>16%</td>
</tr>
<tr>
<td>Ability to create a cost optimized network design</td>
<td>28%</td>
<td>15%</td>
</tr>
<tr>
<td>Ability to make rapid product introduction decisions</td>
<td>26%</td>
<td>11%</td>
</tr>
<tr>
<td>Ability to create detailed carbon footprint results of supply chain processes</td>
<td>15%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010

**Organizational Management**

Change management is a topic that has been always been a challenge for the supply chain manager. What is the reason why change is difficult for companies to manage especially in the supply chain realm? The reasons are as follows:

- **Entrenched processes** - the attitude of “we have been in business all along with these existing processes, why should we change it?”
- **Lack of a silver bullet process** - there is no prescribed standard process that companies can be 100% confident that it will work in their business environment. This results in a situation where employees are often afraid to make changes since the present state could be worse than their current state.
- **Lack of management commitment** - the general manager of a business unit and the CEO of the company are key stakeholders for the supply chain planning process. If their commitment is not present, then the managers have an uphill task.
- **Lack of the requisite skill sets** – the Supply Chain is not a fully defined area - in fact it is still evolving. In this situation, employees in
organizations are not trained adequately resulting in a lack of initiative to explore new process changes.

What are the Best-in-Class organizational approaches to resolve the above challenges? As indicated in Figure 5, there are two basic approaches to take:

- **Create a Chief Supply Chain Officer (CSCO) role** - Create a C-level role which reports into the COO or even the CEO of the organization. This elevates supply chain to the board room and brings with it the authority to impact major change. Bring the areas of manufacturing, order fulfillment and procurement into the office of the CSCO. This will ensure that there is a single point of accountability for the entire order-delivery process.

- **Create a centralized supply chain organization or a center of excellence** - There are the following types of organizations - those that have multiple divisions and have had traditionally different manufacturing (or supply chain) organizations and those that have multiple divisions (or a single division) and have had a centralized supply chain organization. From a Best-in-Class capability standpoint, we see the need for companies that may have multiple business divisions to also create an overlay center of excellence that provides a single point of accountability for all supply chain issues.

**Figure 5: Best-in-Class Organizational Capability**

<table>
<thead>
<tr>
<th></th>
<th>Laggard</th>
<th>Average</th>
<th>Best-in-Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized supply chain organization</td>
<td>31%</td>
<td>63%</td>
<td>85%</td>
</tr>
<tr>
<td>C-level supply chain officer</td>
<td>50%</td>
<td>60%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010

**Performance Management**

When it comes to performance management in the realm of supply chain planning, there are three main areas that companies should focus on:

- **High level reporting designed for executives.** This type of performance management capability should provide mapping
between operational supply chain metrics and financial metrics, and allow drill-down capabilities into lower-level metrics. An example of the tie-in between financial and operational metrics is the cash-cash cycle to working capital mapping.

- **Root cause analytics.** This category of performance management for supply chain planning should provide advanced analytics capabilities (including historical analysis and forward-looking estimates) for supply chain specialists, with the ability to perform root cause analysis and to drill down into specific business areas. These applications should provide significant levels of configuration flexibility for modeling business metrics. An example of this approach is the identification of the specific reason why the transportation costs could be rising month over month the drill down of which reveals the increase in expedited shipments. Further investigation shows that the lead-times of manufacturing companies have increased resulting in the need for air freight to offset the increased manufacturing lead-time.

- **Response management.** This is the approach of constantly monitoring the actual performance of the plan and ensuring that course corrections are made based on actual events as they happen. An example of this: suppose actual customer service levels are out of sync with the expected customer service level for a key customer, then the plan must be changed quickly to reallocate existing inventory to this key customer to ensure that the customer service levels can be brought back to the service level agreements.

