Enabling Supply Chain Visibility and Collaboration in the Cloud

November 2010
Nari Viswanathan
Executive Summary

Aberdeen benchmarked the supply chain application priorities and strategies of over 150 enterprises in October and November of 2010. This benchmark report is a summary of the key findings of that survey - especially focusing on the role of cloud-based solutions (like Software as a Service (SaaS) and managed services) in enabling visibility and promoting collaboration within integrated demand-supply networks. SaaS has been proven to provide companies with a competitive advantage in areas that require multi-enterprise collaboration, like B2B integration and customer/supplier collaboration.

Best-in-Class Performance

Aberdeen measured the metrics that drive adoption and implementation success of software applications - SaaS in particular. Best-in-Class companies:

- Possessed a perfect order rate of 88% delivered to customer’s request
- Possessed a cash-to-cash conversion cycle of 22 days
- Experienced an order-to-delivery cycle time of 4 days
- Needed 18 days to on-board new trading partners who are not B2B / EDI enabled
- Needed 14 days to on-board new trading partners who are B2B / EDI enabled

Competitive Maturity Assessment

Survey results show that the firms enjoying Best-in-Class performance shared several common characteristics. In fact, Best-Class companies are:

- 1.8 times as likely as all other companies (including the Industry Average and Laggards combined) to have formalized procedures / timelines for measuring application ROI - companies utilizing SaaS for collaboration are actually more than twice as likely as all others to do the same
- 1.6 times as likely as all others to have the ability to measure the amount of time required to update an application to account for business process changes - companies utilizing SaaS for collaboration are 1.9 times as likely as all others to do the same

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 collaborate with customers
- Implement the ability to onboard trading partners quickly
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Chapter One: Benchmarking the Best-in-Class

Business Context
Aberdeen benchmarked the supply chain application priorities and strategies of over 150 enterprises in October and November of 2010. This benchmark report is a summary of the key findings of that survey especially focusing on the role of cloud-based solutions like Software as a Service (SaaS) and managed services in enabling visibility and promoting collaboration within integrated demand-supply networks. For a deeper discussion on integrated demand-supply networks, please refer to the March 2009 report - Integrated Demand-Supply Networks: Five Steps to Gaining Visibility and Control.

Supply chain complexity is rising due, in large part, to globalization. For the supply chain professional, this means working with more global suppliers, reaching out to more global customers, and dealing with truly global competitors - a top business pressure among survey respondents. In today’s cost-constrained business climate, companies are continuing their journey towards outsourced supply chains. In such a process outsourcing-intensive environment, it has become difficult for companies to stay informed and in control of every stage of their supply chains, as the responsibility has been spread throughout the network. This is why the lack of executive visibility to the end-to-end supply chain is top of mind for executives (Figure 1).

Figure 1: Top Pressures Forcing Companies to Supply Chain Applications

<table>
<thead>
<tr>
<th>Pressures</th>
<th>Percent of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased supply chain complexity</td>
<td>48%</td>
</tr>
<tr>
<td>Lack of executive visibility to the end-to-end supply chain process</td>
<td>34%</td>
</tr>
<tr>
<td>Rising customer service requirements</td>
<td>31%</td>
</tr>
<tr>
<td>Rising logistics costs</td>
<td>20%</td>
</tr>
<tr>
<td>Increased supply chain risk exposure</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, November 2010

Supply processes can be divided into enterprise centric and multi-enterprise centric processes. Examples of enterprise centric processes include: demand management, transportation management, sales and operations planning, and network design. Examples of multi-enterprise processes include: B2B connectivity, supplier collaboration, and customer collaboration. The business challenges, identified above, result in companies trying to improve both enterprise centric and multi-enterprise centric processes. In the next

Fast Facts

✓ Forty-eight (48%) percent of companies indicate that increased supply chain complexity is a top pressure

✓ Fifty-one (51%) percent of companies indicate that redesigning SCM processes to reduce solution complexity and requirements is their top strategic action

Definitions

Cloud supply chain solutions (or on-demand solutions), for the purpose of this report, include the following approaches:

✓ where the hardware and application is hosted at a third party location and the software instance is used by only 1 customer and the user interface is accessed through the Internet (single tenant SaaS)

✓ where the hardware and application is hosted at a third party location and the software instance is used by multiple customers and the user interface is accessed through the Internet (multi tenant SaaS)

✓ where the hardware and application is hosted at a third party location and the software instance is used by multiple customers and the user interface is accessed through the Internet (multi tenant SaaS), plus the process also is executed at a third party location (managed services)
section, we will identify how Best-in-Class survey respondents have addressed these pressures in detail, and have achieved higher performance success within key operational metrics. Based on these Best-in-Class metrics, we will identify the key characteristics of how these companies improve their processes using technology.

