

Want a World-Class Supply Chain? Establish the Right Infrastructure

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Having the right supply chain infrastructure is critical to achieving faster cycle times, improved flexibility, and lower costs from your business networks.

The Supply Chain as a Competitive Weapon

Competitive advantage is shifting from internal operations efficiency to trading partner coordination and overall supply chain effectiveness. Developing a supply chain into a competitive weapon starts by establishing a strong foundation of connectivity, ensuring data quality and providing visibility. By synchronizing processes companies are improving customer service, lowering costs and reducing their inventory investment. Business leaders now need to carefully assess whether this infrastructure should be developed in-house or outsourced to a service provider.

Vertically integrated corporations are in decline and companies are racing to establish networks of trusted suppliers and service providers. In the new, networked world, inward-facing systems and processes need to support trading community synchronization. Supply chain systems have never been more important – corporations must deliver on the promise of new business models.

The next frontier of opportunity is locked in the extended supply chain; the key to success is effectively integrating, cleansing and channeling huge volumes of data from suppliers, service providers, and other partners to data-starved systems. This shift is happening fast, and early leaders are realizing best-in-class performance with higher revenue, faster cash-to-cash cycles, and lower costs.

Redefining Best-in-Class Supply Chain Performance

The performance improvement opportunity in the extended supply chain is significant and has been directly correlated to share-

holder value creation. Studies have shown that best-in-class supply chain practices can result in 30 percent better fill rates, 50 percent lower supply chain costs, 60 percent faster cash-to-cash cycles. This differential advantage lies in the extended supply chain:

- **Better Fill Rates.** Companies improve fill rates through better inventory and order visibility, both at rest and in-motion. With high quality, real-time information, the accuracy of an order promise improves and lost sales are minimized.
- **Lower Supply Chain Costs.** Logistics expenses can account for 10 to 20 percent of final product cost. Leading companies manage these costs by carefully selecting carriers and balancing service levels with need dates and aggregating loads. New visibility systems offer the ability to manage by exception and minimize premium freight costs by communicating accurate delivery times and creating accountability for the logistics and purchasing departments.
- **Faster Cash-to-Cash Cycles.** Increasing inventory turns drives cash-to-cash cycles down. Lowering inventory in-transit and better balancing supply-demand requires event management to reduce lead-time variability, and access to high-quality information feeds that can provide up-to-the-hour shipment to supply chain optimization systems.

Mastering the extended supply chain can have a significant impact on both the top-line and bottom-line; achieving revenue growth at

a lower delivered cost offers two powerful ingredients for shareholder value creation.

Few Harness the Potential The Extended Supply Chain Is Disconnected

Companies have tried to establish point-to-point integrations with their trading partners for the past 15 years using available EDI technology. The cost and complexity of such networks dictated focused investment: in many organizations only the largest 20 percent of suppliers and service providers would be integrated. For the supply chain, large gaps in information availability are not sufficient to support new international sourcing programs and high velocity customer fulfillment.

New approaches using XML are slowly starting to take hold. Various standards groups are trying to establish common processes and interconnection standards. IT capabilities, however, tend to lag in the broader trading community and leading companies are competing today with more sophisticated proprietary processes than a one-size-fits-all standard will likely support.

Limited Information and Visibility

The inability to connect and aggregate supply chain information from suppliers and transportation service providers creates large gaps in information. This causes daily operations to devolve to firefighting so time is spent manually aggregating and communicating status.

Lack of visibility to shipments ultimately results in lower fill rates and lost sales as the manual processes break down with rapid changes in demand. Unable to associate shipments to orders, the purchasing department may expedite shipments “just in case” which in turn increases premium freight costs.

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Lost sales, low fill rates and lack of visibility leads to higher inventory from over-ordering, inflated lead-time assumptions and higher supply chain variability. This can continue in a downward spiral if left unchecked, and in industries that have significant product obsolescence (high-tech and retail) the results can be disastrous.

Supply chain visibility and event management software can effectively coordinate supply chain processes and identify and resolve delivery bottlenecks, but only if a complete view is available, timely and accurate.

Enterprise Systems Are Starved for High-Quality Information

Increasingly, companies must access and leverage information that is collected outside the four walls. Without consistent access to supply chain information, enterprise systems do not operate optimally and hard dollar savings are increasingly difficult to quantify. Real-time, high-quality supply chain information can extend the value of enterprise systems.