**Figure 6: Best-in-Class Performance Management Capability**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Best-in-Class</th>
<th>All Others</th>
<th>Percent of Respondents, n = 215</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to measure the adherence of the plans to actual figures</td>
<td>74%</td>
<td>46%</td>
<td></td>
</tr>
<tr>
<td>Ability to measure cross-functional metrics</td>
<td>56%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>Ability to model the KPIs from the previous periods with regards to capacity, forecast accuracy and inventory</td>
<td>72%</td>
<td>40%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010
Knowledge Management

As Figure 7 illustrates, Best-in-Class companies are differentiated with respect to all others when it comes to the ability of their employees to understand the end-end supply chain rather than focusing on functional areas. A single minded focus on the functional metrics like forecast accuracy, service levels, inventory turns, inventory spend without consideration of the big picture results in improved performance within their own role but may not result in overall corporate performance. On the other hand, if the inter-relationship of these metrics and their impact on corporate performance is well understood, then the task of performing global optimization can be done (with or without tools).

Figure 7: Best-in-Class Knowledge Management Capabilities

<table>
<thead>
<tr>
<th>Ability of personnel to view the supply chain holistically in terms of linked processes</th>
<th>Percent of Respondents, n = 215</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability of personnel to manage critical relationships through the end to end supply chain</td>
<td>40% (Best-in-Class) 28% (All Others)</td>
</tr>
</tbody>
</table>

Technology Enablement

When asked about the top barriers that companies face towards implementing supply chain planning technologies, the answers are along expected lines - users being comfortable with spreadsheets (42%), lack of skilled resources (38%), and applications are too expensive (33%). However when asked about the potential of managed services, 83% of all respondents indicated that supply chain planning was too strategic to be outsourced. This indicates the situation that end users want to fix their existing technology infrastructure through on-premise approaches rather than outsourcing their software/process all together.

Table 4: Top Barriers Experienced when Implementing Supply Chain Planning Technology

<table>
<thead>
<tr>
<th>Barrier</th>
<th>Percent of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users are more comfortable with spreadsheets</td>
<td>42%</td>
</tr>
<tr>
<td>Lack of skilled resources within company</td>
<td>38%</td>
</tr>
<tr>
<td>Applications are too expensive</td>
<td>33%</td>
</tr>
<tr>
<td>Applications are not integrated to ERP, SCM platforms</td>
<td>31%</td>
</tr>
<tr>
<td>Difficult to do what-if analysis</td>
<td>29%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010
Also, when asked about the nature of technology enabler that they have in place for various process areas, level I process capability had good usage of technology (at least 50% of ERP systems or best of breed solutions) while a lower percentage of users indicated they have no system. When it comes to level II process capabilities, the penetration of technology was much lower.

This indicates that end users have not gained the level of process maturity for level II process areas to be able to implement strong technologies. The areas indicated in level II require significant domain and technology talent to be resident within the organization. That is why typically level II SCP capabilities are often obtained from consultants as a one off rather than being institutionalized. This lack of having a standard process set up for level II capabilities is a gap that must be filled by adopting solutions that are not as complex to use and require the same skills as a level II SCP solution.

### Table 5: Technology Enablers for Supply Chain Planning

<table>
<thead>
<tr>
<th>Process Capability Level</th>
<th>Technology Enabler</th>
<th>Spreadsheets</th>
<th>ERP Systems</th>
<th>Best of Breed Solutions</th>
<th>No System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level II</td>
<td>Predictive Modeling (Discrete Event Simulation)</td>
<td>23%</td>
<td>15%</td>
<td>10%</td>
<td>52%</td>
</tr>
<tr>
<td>Level II</td>
<td>Supply Chain Network Design</td>
<td>34%</td>
<td>31%</td>
<td>16%</td>
<td>19%</td>
</tr>
<tr>
<td>Level II</td>
<td>Sales and Operations Planning</td>
<td>40%</td>
<td>33%</td>
<td>10%</td>
<td>17%</td>
</tr>
<tr>
<td>Level I</td>
<td>Inventory Optimization</td>
<td>33%</td>
<td>37%</td>
<td>18%</td>
<td>12%</td>
</tr>
<tr>
<td>Level I</td>
<td>Demand Management</td>
<td>38%</td>
<td>40%</td>
<td>19%</td>
<td>3%</td>
</tr>
<tr>
<td>Level I</td>
<td>Supply Planning</td>
<td>32%</td>
<td>51%</td>
<td>14%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010