**The Maturity Class Framework**

Aberdeen measured the operational metrics which represent successful supply chain performance. Aberdeen has used the following metrics to determine Best-in-Class, Industry Average and Laggard performers in this study:

- **Customer service** - percentage of perfect orders delivered to customers (complete and on-time)
- **Cash-to-cash cycle** - from the time a supplier is paid to the time cash is collected from a customer
- **Order-to-delivery cycle time** - from the time a customer order is taken to the time product is delivered to a customer
- **Time taken to on-board new trading partners who are not B2B / EDI enabled**
- **Time taken to on-board new trading partners who are B2B / EDI enabled**

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>
</table>
| **Best-in-Class: Top 20% of aggregate performance scorers** | ▪ Possessed a perfect order rate of 88% delivered to customer’s request  
▪ Possessed a cash-to-cash conversion cycle of 22 days  
▪ Experienced an order-to-delivery cycle time of 4 days  
▪ Needed 18 days to on-board new trading partners who are not B2B / EDI enabled  
▪ Needed 14 days to on-board new trading partners who are B2B / EDI enabled |
| **Industry Average: Middle 50% of aggregate performance scorers** | ▪ Possessed a perfect order rate of 86% delivered to customer’s request  
▪ Possessed a cash-to-cash conversion cycle of 47 days  
▪ Experienced an order-to-delivery cycle time of 28 days  
▪ Needed 47 days to on-board new trading partners who are not B2B / EDI enabled  
▪ Needed 37 days to on-board new trading partners who are B2B / EDI enabled |

“Supply chain management is viewed as a core competence that is best done internally. Neither managed services nor on-demand solutions are a consideration.”

~ CIO of IT at Large Computer Equipment Manufacturer

“As part of supply chain strategy, we have implemented an ERP backbone and now are solving the missing pieces that exist in our IT plan. On-Demand solutions are a great way for us to experiment with different approaches.”

~ VP of Supply Chain, Large Electronics Manufacturer
### Definition of Maturity Class

<table>
<thead>
<tr>
<th>Laggard: Bottom 30% of aggregate performance scorers</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Possessed a perfect order rate of 81% delivered to customer’s request</td>
</tr>
<tr>
<td>- Possessed a cash-to-cash conversion cycle of 55 days</td>
</tr>
<tr>
<td>- Experienced an order-to-delivery cycle time of 56 days</td>
</tr>
<tr>
<td>- Needed 109 days to on-board new trading partners who are not B2B / EDI enabled</td>
</tr>
<tr>
<td>- Needed 71 days to on-board new trading partners who are B2B / EDI enabled</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, November 2010

### The Best-in-Class PACE Model

Table 2 indicates the key pressures, actions, capabilities, and enablers that are being prioritized by Best-in-Class companies for their supply chain application investments. This will help identify the key capabilities that are being considered as part of their supply chain initiatives.

### 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>Increased supply chain complexity</td>
<td>Deploy SCM tools with short implementation times and rapid payback</td>
<td>SLAs with clear deployment, upgrade, and performance metrics, penalties and incentives</td>
<td>SaaS SCM solutions</td>
</tr>
<tr>
<td></td>
<td>Redesign SCM processes to reduce solution complexity and requirements</td>
<td>Clear process definitions between SaaS based and on-premises solutions</td>
<td>ASP hosted on-site and remote SCM solutions</td>
</tr>
<tr>
<td></td>
<td>Outsource select SCM processes</td>
<td>Ability to on-board new trading partners (within months) quickly</td>
<td>BPO SCM solutions (managed services)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to support unique business processes for selective product categories, customers or channels</td>
<td>SCM license and install on-premises solutions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Professional services partners</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SCM Integration providers (EDI/VAN)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hosted SCM content providers</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ERP software</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, November 2010

### What Actions are Companies Taking?

It is important to identify the top strategic actions that enterprises are taking in response to the pressures identified in Figure 1. The top two strategic actions are:

- **Companies are redesigning Supply Chain Management (SCM) processes to reduce non-value-added complexity and requirements in order to improve supply chain application performance (51%).** The intent to reduce the complexity is in conflict with the reality of their business processes which are becoming more externalized and complex. What does it
mean for supply chain applications? They need to provide both the ability to solve the end-to-end supply chain challenges as well as provide a simple and non-complex integration and process architecture. Take the example of a Director of Supply Chain who notes, "Many large enterprises are beginning to change their thinking about supply chain strategy from linking processes across multiple silo enterprise applications and aggregated data warehouses to an integrated business network model. This model is characterized as evolving, aligned to supply chain segmentation strategies, private clouds and public clouds interoperability, and real time sense and respond."

- **Furthermore, 34% of companies indicated they are taking strategic action to establish clear success metrics to support the continuous improvement process.** This is more of a process and performance issue as compared to technology. Companies are currently hesitating to embark on large capital projects even though they have high cash reserves (on average) due to cost cutting in 2008 and 2009.

