



Supply Chain Response Management It's Time to Embrace Volatility

The ability of ever more sophisticated algorithms to make a perceptible improvement in supply chain performance is nearing its limit. In today's volatile demand environment, response management solutions present a largely untapped opportunity to maximize profit potential by optimizing day-to-day execution.

INTRODUCTION

Most of a product's costs are locked in during design. Estimates of total lifecycle costs determined during early engineering stages range between 70% and 90%. That leaves less than a third of costs that can be optimized during the order fulfillment process, from procurement through production and customer delivery. Within that window of opportunity, the ability of supply chain managers to sense and respond intelligently to supply and demand changes, and to make tradeoffs that maximize profitability and other business objectives, can be what separates superior market performers from everyone else.

One of the core purposes of supply chain management is to leverage available resources to provide the targeted level of customer service while protecting margins. For manufacturers today, long- and short-term planning is a continuous process. Globalization, shorter product life cycles and capricious customers have caused these planning processes to become ever more sophisticated to keep up with increasing supply chain complexity.

Efforts to improve responsiveness and flexibility have resulted in more agile supply chains. But what constitutes agility is a matter of interpretation. Many companies still defer anything other than basic decisions back to a central supply chain planning department, slowing down the time required to make a decision. That's not very agile especially when not responding quickly to demand changes can mean the loss of a customer or the failure to win new business.

True agility allows those closest to the customer to respond to disruptions and opportunities on the fly, to make adjustments that serve customer needs, yet don't undermine broader business objectives, especially profitability. Today's response management tools

make it possible for manufacturers to be agile at every level of the organization and embrace today's market volatility. As noted in a recent Aberdeen Group research briefing, response management solutions bridge the gap between supply chain planning and execution.

"Response management is a solution area that performs elements of execution and planning in the operational to tactical timeframe. In some highly dynamic industries (like high-tech), the S&OP process, master planning process and response management processes are converging and the supply demand match is done at the order level."

In practice, response management does more than fill a gap. It allows supply chain planners and customer account managers to quickly detect and respond to changes in both supply and demand. This white paper will review how current response management solutions and practices are enabling organizations to profitably manage risk and uncertainty in this era of market volatility.

Effects of Poor Response



Performance is negatively impacted when companies are unable to profitably respond to change. Top line and bottom line metrics are both affected as the company struggles to satisfy customers and manage costs.

VOLATILITY: A SELF-FULFILLING PROPHECY

As customers, we expect our orders to ship today and arrive tomorrow. We expect the next smartphone to be faster, have more features and be available six months from now. We expect prices to remain low—enabled by global supply chains that leverage lowest labor costs—and even fall over time, as in the case with consumer electronics. Whenever possible—and such possibilities continue to grow—we want products tailor made and customized to our exact wants. That’s how we’ve been trained. There’s no going back.

“True agility allows those closest to the customer to respond to disruptions and opportunities on the fly.”

More than any other factor, rising consumer expectations have had a trickle-down effect that has increased demand volatility in almost every market. But even as companies have had to become more responsive to customers, longer supply chains that extend overseas to suppliers and contract manufacturers mean that they have less direct control over operational processes. This makes them more vulnerable to delivery problems, quality issues, missed deadlines, inventory liability and other risks.

Back in 2005, the Electronic Supply Chain Association found that more than two-thirds of brand owners reported that they had less control over key supply chain management processes, including order promising, managing risk, inventory liability and forecast sharing. And the situation hasn’t improved. If anything, companies have even less control today.

As AMR Research reported in 2007, in the trillion-dollar U.S. high-tech industry, “Order fill rates are a mere 76%. Fewer than 47% of product launches are successful. Inventory is stuck in a buyer-versus-supplier shell game.”

CPG Forecast Mean Absolute Percentage Error (MAPE)

	Weekly	Monthly
Total	48%	33%
Top performers	42%	28%

Source: Terra Technologies, 2011 Forecasting Performance Benchmark Study, July 2011 (Research data represents \$200 billion in sales over 2009-2010.)