### Case Study - Electrolux Manages Outsourced Supply Chain Through Planning Capabilities

Electrolux is a global appliance company headquartered in Stockholm, Sweden. It had an annual net sales of $15B in 2009. They have over 40 million customers in 150 countries all over the world. The focus of this particular case study is on the Electronic Home Care Products division (EHCP). EHCP makes and markets around 300 models under the brand name of Electrolux, Sanitaire, Beam and Eureka.

In 2003, the pricing within the vacuum industry took a drop and this caused the EHCP division to look into alternate business models. EHCP North America made the decision to shift from a primarily manufacturing model to a sourcing model of finished goods and components from overseas suppliers (moved upward from 20% to 80%). Even though this model brought cost advantages, the complexity was increased. The new model increased inventory levels, days of supply, obsolescence, and lead times, and decreased production flexibility. At the same time, the company was also trying to introduce new innovative products and expanding existing product lines. In addition to these new aspects, the supply chain team did not have a true demand planning or inventory planning solution, and was utilizing cumbersome Excel spreadsheets for forecasting and planning processes.

continued
Case Study - Electrolux Manages Outsourced Supply Chain Through Planning Capabilities

EHCP had to work towards creating a new supply chain solution that could align them with this shift in business model. In addition they needed a centralized location to store the information required to create the forecasts.

EHCP went with a best of breed solution provider to support the company in its supply chain goals of optimizing inventory through improved forecast accuracy and maintaining high levels of customer service. This happened around the 2008 timeframe.

But while this technology rollout was happening, the economic climate was rapidly changing. This created additional challenges. EHCP traditionally had faced the situation where the inventory levels were increasing while the forecast was decreasing. However, Jennifer Hughey, vice president of supply chain at EHCP says, “The positive aspect of this negative situation was, with the best of breed solution provider, we had the ability to react much more quickly to this shift in demand, and were able to reduce inventory back to a reasonable level by the end of the same year. We learned to trust what the system was telling us.”

Key benefits include:

- EHCP has increased forecast accuracy (at the SKU level) by 15%, and lowered days of supply by 20% (SKU level), while simultaneously increasing customer service levels
- The company has also been able to significantly reduce and realign safety stock - they have enhanced their ability to manage demand and lead time variability
- Collaboration between sales, marketing and operations, as well as with trading partners has improved – in addition, internal and external collaboration has improved
- EHCP is now better positioned to withstand shifting economic challenges, while continuing to deliver the highest levels of service to their customers

Aberdeen Insights — Integration of Supply Chain Planning with ERP

When asked about whether their supply chain planning solution is integrated with their ERP solutions, 55% of all respondents indicated yes. When specifically asked about the nature of integration with the ERP system the following were the responses of those who had the integration with ERP:

- 45% - Batch based transfer of data but user has to go to different user interfaces
- 35% - Real-time transfer of data but user has to go to different user interfaces
- 20% - Application user interface level integration of workflow and data

The question now to ask is, "Is there application user interface level integration of workflow and data absolutely needed?" The answer is "no." Supply chain planning is a function that does not need a very tight integration with ERP due to its usage pattern. Supply chain planning solutions are often used daily, weekly or, in some cases, monthly and the solutions do not require a real-time transaction backbone. The users of the solution (demand planners, supply chain planners) are also different from the typical ERP users (IT users, order analysts, inventory control analysts). The architecture of the SCP solutions (memory resident) is also very different from ERP (database driven). Due to these various reasons, it can be concluded that it is more critical to have integration with ERP (with clean data) rather than have a very tight application user interface level integration.
Chapter Three: Required Actions