- **Companies are looking to deploy SCM tools with short implementation times and rapid payback.** There is no silver bullet for enabling short implementation times and rapid payback. Our current survey indicates that implementing cloud-based supply chain solutions (on-demand) for the sake of it does not necessarily yield the results. It is more important to determine where to implement it which makes the difference.

> "Supply Chain visibility is our biggest challenge. We have a system built in house from the ground up, but each customer’s supply chain has different needs and requirements. Our customer base is a mix of best in class companies all the way down to first time international shippers. Our IT system as it stands now is very complex and capable of servicing these accounts; however during this development the system has become too complex. Instead of being able to update the entire visibility alerts and updates, the user will have to recreate based on different rules and standards by customer type. Another issue we are having with visibility is getting the technology and permission to get live updates from our logistics partners. Our partners, steamship lines, rail lines, airlines, are the life blood of the services we sell. Many times these suppliers fail to have open collaboration with our company due to limited liabilities and small fish in big pond ideas."

~ Manager, 3PL

Moreover there are multiple areas within supply chain that need to be automated e.g., planning, supply chain execution (transportation and warehousing), and collaboration. Each of these areas will require a different approach to achieve the above strategic action.
We will explore the specific supply chain areas and where to implement on-demand in Chapter 2.

**Aberdeen Insights — Factors Driving Use of On-Demand Solutions**

Figure 3 indicates the top factors identified by companies that are already adopting or are interested in adopting cloud based supply chain solutions (on-demand). The top factor is a given since the subscription model results in a reduced up-front cost. However, the second and third considerations are more critical to look at. Forty-two percent (42%) of respondents consider the availability of pre-configured templates and existence of a trading partner network to be critical.

**Figure 3: Factors Driving Use of On-Demand Solutions**

- Reduced up-front cost: 54%
- Faster implementation time due to pre-configured templates and / or existing trading partner network: 42%
- Improved ability to collaborate with trading partners: 27%
- On-demand applications offer greater features and functionality that we require: 15%
- Reduced resources required to maintain the application: 15%
- Reduced resources required to implement the application: 15%

Percent of Respondents n = 149

Source: Aberdeen Group, November 2010

Is there a need for a trading partner network for an enterprise centric process such as S&OP? The answer is most likely "no" in the beginning since companies will likely look to solve their internal S&OP process first. Are there pre-configured templates available from the solution provider? There are only a handful of SaaS based solution providers in the planning space anyway and their answer most likely is going to be "no" given the relative immaturity of these solutions. On-premise solutions have a better chance of having pre-configured templates available due to their long history and heritage in solving planning problems.

continued
<table>
<thead>
<tr>
<th>Aberdeen Insights — Factors Driving Use of On-Demand Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the other hand, if you look at this matter from a process perspective like vendor managed inventory, forecast collaboration, and transportation management, then the answer to the question whether or not there is a need for a trading partner network for this process is most decidedly &quot;yes.&quot; There is definitely a need to interact with shippers, carriers, suppliers etc. The availability of pre-configured templates is crucial. Irrespective of whether a solution is SaaS or not, the solution provider with the largest number of customers is going to have a better chance of having pre-configured templates.</td>
</tr>
</tbody>
</table>
Chapter Two: Benchmarking Requirements for Success

The selection of on-demand supply chain solutions and successful integration and implementation can result in significant benefits as exemplified by the following case study.

**Case Study — Bond Auto Parts Adopts Super Spec to Improve Purchase Order to Payment process**

Bond Auto parts is a family owned automotive aftermarket retailer as well as wholesaler. They have over 40 locations for their retail stores including four independent jobbers. They adopted the Super Spec based on a specific challenge that they faced – namely the long, manual and iterative process of processing orders to their vendors, and reconciling what was shipped and invoiced. In addition, the data that Bond Auto parts sent to their vendors often did not match the data that vendors had on product item numbers as well as other attributes resulting in further manual processing.

The Super Spec is a specification for electronic business documents that allows thousands of business partners to connect with a single format. When vendors choose to use the Super Spec, each customer sends and receives their data in a consistent, predictable format, which means Bond Auto parts can create one set of EDI maps and send all orders to the vendors efficiently. This approach applies to the outbound documents— the purchase order (850), as well as the inbound documents – the acknowledgement (997), Advance Ship Notice (ASN/856) and the electronic invoice (810)—the work is done once with the Super Spec and additional vendors just need to be added to the process.

The Director of Purchasing at Bond Auto Parts, Craig Bond, says “Getting the process fast, consistent and automated is the most important goal of our business. Having the super spec implemented is the first step. Further down the line when we implement the Virtual Inventory Cloud (VIC), we expect to see improved visibility of where to source products for non-stock/special orders as well as more accurate freight costs. VIC will help us to further capitalize on the links we have already built with vendors through the Super Spec.”