Even forecasts for human staples, which have long life cycles and where you would expect demand to rise and fall fairly predictably, have a high degree of variability. In the consumer packaged goods (CPG) sector example, which has many long-established products and billion-dollar brands, the weekly average forecast error (calculated as mean absolute percentage error, or MAPE) is 48%, according to a 2011 benchmarking study on forecasting performance by Terra Technology. Top performers were marginally better with a 42% error rate. That performance did not waver much over the course of the study, which spanned 2009-2010.

“Historical analysis, no matter how mathematically sophisticated, will always fail to account for current market conditions.”

As you would expect, demand for new products remains difficult to forecast. According to the Terra study, weekly item/location error rates are 65% on average. In addition to consumer-driven factors, the study points to outdated mathematics and optimistic marketing departments for undermining demand planning accuracy. The report attributes the persistently high forecast error rate to the fact that historical analysis, no matter how mathematically

sophisticated, will always fail to account for current market conditions. The authors note that newer “demand sensing” methods that consider real-time demand information reduce near-term forecast error by 30%, compared to forecasts based solely on historical analysis.

Sensing any demand (or supply) issue as soon as possible will obviously have a major impact on supply chain performance. But that's only the beginning. Proposed solutions must be evaluated, reviewed and implemented. Better yet, potential problems should be anticipated and planned for in advance. What's the most widely used tool for weighing such alternatives? That old accounting workhorse: Microsoft Excel.

SUPPLY CHAIN MANAGEMENT'S VERSION OF MANUAL LABOR

Microsoft Excel remains the tool that supply chain teams turn to when events deviate from the plan. Aberdeen Group reports that 78% of companies use basic spreadsheets in some way to manage their supply chain processes. Combined with phone calls, emails and emergency meetings, they use Excel to analyze ERP data and get a rough estimate of the tradeoffs and compromises. As files are passed around, input from all parties can take hours or even days, and the final results are often only a “best guess” based on past experience. For some companies, that's good enough.

But spreadsheets were never designed for resolving complex supply chain issues. They cannot handle the extremely large volume of data from internal ERP and external systems that is required to thoroughly analyze issues when they occur. Spreadsheets don't provide a comprehensive range of analytical insights that planners need in order to understand the impact of their decisions. They also lack functionality that makes it easy for people located around the world to share information and collaboratively find solutions to problems.

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ERP systems themselves were originally designed to capture data and record transactions for accounting purposes. In today's distributed supply chain networks, the records for these transactions are stored in multiple ERP systems and spreadsheets that are outside the control of any one central organization. Business intelligence (BI) tools can pull some of this data together into management dashboards. But BI solutions generally lack methods for identifying the underlying causes when something falls outside of acceptable ranges, and these tools have limited ability to assess future performance and risk.

Even within a single ERP system, several modules may be used to reconcile demand and supply, another module will be used to collaborate with suppliers and customers, another module will be used for reporting, and yet another for scenario management. The latency

inherent in these islands of data, both external and internal to an organization, reduces the timeliness and effectiveness of any supply chain decision.

On the positive side, supply chain optimization solutions have vastly improved the ability to map and model network changes in detail. But as supply chain complexity increases, so do the skills required to update these models. The quantity of information required to model the business accurately can be massive, and it changes constantly. Changes to the model can be difficult to define and time consuming to validate.

Within recent years, demand planning solutions have introduced better statistical forecasting algorithms and made it easier for different departments to collaborate and create consensus forecasts. These tools have improved forecast accuracy, which has subsequently improved supply chain performance. But in the end, any plan is based on certain assumptions and averages, and will never be 100% accurate. From the moment a supply chain plan is established, there will be an inevitable disconnect between the plan and what customers actually want. And this disconnect grows every day.

BEYOND PLANNING

Better planning won't help manage the supply chain challenges inherent in today's dynamic and volatile markets. It doesn't make economic sense to spend even more time and energy working to further fine tune advanced planning systems when any forecast will always be inaccurate. Looking forward, major improvements in forecasting and supply chain performance will depend on how effectively a company responds to present conditions, whatever they may be.

“To become truly agile and customer responsive, companies need to enhance their ability to sense and respond rapidly to demand and supply changes.”

To become truly agile and customer responsive, companies need to enhance their ability to sense and respond rapidly to demand and supply changes, and balance the tradeoffs that inevitably crop up when

RESPONSE MANAGEMENT CASE STUDY JABIL

St. Petersburg, Fla.