Whether a company is trying to move its performance in inventory management from Laggard to Industry Average, or Industry Average to Best-in-Class, the following actions will help spur the necessary performance improvements:

Laggard Steps to Success

- **Implement the ability to create a well established exception management process.** Twenty-five percent (25%) of Laggards have the ability of having a well established exception management process versus 49% of Best-in-Class companies. In today's dynamic business climate, it is not only sufficient to have a strongly documented "normal" process but also a clear understanding of how to address exceptions that may arise. Examples of exceptions are: sudden drop in supplier capacity resulting in the need to select an alternative supplier, quality issues resulting in increased overtime of plants as well as expedited shipments. Even though some of these exceptions cannot be handled in the planning time frame, simulations of possible types of exceptions should be conducted to impact of these on operations.

- **Implement the ability to better understand tradeoffs between service level and inventory investment.** Twenty-seven percent (27%) of Laggards have the ability to understand tradeoffs between service level and inventory investment versus 54% of Best Class companies. When asked about the cost of increasing service levels, 49% of Laggards indicated that they don’t compute it. And 25% of the Laggard respondents indicated that they use a rule of thumb approach to estimate the cost of increasing service levels. Whereas among the Best-in-Class 40% of respondents adopt more sophisticated approaches such as analyzing the standard deviation of the historical data or analyzing the forecast error.

Industry Average Steps to Success

- **Implement the ability to collaborate with the customer on a strategic level.** Thirty-three percent (33%) of Industry Average companies have the ability to collaborate with the customer on a strategic level versus 54% of Best-in-Class companies. Discrete manufacturers stand more to gain by enhancing this ability to collaborate with the customer. The key difference between the discrete manufacturing world and the CPG world is the lack of end customer true demand (point of sale data or syndicated data). This lack of the true customer demand has resulted in increased inventory at the distributors; automotive dealerships are a clear example.

Fast Facts

- Twenty-five (25%) of Laggards have the ability of having a well established exception management process versus forty-nine (49%) of Best-in-Class companies.

- Twenty-seven (27%) of Average companies have the ability to segment the demand forecast based on key product-customer characteristics versus 63% of Best-in-Class companies.

"The practice of Supply Chain Planning is changing as you plan/think in scenarios over a time period and review these scenarios continuously as time goes by. Speed of information sharing and visibility is the key to taking quick decisions and this sharing of information should involve all stakeholders in this process."

~ VP of Supply Chain, Large European Industrial Packaging Company
example. Building trust at the channel level that sharing their sales will help themselves eventually is the toughest part of achieving this goal.

- **Implement the ability to do customer level forecasting.** Twenty-seven percent (27%) of Industry Average companies have the ability to segment the demand forecast based on key product-customer characteristics versus 63% of Best-in-Class companies. By being able to perform pareto analysis on the customer base using profit as the metric, the key customers can be identified. Their customer service level requirements and the input of the account management teams of these key customers can then drive the customer level forecasts.

### Best-in-Class Steps to Success

- **Implement the ability to do cost and carbon optimized network design.** Only 20% of Best-in-Class companies have the ability to do a cost and carbon optimized network design. Network design tools available in the marketplace provide the ability to model a demand-supply network in its entirety (demand network, supply network, logistics network, enterprise and financial network) and optimize it based on any pre-defined criterion such as price, cost, carbon footprint etc. Only 30% of Best-in-Class companies reassess their network at a frequency lower than once a month. Also only 8% of Best-in-Class companies indicate that their network design tool meets all our current and future anticipated needs. All of these point towards the need for Best-in-Class companies to seriously investigate new solutions and processes available for modeling networks.