**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 4) serve as a guideline for best practices, and correlate directly with Best-in-Class performance across the key metrics.

**Table 3: 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</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to electronically collaborate with a network of suppliers</td>
<td>70%</td>
<td>34%</td>
<td>26%</td>
</tr>
<tr>
<td>Ability to on-board new trading partners quickly (i.e., within months)</td>
<td>68%</td>
<td>46%</td>
<td>30%</td>
</tr>
<tr>
<td>Ability to electronically collaborate with a network of customers</td>
<td>67%</td>
<td>38%</td>
<td>26%</td>
</tr>
<tr>
<td>Understanding of SCM partner collaboration requirements and solutions</td>
<td>63%</td>
<td>24%</td>
<td>19%</td>
</tr>
<tr>
<td>Ability to electronically collaborate with a network of carriers</td>
<td>52%</td>
<td>35%</td>
<td>16%</td>
</tr>
<tr>
<td>Comprehensive SLAs (i.e., clear deployment, upgrade, and performance metrics, penalties, and incentives)</td>
<td>50%</td>
<td>39%</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Organizational</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply chain organization’s commitment to support the outsourcing of an application</td>
<td>42%</td>
<td>28%</td>
<td>7%</td>
</tr>
<tr>
<td>Supply chain organization’s ability to support SaaS based solutions</td>
<td>30%</td>
<td>25%</td>
<td>10%</td>
</tr>
<tr>
<td>CIO supporting the supply chain organization in adopting SaaS-based solutions</td>
<td>30%</td>
<td>25%</td>
<td>9%</td>
</tr>
<tr>
<td><strong>Data Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear understanding of data requirements to support on-premise solutions</td>
<td>70%</td>
<td>46%</td>
<td>29%</td>
</tr>
<tr>
<td>Integration requirements with existing solutions are understood and provided</td>
<td>62%</td>
<td>51%</td>
<td>26%</td>
</tr>
<tr>
<td>Organizational support for a proof of concept approach to new SCM software deployment</td>
<td>54%</td>
<td>32%</td>
<td>23%</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formalized procedures / timelines for measuring application Return on Investment</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Enabling Supply Chain Visibility and Collaboration in the Cloud

<table>
<thead>
<tr>
<th>Management</th>
<th>Best-in-Class</th>
<th>Average</th>
<th>Laggards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to measure the amount of time required to update an application to account for business process changes</td>
<td>33%</td>
<td>27%</td>
<td>13%</td>
</tr>
</tbody>
</table>

| Technology | | |
|------------| | |
| B2B Connectivity (EDI, XML, etc) | 79% | 62% | 42% |
| Supply Chain Execution (WMS, TMS etc) | 46% | 41% | 26% |
| Supplier / Customer Collaboration (S&OP, VMI etc) | 54% | 30% | 16% |
| Supply Chain Planning and Manufacturing (Network Design, Inventory Optimization, Replenishment Planning, etc.) | 50% | 32% | 16% |

Source: Aberdeen Group, November 2010

### Capabilities and Enablers

Aberdeen’s research takes an objective view of business processes and technology enablers through the lens of "hard data" and helps supply chain and IT professionals to make an informed decision. The focus of the current research is on different types of supply chain applications with a specific focus on Cloud based applications (Software as a Service). The following section looks at the Process, Organization, Data and Performance Management Capabilities that Best-in-Class companies have implemented. In addition in the Technology Enabler section, we will explore the role of SaaS based solutions in enabling visibility and collaboration.

### Process

Best-in-Class companies have experienced significant improvement over Industry Average and Laggard companies when it comes to collaborative processes (shown in Table 3). However if we filter the results based on those companies that have implemented SaaS solutions for collaboration (Figure 4), we see that these subset of companies have gained process capability maturity better than even the Best-in-Class companies.

These companies are able to more effectively collaborate with customers. This ensures that they will continue moving towards integrated demand-supply networks. This trend is bolstered by the rising importance of this process for succeeding in the multi-enterprise supply chain, especially in difficult economic times. Integrating trading partner data is not an easy task - it requires a foundation of electronic connectivity with the partners. Early adopters of visibility and collaboration technologies have been able to use these systems to gather and manage the supply chain partner data.

“We have historically required that all of our data is stored on-site, which to a large degree requires on-site software, in our case managed by an outsourced vendor on-site. There are currently discussions under way to reconsider this concept. I do not sense a groundswell of support for change. I am philosophically opposed to managed services for supply chain activities, primarily because of the difficulties of interacting with outsourced staff as well as the idea of managing a "contract" as opposed to managing people.”

~ Manager, Large Medical Device Manufacturer
We see very similar results when it comes to companies adopting SaaS for supply chain execution (Figure 5). In the logistics network, it is critical to make informed and early responses to impending disruptions. In addition, tracking costs as they accumulate through collaboration with shippers and carriers can pinpoint an area of potential savings. This allows companies to avoid an unnecessary process step or, for example, avoid expedited freight charges through better planning.