Electronics design, manufacturing and product management services

2010 Revenue: \$13.4 billion

Employees: 100,000

Facilities: More than 59 facilities in 22 countries

Jabil first began using the Kinaxis RapidResponse response management solution more than 10 years ago. At that time, the company's existing front- and back-end infrastructure couldn't provide the necessary information to respond effectively to last-minute customer and supplier changes. Managers wanted to pull together data from a variety of sources so they could analyze it and provide answers to customer inquiries within hours, not days or weeks.

“We use SAP, which can do what-if planning,” recalls Andy Joyner, a material systems manager for Jabil. “But it takes quite a while to run and we needed something that would compute a lot quicker.”

Today the company has thousands of users who use RapidResponse workbooks and worksheets to make supply chain decisions on an hourly basis. When a new plant is brought online, and SAP is installed, the response management solution is installed along with it to help supply chain staff manage the volatility inherent in the electronics market.

“Nothing is sacred any more. Not even the schedule for next week is held firm,” says Joyner.

forecasts don't match what's currently happening. As noted by Ventana Research:

“Companies need to consider the consequences of price and cost changes as well as disruptions in supply and demand. They must be able to adapt quickly to changing environments, and that includes alerting all the people who need to know about any meaningful deviation from the plan, and having tools and processes available with which to alter the plan as quickly as possible. Moreover, the changes they select must be based on overall company objectives.”

Response management solutions and practices make it possible to successfully make such decisions. These tools give supply chain teams—as well as buyers, material planners, order managers and logistics personnel—the ability to identify root causes of delays, then test and rate options for responding. When an unexpected event happens, managers can quickly identify the relevant orders and evaluate potential financial consequences.

“While demand sensing is really important, perhaps the most important aspect of supply chain execution, it only describes part of the response management story,” adds Trevor Miles, director of thought leadership, for Kinaxis. “Response management is about knowing sooner about a broad range of supply chain disruptions and acting faster to provide a profitable response.”

Miles goes on to describe two critical elements of the response management process: time to detect and time to correct. Time to detect is all about knowing that something has happened as quickly as possible, understanding the potential impact and knowing what customers are affected. Time to correct describes the process of finding and implementing solutions across multiple functions. Both contribute to how quickly an issue can be resolved, which is a key element of the quality of any solution.

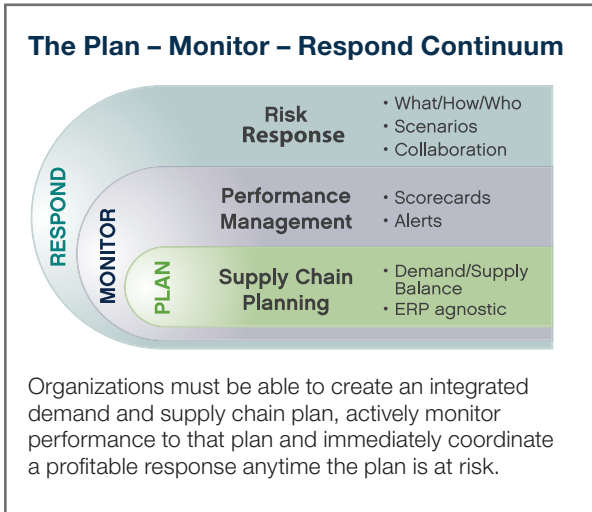
For example, MTD, a global manufacturer of outdoor power equipment for lawn and garden care, has to manage an extremely seasonal business. Nearly 70% of the company's production takes place

One of their most common uses is reconciling customer forecasts with manufacturing capacity and schedules. Planners can load a new customer forecast into RapidResponse and see the impact within minutes. They can then report which incoming parts will have to be pushed back, those that will have to be expedited, and the dollar amount attached to the changes. Working with a customer they may collectively decide, knowing there's a \$1 million order liability, to build out a product, or allocate components somewhere else.

Improved visibility has made it easier for Jabil and its supply chain partners to collaborate on decisions online in real time to resolve allocation issues, minimize

excess inventory and maintain consistent cash flow. Using the response management solution, the company is also able to more effectively leverage existing infrastructure, and has improved supply chain risk management.