- *Shipment ETAs to APS* – Balance supply and demand within the “frozen window” with availability of “inventory in motion” throughout the supply network
- *Inbound Shipments to WMS* – Manage receiving operations and identify cross-docking opportunities
- *Purchase Order ETAs to ERP* – Expedite replenishment if product is delayed
- *Accurate Delivery Dates to CRM and Customer Portals* – Improve customer satisfaction and lower cost of customer support through self-service
- *Supply Chain Transactions to Data Warehouse* – Extract and load high-quality supply chain information to existing data warehouse and business intelligence tool sets

The combination of complete, timely and accurate information can not only be leveraged to make good decisions, but can also feed enterprise systems to bridge the gap between assumptions and reality. Leveraging enterprise class information, however, requires a strong infrastructure.

Supply Chain Infrastructure Cost and Complexity Is Underestimated

Many software vendors are touting supply chain visibility and event management solutions, but like the enterprise systems that have come before, most do not address one fundamental issue: how do you get the data? What is needed is a focused, production ready supply chain infrastructure. But many companies, underestimate the cost and complexity of establishing a “greenfield” network. Key questions help frame organizational readiness to build and maintain an infrastructure:

- Are connectivity, certification, and maintenance core competencies of your business?
- Do you have the resources to build and maintain highly scalable, Internet-structured, asynchronous systems?
- Can you effectively manage information transformations, as product moves from order to shipment, across multiple modes, and through consolidation points?
- Can you address data quality issues with the appropriate tools and domain expertise of business analysts?
- Do you have the on-going commitment to recertify trading partners and work improvement programs to address data quality issues at the source?

In this era of ROI and fast time-to-benefit, most cannot afford to build expensive infrastructure. Poor infrastructure, however, can only lead to failed visibility solutions and sub-optimal implementation of others.

The Solution: A Supply Chain Infrastructure Service

Realizing competitive advantage through the supply chain is based on establishing the right infrastructure. Before supply chain functions are outsourced or big investments are made, companies need to have the right strategic infrastructure to manage the information flows in the extended supply chain. With the right foundation, new operational capabilities can be integrated faster.

When establishing a supply chain network, many will decide to focus on core competencies and partner with a supply chain visibility and connectivity service provider.

Deploy a Proven Internet Architecture

The supply chain infrastructure must be able to handle tens of thousands of users, from thousands of trading partners and transportation service providers, initiating millions of simultaneous transactions, across countless interfaces. Such a scenario would overwhelm a traditional client/server architecture, and can even challenge today’s Web development approaches on a .NET or J2EE application server application framework that is tuned for one-to-many content dissemination.

In order to effectively meet these demands, the infrastructure must have a distributed framework, whereby each tier of the architecture (front end, middleware, and back end) are independently scalable. The architecture must also allow processing power to be added in a linear fashion, on demand, and without degrading system availability or performance. Security and user services must support multiple enterprises and roles to capture the inherent complexity of new outsourcing relationships in the business network. With scarce IT resources and competing corporate priorities, designing and deploying a supply chain infrastructure that meets business needs presents considerable cost and risk.

Connect Trading Partners with Expert On-Boarding Processes

With the slow adoption of XML standards, there is still no standard communication protocol that is universally adopted by trading partners. Given the demands to support highly-tuned, proprietary processes, there will probably never be a simple standard.

The supply chain infrastructure must be device- and protocol-independent to support integration needs across any trading partner system. Integration capabilities must include EDI, XML, and Web forms. Look for a supply chain service that already has connections with most of your trading partners and an on-boarding process that can reuse existing integrations. With connection reuse, implementation time frames can be accelerated and benefits realized within months.

Ensure Data Quality

Without data quality, extended supply chain

benefits evaporate. The same challenges that many businesses encounter with data cleansing when deploying an ERP system are magnified when trying to integrate outside the four walls. The promise of supply chain visibility is at risk due to incomplete and inaccurate data

Until recently, the costs of poor data quality were not understood. Most companies did not bother to quantify impact or to properly fund projects to address data quality. Studies have determined that most companies have experienced financial pain from defective data that today accounts for billions of dollars in billing, accounting and inventory mix-ups.