"SaaS has not been considered due to the critical nature of these solutions and the risk associated with communications link reliability does not make it an interesting option. As soon as the risk-cost-availability for the communications link is not a concern this could be an option."

~ Internal IT Consultant, Large Industrial Manufacturer
Organization

The organizational capability to support SaaS is the area of maximum opportunity for companies to improve on. Best-in-Class companies demonstrate greater organizational capabilities. There are major areas of improvement: the supply chain organization’s commitment to support the outsourcing of an application, the supply chain organization’s ability to support SaaS solutions and the CIO’s support for SaaS supply chain solutions.

SaaS is still thought of as an experimental area and there are concerns that remain in the minds of respondents. Figure 6 shows the concerns that companies have regarding SaaS. Best-in-Class companies are more apt to be concerned with integration of SaaS solutions with the rest of the internal systems and about the lack of ability to customize solutions. All others (the Industry Average and Laggard companies combined) are concerned about data security and feature/functionality.

Figure 6: Concerns of Best-in-Class Companies

<table>
<thead>
<tr>
<th>Concern</th>
<th>Best-in-Class</th>
<th>Industry Average</th>
<th>All Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data security concerns</td>
<td>25%</td>
<td>35%</td>
<td>46%</td>
</tr>
<tr>
<td>Fear of application not being available</td>
<td>17%</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>(unanticipated downtime)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On-demand application does not offer the</td>
<td>17%</td>
<td>23%</td>
<td>25%</td>
</tr>
<tr>
<td>features / functionality we require</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived lowered ability to customize</td>
<td>10%</td>
<td>13%</td>
<td>25%</td>
</tr>
<tr>
<td>solution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concerns with integrating on-demand solution</td>
<td>31%</td>
<td>25%</td>
<td>31%</td>
</tr>
<tr>
<td>with internal systems</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Percent of Respondents, n = 149

Source: Aberdeen Group, November 2010

Performance Management

In addition, Best-in-Class companies exhibit an enhanced level of knowledge management abilities in the following areas:

- 1.8 times as likely as all others to have formalized procedures / timelines for measuring application ROI. Companies utilizing SaaS for collaboration are actually 2.1 times as likely as all others to do the same.
- 1.6 times as likely as all others to have the ability to measure the amount of time required to update an application to account for

“The SAAS tool we use for visibility and performance metrics is effective in managing volumes but not costs due to the complexity and amount of manual maintenance required to get information into it. Managed services such as 3PL’s (truck brokers, freight forwarders) are the only way we are competitive with our peers and can provide the depth and breadth of services needed to satisfy our customers.”

~ Director of Supply Chain, Large CPG Manufacturer
business process changes. Companies utilizing SaaS for collaboration are 1.9 times as likely as all others to do the same.

In addition, companies utilizing SaaS for collaboration are three-times more likely than Best-in-Class companies to have incentives in place for rewarding individuals based on metrics tracked in the system. When a SaaS based solution is implemented for enabling a multi-enterprise process, it is crucial to have accountability established since there are so many players involved. These solutions also have pre-existing dashboards in place for capturing system metrics and thus provide easier visibility to the management team for tracking and managing incentives.

**Technology**

Before we look at the specific role of SaaS in enabling visibility and collaboration, we should identify what the technology requirements are for enabling visibility and collaboration in general. Best-in-Class companies are evolving towards an integrated demand-supply network through the following three-tiered approach (Aberdeen Report, *Integrated Demand-Supply Networks: Five Steps to Gaining Visibility and Control*, March 2009) (Figure 7).

**Figure 7: Building Integrated Demand-Supply Networks**

![Figure 7: Building Integrated Demand-Supply Networks](source: Aberdeen Group, November 2010)

**B2B Integration**

Enabling B2B integration first within the enterprise and then into the extended enterprise is the first essential step that needs to be taken. The extension of supply chains on both the sell side and the buy side has resulted in a corresponding increase in the number of trading partners. It is
not possible to rely only on EDI to enable connectivity between trading partners due to the costs and the lack of technology maturity at the trading partners. Companies need to use multiple methods to establish electronic communication across their full business partner community. Examples of these enablers are data-entry portal or webform, EDI/XML translation software, enterprise application integration or B2B integration and value-added networks. Once the enablers for electronic communication are put in place, more advanced processes dealing with forecast collaboration, order management, supply chain event management, etc. can be deployed.

However, perhaps the most important benefit of trading partner connectivity is that it establishes a pipeline for process collaboration. Once a pipeline is created for basic purchasing transactions, it can be used to share critical planning and status information. This information can include sales activity, forecasts, inventory positions, and work-in-process and shipment statuses. Moreover, this information can be shared daily or weekly (or even in real time for certain processes), versus monthly or quarterly, creating leaner and more synchronized processes.