When the recent earthquake and tsunami hit northeastern Japan, Jabil's planners used RapidResponse to figure out where its liabilities were. They identified which companies had manufacturing facilities in the region and what orders might be affected. Then they determined whether those sources of supply were still available, and found alternatives if necessary.



between November and May. Sales promotions and unseasonable or extreme weather conditions change forecasts on a weekly basis.

MTD uses the Kinaxis RapidResponse solution to react quickly to unexpected demand by identifying specific parts to expedite, including how many and when. This has made it possible for the company to reduce safety stock and order lead times, and provide more accurate promise dates to customers. Other benefits include simpler and faster cost analysis, more thorough spend analysis and engineering change analysis.

In addition to stand-alone response management solutions, the major ERP vendors are starting to offer capabilities such as an additional module within their suites of software. These tools are an improvement over

trying to perform such analysis and modeling within advanced planning and scheduling systems, but they still suffer from the same architectural limitations of other bolt-on ERP modules. Namely, they require complicated integration of data silos based on traditional technology optimization practices.

No matter what response management tool is used, implementing such a solution requires three key capabilities:

- 1) **Global visibility** to actionable demand and supply data. In addition to consolidating such data, managers need to be alerted to any situation that needs to be addressed, whether it is a new order (and its impact on other orders) or a parts shortage issue.
- 2) **Real-time analytics** that make it possible to rapidly and collaboratively assess many “What if?” alternatives. This includes a scoring mechanism that predicts the impact of potential responses and weighs alternative scenarios against company objectives. One solution, for example, might contribute to revenue targets, while another reduces manufacturing or logistics costs.
- 3) **Collaborative tools** that make it possible to quickly solicit input from across the supply chain organization, including third parties, efficiently manage their responses, and collectively arrive at the right course of action.

	Excel	ERP: Advanced Planning & Scheduling (APS) module	Business Intelligence (BI)	ERP: Response Management module	Response Management solution
Key value proposition	Flexibility and cost	Leverages legacy ERP systems	Dashboard view of operations	Integrated with legacy ERP systems	One system (a single data model, analytics and UI) for all plan-monitor-respond requirements
Drawback(s)	Lack complex analytics; not scaleable; hard to collaborate	Based on planning optimization, an insufficient technology approach for response management	Backward looking; not able to drill down to root causes; little to no “what-if” scenario analysis capabilities	Optimization based; point solution for a non-niche problem (creates another data silo and point of integration)	Requires Investment outside of legacy systems
Total cost of ownership	\$	\$\$\$\$\$	\$\$\$	\$\$\$\$\$	\$\$\$\$

A SINGLE VIEW OF REALITY

Businesses today have too much data and not enough information. Lack of real-time visibility into key processes prevents companies from making optimum decisions. In the case of the supply chain, true visibility gives managers a single integrated view of forecast, sales orders, inventory levels and supply data. As noted previously, much of this data resides in disparate systems owned and controlled by third parties, including customer relationship management systems, ERP, demand planning tools, supply chain management tools, spreadsheets and customer point-of-sale data. The major technical challenge of implementing a response management solution is getting access to this data.

The integrator's challenge is to stitch together and synchronize all of this data into one view of reality. For example, the quantity of a certain part that a supplier has committed to deliver must be linked to the production schedule and associated with customer orders. This task is no trivial matter considering the many different part numbers, time zones and languages that are typical of a global supply chain. Ultimately, the depth, consistency and timeliness of this data will determine how fast a supply chain organization can respond to tactical issues as they arise.

Getting the data is only the beginning. Enterprise-wide visibility should offer a holistic view that empowers not only staff but external partners as well to extract the information that they need when they need it. And the supply chain team itself should be able to instantly extract answers to typical executive questions, such as which customers are facing late deliveries, which orders won't be shipping and why, what's causing any delays, and how the company could get back on track.

Visibility also includes some form of automated surveillance system that alerts individuals to significant deviations from expectations and the potential operational or financial impact. Sometimes known as "event management," such a system monitors, prioritizes and alerts the right people about unexpected conditions. The system's analytical

WHY ARE RESPONSE MANAGEMENT SOLUTIONS SO MUCH FASTER THAN ERP SYSTEMS?