- **Implement the ability to simulate different scenarios based on predictive modeling approaches.** Only 33% of Best-in-Class companies have the ability to scenarios based on predictive modeling approaches. Also only 3% of Best-in-Class companies indicate that their predictive modeling solutions meet all their current and future anticipated needs. These data points indicate the need for Best-in-Class companies to perform simulation on top of their network models based on various scenarios. Traditional optimization solutions model the problem as a series of planning buckets on which constraints are imposed. The solution that is derived out of the optimization process really represents the boundary conditions for each time bucket – for instance the inventory levels at end of month 1, and end of month 2. The optimization software cannot tell the user what the inventory levels are in the middle of any month. On the other hand, discrete event simulation software has a true definition of time. Time is modeled as it should be – namely a continuum. The system is able to identify what the state is at any point of time within the planning horizon.
We have seen in Chapter three the specific recommendations for actions by Best-in-Class, Industry Average and Laggard companies. In addition to these, the following insight provides three key priorities that Chief Supply Chain Officers need to have in terms of supply chain planning.

### Aberdeen Insights — Strategic Supply Chain Planning: 3 Key Priorities of the Chief Supply Chain Officer

The following are the three key priorities that CSCO’s should have in terms of supply chain planning:

- **Supply-demand-finance balancing is critical.** Even though demand forecasting is a key area of implementation plan for companies in this survey (46%), the respondents have expressed intent to invest time and effort towards constrained supply chain planning (49%), ability to simulate different scenarios based on predictive modeling approaches (50%) and the ability to design risk management into the system (42%).

- **Outsourcing is creating new supply chain dynamics - time and speed are critical.** Thirty-seven percent (37%) of respondents indicate that they are making major updates to forecast at a frequency less than a month and 80% indicate they are making major updates to forecast at a frequency less than or equal to a month. Forty-seven percent (47%) of respondents indicate that they are making major updates to supply plans at a frequency less than a month and 77% of respondents indicate they are making major updates to supply plans at a frequency less than or equal to a month.

  The reason for the increased frequency of planning is due to the increase in uncertainty and lack of visibility due to outsourcing. Outsourcing results in an increase in variability and increased lead-times. In order to manage these variables, companies are trying to perform constant planning and re-planning.

- **Create a Chief Supply Chain officer or similar role.** Sixty-four percent (64%) of respondents indicate that they don’t have a Chief Supply Chain Officer role in their organization. These companies should reconsider their current thinking and explore adding a CSCO (or similar role) providing the strategic impetus that supply chain needs in the organization.
Appendix A: 
Research Methodology

Between July-August 2010, Aberdeen examined the use, the experiences, and the intentions of more than 215 enterprises using Supply Chain Planning solutions in a diverse set of enterprises. Aberdeen supplemented this online survey effort with interviews with select survey respondents, gathering additional information on Supply Chain Planning strategies, experiences, and results. Responding enterprises included the following:

- **Job title:** The research sample included respondents with the following job titles: CEO / President/CFO/CIO (8%); EVP / SVP / VP (19%); Director (24%); Manager (31%); Consultant (9%); Other (9).
- **Department / function:** The research sample included respondents from the following departments or functions: logistics/supply chain (52%); operations/procurement/purchasing/manufacturing (20%); senior management (8%); IT (6%); other (14%).
- **Organization Type:** Manufacturer (59%), Distributor (8%), Retailer (3%), Logistics Provider (8%), Others (22%)
- **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 the one category, thus the percentages will not equal 100%. Key demographics are:
  - Discrete (27%): Aerospace and Defense (5%), Automotive (7%), Industrial Equipment Manufacturing (7%), Industrial Product Manufacturing (8%)
  - Consumer (38%): Apparel (2%), Consumer Durable Goods (2%), Consumer Packaged Goods (10%), Consumer Electronics (3%), Wholesale/Distribution (5%), Food/Beverage (11%), Retail (5%)
  - Process (24%): Chemicals (6%), Metals and metal products/Mining/oil/gas/utilities (9%), Paper/lumber/timber (3%), Pharmaceutical manufacturing (6%)
  - High-tech/electronics (15%): Computer equipment and peripherals (3%), Health/medical/dental devices or services (4%); High-technology (4%); Telecommunication equipment/services (4%)
- **Geography:** The majority of respondents (55%) were from North America. Remaining respondents were from the Asia-Pacific region (16%), Europe (19%), South/central America (2%) and Middle East/Africa (8%)
- **Company size:** Forty-three percent (43%) of respondents were from large enterprises (annual revenues above US $1 billion); 41% were from midsize enterprises (annual revenues between $50 million and $1 billion); and 16% of respondents were from small businesses (annual revenues of $50 million or less).