**Data Management**

In a multi-enterprise supply chain environment data quality is a significant issue for organizations. Only 15% of respondents indicated having the ability to get timely access to supply chain partners’ data needed for analysis / decision making, when this information access did not need further improvement (46% reported having such access but indicated it needed to be improved). One of the top two highest barriers improved partner collaboration (reported by 55% of respondents) is "late, missing and inaccurate data from partners."

Hence the technology solutions that are adopted in a multi-enterprise supply chain should be strongly focused on data management.

**Process Collaboration**

Companies that have moved to process collaboration report that they have been able to speed up their planning and execution cycles and can reshape and react to demand much faster than before. By exchanging richer information more quickly with trading partners, enterprise hubs can make more accurate plans and better midcourse corrections.

For example, companies with dealer and other distribution partner networks report being able to execute micro-market promotion and pricing strategies to maximize the profit life cycle of their products.

Similarly, retailers and manufacturers that rely on supplier excellence indicate that they have been able to speed up order cycle times, improve the percentage of “perfect orders” they receive, and minimize inventory shortages and stock outs.
There are plenty of challenges to improving supply chain collaboration across complex supply networks, but overcoming them is not an option, but instead a required stepping stone to the long-term effectiveness of the supply chain organization and the company as a whole.

In the area of supplier/customer collaboration, the primary challenge is the lack of a pre-defined process for organizations. Every organization believes that their approach for collaborating with their suppliers and customers is unique. However, the usage of SaaS is gaining momentum in this space (Table 4 and Table 5). Collaboration with trading partners is the area where there is a maximum current usage and planned usage of on-demand applications (on an average). The reason for this is again the advantage posed by a business network for enabling rapid integration with trading partners.

For example, 41% of Best-in-Class companies are planning to collaborate more effectively, using SaaS solutions to enable Vendor Management Inventory (VMI) and forecast collaboration. With a SaaS VMI environment, real-time information sharing enables the communication of current replenishment needs to vendors, reducing the bull whip effect and improving lead times.

**Table 4: Current Architecture for Collaboration Functions**

<table>
<thead>
<tr>
<th>Currently Using Software</th>
<th>On-demand application</th>
<th>Traditional application</th>
<th>Legacy application</th>
<th>Managed manually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor managed inventory</td>
<td>24%</td>
<td>32%</td>
<td>29%</td>
<td>15%</td>
</tr>
<tr>
<td>Forecast collaboration</td>
<td>23%</td>
<td>40%</td>
<td>30%</td>
<td>8%</td>
</tr>
<tr>
<td>Inventory collaboration</td>
<td>24%</td>
<td>27%</td>
<td>43%</td>
<td>5%</td>
</tr>
<tr>
<td>Data synchronization (e.g., UCCnet)</td>
<td>19%</td>
<td>39%</td>
<td>33%</td>
<td>8%</td>
</tr>
<tr>
<td>Invoicing and payment</td>
<td>10%</td>
<td>60%</td>
<td>21%</td>
<td>10%</td>
</tr>
<tr>
<td>Trade promotion management</td>
<td>6%</td>
<td>36%</td>
<td>27%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, November 2010
Table 5: Planned Architecture for Collaboration Functions

<table>
<thead>
<tr>
<th>Planning to Use Software</th>
<th>On-demand application</th>
<th>Traditional application</th>
<th>Legacy application</th>
<th>Managed manually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor managed inventory</td>
<td>41%</td>
<td>29%</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Forecast collaboration</td>
<td>37%</td>
<td>34%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Inventory collaboration</td>
<td>31%</td>
<td>34%</td>
<td>23%</td>
<td>11%</td>
</tr>
<tr>
<td>Data synchronization (e.g., UCCnet)</td>
<td>38%</td>
<td>29%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Invoicing and payment</td>
<td>36%</td>
<td>42%</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Trade promotion management</td>
<td>26%</td>
<td>32%</td>
<td>21%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Source: Aberdeen Group, November 2010

Case Study — Electrolux Enables Demand Network Integration through an Innovative and Cost Effective SaaS Solution

Electrolux Home Products Pty. Ltd. is the white goods manufacturer and supplier in Australia for Electrolux. They carry over 148,000 line items of spare parts and these are sold to 43 distributors across Australia. They have a large number of distributors that are involved in bringing the spare parts to various end users and B2B organizations.

Electrolux had a situation where the automation with large distributors was incorporated but B2B buying with smaller distributors was not automated. They had to rely on manual processes like phone, fax, and email to pass information back and forth (including order information). These manual processes resulted in an increased number of returns, increased product price, lack of availability of information for phone inquiries, etc. Another challenge that Electrolux faced was that too many manual steps were required to integrate its dealer and distributor network into its supply chain, leading to inefficiencies and increased costs.