Response management solutions employ novel data compilation and storage methods that make it simpler for fast algorithms to extract and analyze demand, supply and manufacturing data. Calculations that test various "what if" scenarios can take minutes or seconds to complete where other automated planning tools require hours or days. User-friendly interfaces, including spreadsheets, worksheets and scorecards, allow thousands of users to perform queries relevant to their unique requirements.

The Kinaxis RapidResponse solution, for example, uses an in-memory database that relies on main memory for computer data storage, as opposed to common database management systems that employ disk storage. In-memory databases are faster because accessing data in memory is faster and more predictable than pulling it from a disk. The analytics code directly compiles within this database engine. Less movement of the data between the database and analytics further enhances performance.

For more information, see the Kinaxis white paper, [RapidResponse, How Is It So Fast?](#)

ability must be robust enough to factor in the domino effect of multiple events. For example, several small changes at the operational level may not be outside of tolerances, and therefore wouldn't generate a traditional alert, but the cumulative effect of these changes could lead to a drop in revenue for the quarter, which would be important enough to warrant executive intervention.

RESPONSE MANAGEMENT CASE STUDY

AVIAT NETWORKS, INC.

Santa Clara, Calif.

Aviat is an independent provider of wireless communication transmission equipment and technology.

Fiscal 2011 revenue: \$452 million

Employees: 1,300

Offices: United States, Canada, Europe, Central America, South America, Africa and Asia

Aviat Networks develops and supplies wireless communication technology and equipment. More than 750,000 of its systems have been installed around the world. Aviat implemented the Kinaxis RapidResponse solution during the summer of 2008. The company's primary objective at that time was to be able to analyze and implement supply chain changes faster. Because of the sometimes slow and arduous process by which radio frequencies are allocated by regional governments, Aviat's customers may go through the bidding process without knowing the final product requirements, which often translates into late order changes close to the manufacturing cycle.

"After we receive the purchase order from a customer, and they go and do all of the detail work that they need to do, what they need to buy from us might change," explains Patty Cavers, an Aviat business process engineering manager. "But their expectations for delivery don't usually change. We need to be able to react quickly—whether it's additional equipment or changes in specifications—and adjust our supply line to respond to those changes."

For example, a sales order may have 10 lines on it with different products, or it might have thousands of lines. RapidResponse reports give order fulfillment managers line-by-line detail for when every single unit will be ready to ship to the customer. As priorities move around based on original promise dates and other expectations, everything can be revised within a few minutes, including a full analysis of any shortages. Such reports make it possible for Aviat's order management and program management teams to provide up-to-date information to customers and efficiently plan equipment installations.

Previously, the company extracted such information using custom reports using software from another vendor, but that vendor wasn't nearly as responsive or easy to use, according to Cavers. The data in RapidResponse is updated three times per day, roughly aligned to the start of the workday in North America, Europe and Asia, so anyone can look up current order status. Driving the business to maintain the data in the system helps reduce the churn of e-mails and phone calls between people checking for the latest information. In general, better supply chain visibility has helped Aviat address supply issues faster and reduce lead times.

"Our constant goal as a company is to reduce lead times and provide quick and timely delivery," says Cavers. "If we can deliver orders in shorter lead times, there's less time for the customer order to change."

As another benefit, when RapidResponse was first implemented, the company (then named Harris Stratex Networks) was operating off of two different ERP systems and the tool helped to integrate the business. It made it possible to seamlessly report inventory levels, purchase order and order status, and perform operations planning no matter which half of the business was fulfilling the order.

Now Aviat is extending the visibility provided by RapidResponse into its formal demand-planning process. Planners can see markets and quotes that the sales teams are working on, as well as historical sales data by product and region. They then solicit input from people with more direct knowledge.

"It will generate reports that we can put in front of a product lifecycle person or engineers and ask if they look right," says Cavers. "And they can make adjustments. Engineering may say, 'No! You're planning for demand in two months when we won't have the design done before four months.' Or they might note that there's a whole sector that hasn't been factored into demand yet. RapidResponse provides a collaborative way to manage that data and come to mutually agreed-upon decisions."