Study Focus

Responding supply chain executives completed an online survey that included questions designed to determine the following:

- The degree to which Supply Chain Planning solutions are deployed in their retail operations and the financial implications of the technology
- The structure and effectiveness of existing Supply Chain Planning implementations
- Current and planned use of Supply Chain Planning to aid operational and promotional activities
- The benefits, if any, that have been derived from Supply Chain Planning initiatives

The study aimed to identify emerging best practices for Supply Chain Planning and to provide a framework by which readers could assess their own management capabilities.
• **Headcount**: Sixty percent (60%) of respondents were from large enterprises (headcount greater than 1,000 employees); 23% were from midsize enterprises (headcount between 100 and 999 employees); and 17% of respondents were from small businesses (headcount between 1 and 99 employees).

**Table 6: The PACE Framework Key**

<table>
<thead>
<tr>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:</td>
</tr>
<tr>
<td><strong>Pressures</strong> — external forces that impact an organization’s market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive)</td>
</tr>
<tr>
<td><strong>Actions</strong> — the strategic approaches that an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product/service strategy, target markets, financial strategy, go-to-market, and sales strategy)</td>
</tr>
<tr>
<td><strong>Capabilities</strong> — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products/services, ecosystem partners, financing)</td>
</tr>
<tr>
<td><strong>Enablers</strong> — the key functionality of technology solutions required to support the organization’s enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010

**Table 7: The Competitive Framework Key**

<table>
<thead>
<tr>
<th>Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Aberdeen Competitive Framework defines enterprises as falling into one of the following three levels of practices and performance:</td>
</tr>
<tr>
<td><strong>Best-in-Class (20%)</strong> — Practices that are the best currently being employed and are significantly superior to the Industry Average, and result in the top industry performance.</td>
</tr>
<tr>
<td><strong>Industry Average (50%)</strong> — Practices that represent the average or norm, and result in average industry performance.</td>
</tr>
<tr>
<td><strong>Laggards (30%)</strong> — Practices that are significantly behind the average of the industry, and result in below average performance.</td>
</tr>
</tbody>
</table>

In the following categories:

| **Process** — What is the scope of process standardization? What is the efficiency and effectiveness of this process? |
| **Organization** — How is your company currently organized to manage and optimize this particular process? |
| **Knowledge** — What visibility do you have into key data and intelligence required to manage this process? |
| **Technology** — What level of automation have you used to support this process? How is this automation integrated and aligned? |
| **Performance** — What do you measure? How frequently? What’s your actual performance? |

Source: Aberdeen Group, September 2010

**Table 8: The Relationship Between PACE and the Competitive Framework**

<table>
<thead>
<tr>
<th>PACE and the Competitive Framework – How They Interact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aberdeen research indicates that companies that identify the most influential pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance that a company achieves is strongly determined by the PACE choices that they make and how well they execute those decisions.</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, September 2010
Appendix B: Related Aberdeen Research

Related Aberdeen research that forms a companion or reference to this report includes:

- *Beyond Visibility: Driving Supply Chain Responsiveness*: September 2008
- *The Secret SaaS: On-Demand Supply Chain Management*: December 2008
- *Inventory Management: 3 Keys to Freeing Working Capital*: May 2009
- *2009 Supply Chain Summit: Managing Integrated Demand-Supply Networks*: May 2009

Information on these and any other Aberdeen publications can be found at [www.aberdeen.com](http://www.aberdeen.com).

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