In order to resolve these challenges, Electrolux committed to piloting and installing a SaaS solution. In 2006 Electrolux concluded that this solution would significantly reduce the amount of product price and availability phone enquiries, and ordering via phone, fax and email.

The following is the workflow that Electrolux enabled: The distributor signs up to the SaaS based service and downloads the seller-side product and installs it. This webservice is used to integrate to the distributor’s back office systems. Then the distributor can start making purchases through the system. On the Electrolux side, authorization set up can be done to ensure that the buyers can only access the information authorized for them. This approach of connectivity of buyers and sellers is similar to how a social networking solution is used.

Electrolux was able to reduce transaction processing costs while delivering increased functionality to their distributors. They were able to have a 20% reduction in product returns. They were able to improve the visibility of inventory resulting in better planning and forecasting. Another significant advantage for Electrolux was the ability to implement the solution within three days. This ensured that distributors were able to onboard into the solution quickly and continue using it.
Aberdeen Insights — Managed Services - Bringing People to the Cloud

Improvements in cloud computing related technologies are driving entry costs lower, however the end user base is slowly warming up to this deployment approach within the supply chain realm. For example if we take the percentage of respondents who indicated high interest for managed services the following are the top three areas:

- Warehouse management - 46%
- Trading partner on-boarding - 40%
- International transportation management 40%

When asked which areas of their supply chain are companies most likely to outsource completely to a managed services approach, the following were the results:

- B2B connectivity - 53%
- Supply chain execution - 43%
- Supplier / customer collaboration - 42%
- Supply chain planning - 15%

This validates further the findings from Chapter One and Chapter Two that SaaS based approaches work best when collaborative processes are involved. Interestingly, we see that the lowest area of interest for managed services is supply chain planning.
Chapter Three: Required Actions

Whether a company is trying to move its performance in supply chain 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**

- **Adopt a proof-of-concept culture.** Only 23% of Laggards have organizational support for a proof-of-concept approach to new SCM software development versus 58% of Best-in-Class companies. In addition, Laggards are hesitant in this regard due to a lack of education in the areas where SaaS solutions excel and where they do not. They are also not educated on the core differences in the implementation methodology of SaaS and on-premise solutions resulting in unmet expectations. They don’t realize that software implementations do not always have to be big-bang projects and can be divided into smaller phases.

- **Get the support of the CIO.** Only 9% of Laggards have CIO support for on-demand supply chain solution adoption. This results in a situation where even if Laggards launch into a SaaS implementation, they are predisposing themselves to failure due to a lack of commitment from the IT organization. The only way to resolve this situation is to create a win-win situation for IT and line of business. IT is typically threatened by SaaS because of loss of control. IT should be given control of the project and the relationship with the SaaS vendor so that they will have greater accountability and ownership. In the current economy where credit is hard to come by, the advantages of a SaaS model provides an equal footing for line-of-business to negotiate with IT.

- **Implement the ability to collaborate with customers.** Only 26% of Laggards have the ability to electronically collaborate with a network of customers versus 67% of Best-in-Class companies. Companies should segment their customer base according to revenue and identify a list of top customers with whom to set up a trading community network. Key process areas should be identified such as order management collaboration, inventory management collaboration and forecast collaboration after which these collaborative processes should be implemented.

**Industry Average Steps to Success**

- **Turn IT organization into supporters.** Only 25% of Industry Average companies have CIO organization support for on-demand supply chain solution adoption. Industry Average companies need to ensure that all parties agree on the chosen implementation path.
Industry Average companies need to collaborate closely with IT to drive awareness and enthusiasm for the project.

- **Implement ability to onboard trading partners quickly.** Forty-six percent (46%) of Industry Average companies have the ability to on-board new trading partners quickly as compared to 68% of Best-in-Class companies. Aberdeen research (B2B Integration and Collaboration: Trading Community Enablement for the Multi-Enterprise Supply Chain, March 2010) reveals that companies today are two-times more likely to on-board a critical trading partner as compared to a non-critical trading partner. The approach of focusing on the key suppliers may have worked in the past but in today’s highly distributed demand-supply network environment, this approach is not viable. In fact, 49% of respondents indicate that for every week that a new trading partner is not fully enabled in the supply chain, there is a significant operational impact on the business.

**Best-in-Class Steps to Success**

- **Implement easy-to-adapt software for SCM.** Only 42% of Best-in-Class companies have the ability to quickly define, change or modify business processes in their software. The ability to respond to business changes in the marketplace by modifying existing business processes is critical. There are both process and technology implications associated with this. From a process perspective, instituting performance metrics that consider multi-enterprise supply chain issues is critical. For current on-demand SCM users, continue to ask vendors to provide more flexibility. The ability to support business requirements flexibly and rapidly is the number one requirement for SaaS providers from Best-in-Class companies.