Very few companies are confident in the quality of their own data, and even fewer are confident in the quality of their trading partner's data. Data quality is now becoming a critical business issue; one that could undermine investment or even scrap supply chain planning projects. Given the reliance on information to deliver business results, data quality is now being escalated to the C-level.

Leading supply chain infrastructure solutions can deliver data quality with superior rules and tools, created from experience with large production customers. Outsourced data management services, staffed with analysts, will not only resolve specific quality issues with a given order or shipment transaction, but implement continuous trading partner improvement programs. Data quality initiatives can be judged on a few key dimensions:

- *Data Time Lines* – Measure data timeliness and use event management triggers and reports to alert and drive continuous improvement
- *Data Accuracy* – Both standard and customizable business rules to identify data quality issues with the option to outsource the data management function
- *Data Completeness* – Test for data completeness and prompt for corrected information prior to submission
- *Data Normalization* – Aggregate and normalize information across the extended supply chain (product, item, vendor, calendar, shipment, unit of measure, currency, port of lading, etc.)

Dirty data can force a supply chain system implementation project to fail and be cancelled. Businesses can only maximize their existing enterprise systems with high quality information that is managed on a daily basis.

Provide Visibility, Event Management, and Analytics

Visibility software can provide a complete view of the supply chain – purchase orders, inventory, and shipments across all modes of transportation. Vendors with leading solutions offer sophisticated event management capabilities that not only screen for exceptions, but also determine whether the exception will substantially impact the promised delivery date. Only with contextual alerting can businesses properly filter events and avoid swamping participants with irrelevant alerts.

With high-quality, centralized information, look for opportunities to extract this information for enterprise systems, and use analytic tools to quickly access key supply chain information. With scrubbed content

solutions that leverage Web services to support the distinct needs of customer service representatives, sales, and customer self-service portals. Shared information, robust decision support tools, and fast response allow companies to realize the promise of best-in-class supply chain performance.

Transforming Your Supply Chain the Sane Way

The rise of network-based business models is challenging the supply chain status quo. Fax messages, telephone calls, and spreadsheets won't scale forever.

If enterprise integration within the four walls is challenging, harnessing the potential of the extended supply chain is an order of magnitude more difficult. Integration tools are part of the equation, but don't offer infrastructure to deliver "enterprise quality" information with a realistic cost of ownership.

Many companies are avoiding investments in large infrastructure projects that do not clearly leverage core competencies

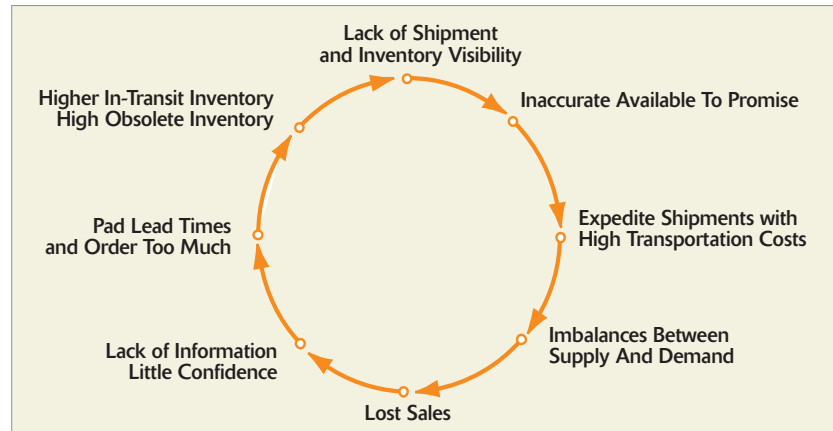


Figure 1 | The Cycle of Supply Chain Inefficiency

and leading business intelligence tools, users are able to quickly respond to issues or monitor KPIs and scorecards to better manage the end-to-end process and support re-engineering efforts.

Visibility must extend across the enterprise and not be relegated to the purchasing and logistics departments. Look for role-based

and the skills of IT staff. A new class of supply chain service providers is filling this market need and helping companies to realize fast time-to-benefit without the cost and risk inherent in a "do-it-yourself" approach. Look for an established service provider to transform your supply chain the sane way. ■