- **Adopt a hybrid deployment approach.** Only 42% of Best-in-Class companies indicate that their supply chain organizations have commitment towards outsourcing of an application. Specifically only 30% of Best-in-Class companies indicate that their supply chain organization supports SaaS based solutions. This indicates that the resistance towards the adoption of SaaS solutions is still the case across the marketplace, as identified in Chapter Two, SaaS is a really useful approach in cases where external collaboration is required and not effective for internal processes.
One way to accomplish visibility within a multi-enterprise logistics network is to leverage SaaS or the broader ‘cloud’ based technology platforms or extensions. The following are key points of consideration when it comes to cloud based technologies (other than the IT related considerations):

- **Internal and external business collaboration.** In an expanding cross-channel and multi-enterprise retail supply chain, cloud-based IT services are being considered as a key component for simplifying internal and external business collaboration, according to 54% of retailers. Internal business collaboration refers to the tools related to coordinated IT needs, seamless data delivery and unified interface requirements of varied retail departments including supply chain, inventory, distribution, finance, and store operations. Whereas, external collaboration alludes to the tools related to the coordinated data linkages, business information sharing, and process unification efforts between retailers, suppliers, and other intermediaries such as distributors,

- **Multi-enterprise information model.** There is a need for establishing a single object that can be reused across multiple scenarios. In the retail supply chain example, if a manufacturer sends a shipment to retailer, it should be modeled only once irrespective of whether it is at a regional DC, on an ocean carrier or at a customer’s store. Cloud computing allows the establishment of this type of information model. However, the challenge is whether the various parties in an industry can agree on a common information and frequently bidirectional information exchange model. Only on acceptance of a secure and sustainable information model will there be the possibility of a public cloud.

- **Trading community.** The trading community has and always will make the difference between cloud being a technology "nicety" versus providing actual business benefits. Recently, many supply chain collaboration solution providers have begun adding enhanced inter-personal collaboration and community management tools to their platforms, allowing people to exchange messages, files, store logs of their interactions and create user profiles reflecting their roles in their companies. These solutions leverage the pre-connected networks of suppliers, customers and other partners. The primary aim is to improve routine process collaboration and exception management / issue resolution for the participating platform users.
Appendix A: Research Methodology

Between October and November 2010, Aberdeen examined the use, the experiences, and the intentions of more than 150 enterprises using or planning to use SaaS applications or traditional on-premise applications in a range of supply chain functions including customer/supplier collaboration, supply chain execution and b2b integration. There was also a segment on managed services in the survey. Aberdeen supplemented this online survey effort with interviews with select survey respondents, gathering additional information on SaaS strategies, experiences, and results. Responding enterprises included the following:

- **Job title:** The research sample included respondents with the following job titles: C-Level executive (CEO, CFO, CTO, CIO) (13%); VP/General Manager (15%); Director (14%); Manager (35%); staff (5%); other titles (17%).

- **Functional responsibility:** The research sample included respondents with the following functional areas of responsibility: logistics/supply chain (38%); operations/procurement (18%); IT/BPM (15%); sales and marketing (15%); corporate management (7%); other areas (7%).

- **Industry:** The research sample included respondents from the four major industry segments - Process, Consumer, Discrete and High-tech/electronics. Key demographics are:
  - Discrete (21%): Aerospace/Defense/Automotive (7%), Automotive/Other Vehicles (5%), Industrial Product Manufacturing/Industrial Equipment Manufacturing (9%)
  - Consumer (32%): Apparel (3%), Consumer Durable Goods/Consumer Electronics (4%), Consumer Packaged Goods (13%), Food/Beverage (3%), Retail (6%), Wholesale/Distribution (3%)
  - Process (18%): Chemicals (2%), Metals and metal products/Mining/oil/gas (10%), Paper/lumber/timber (2%), Pharmaceutical manufacturing (4%)
  - High-tech/electronics (12%): Health/medical/dental devices or services (5%); high-technology/Computer equipment and peripherals (4%), telecommunication equipment (3%)
  - Transportation/Logistics (10%)
  - Others (7%)

- **Company size:** Thirty-eight percent (38%) of respondents were from large enterprises (annual revenues above US $1 billion); 35% were from midsize enterprises (annual revenues between $50 million and $1 billion); and 27% of respondents were from small businesses (annual revenues of $50 million or less).

Options:
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, November 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, November 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, November 2010
Appendix B: Related Aberdeen Research

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

- **The On-Demand Tipping Point in Supply Chain Report**: March 2006
- **Process Collaboration in Multi-Enterprise Supply Chains**: August 2008
- **Multi-enterprise Manufacturing: The Role of Visibility and Collaboration in Driving Responsiveness**: July 2009
- **Integrated Demand-Supply Networks: Five Steps to Gaining Visibility and Control**: March 2009
- **The Secret SaaS: On-Demand Supply Chain Management**: December 2008
- **B2B Integration and Collaboration: Trading Community Enablement for the Multi-Enterprise Supply Chain**: March 2010

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

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