FROM FIREFIGHTING TO RISK ANTICIPATION

Such predictive capabilities are a core element of response management analytics. The analytics should pull together disparate information and decompose finished goods demand into dependent supply requirements through a bill-of-material explosion that considers batch sizes, capacity constraints and supplier lead times. This gives planners the ability to make tradeoff decisions based on criteria such as working capital targets, available capacity and inventory safety stock levels.

In addition to addressing immediate supply chain issues, these analytical capabilities can be used to identify future risks and test courses of action to mitigate these risks. For example, planners should be able to see and roll up detailed costs for any scenario that they are investigating, not by using standard costs. The impact on other areas and the business as a whole should also be revealed. Without such analytical tools, short-term responses may seem adequate when in fact they undermine profitability and contribute to complexity and uncertainty.

Scorecards help rank potential actions and show how well they support corporate goals, making it easier for people throughout the organization to evaluate the changes based on the business impact. By adjusting the criteria to reflect current requirements, scorecards can report customer impact, quality, costs and other financial measures.

The core capability of response management tools is the ability to test and evaluate many different courses of action quickly, in minutes or hours, not days or weeks. Testing a single scenario within an ERP system may only require a few hours, but there are always other alternatives to consider and iterations to explore. Running multiple queries within a short period of time makes it possible to identify the actual best response, not the response that planners had time to consider.

John Westerveld, a demo architect for Kinaxis, offers a detailed example. "Say it's Monday morning and your ERP system has just run and you have a fresh new plan. Then the phone rings and it's a new, potentially major customer. You log into the response management system and create a what-if scenario. After adding the order, you instantly see that it would be six days late. You drill into the causes for lateness and see that you have three late purchase components and a capacity constraint preventing on-time delivery of the new order."

Traditionally, resolving such questions would require multiple e-mails and phone calls. Given this time lag, the normal tendency would be to accept the order and deal with the ramifications later. Built-in collaboration capabilities, however, can dramatically speed up the feedback loops and allow order managers to make promises that can be fulfilled.

Westerveld continues, "You share the scenario with the capacity planner and the buyers for the late parts and they automatically receive a notification that they have been invited to help. Within minutes, you hear back from the capacity planner saying that the constrained resource can be rescheduled to meet your demand. Minutes after that, the first buyer is back to you saying that they can expedite a component, or alternatively they can get an alternate. Within the hour, you've heard back from the other buyers. You have two possible resolutions: One solves the problem using expedites, the other using alternates. You compare the scenarios and decide that expediting has the least impact on overall cost and you place the order. An hour after your customer has called, you have called them back and can confidently promise that their order will be delivered."

COLLABORATION: A SUPPLY CHAIN MANAGEMENT NECESSITY

As the above example shows, resolution of any supply chain issue almost always requires people from different departments to collaborate on the fly to reach a fully informed decision. If anything, managing today's distributed supply chains requires less optimization and more collaboration and coordination. Response management solutions break down organizational silos and enable people to work together to make faster, fact-based decisions that support corporate objectives.

"Machines can churn through vast quantities of information in a short period of time; humans cannot," states Miles. "At the same time, nearly all supply chain decisions need to be made in an environment of

ever changing and ill-defined rules, constraints and objectives. Humans can deal with this uncertainty, machines cannot. What is required is a unique combination of human intelligence and judgment coupled with the processing power of machines."

"Response management can help an organization embrace market volatility — or at least manage it — by becoming risk robust."

RISING CUSTOMER EXPECTATIONS: THE ROOT CAUSE OF VOLATILITY

Falling international trade barriers ushered in the current era of globalization. Through the early 1980s, the majority of manufacturers were vertically integrated and their supply chains, for the most part, were concentrated locally or regionally. Outsourcing and off-shoring weren't part of the management mindset, neither was the concept of supply chain management.

University industrial engineering courses at that time focused almost exclusively on optimizing what went on inside factories, with little emphasis on the inter-connectivity between demand, production and supply. Manufacturers managed the discrepancy between supply and demand by building excess capacity, adding lead time to pad schedules, carrying inventory buffers and expediting. During the 1970s, the first material requirements planning (MRP) systems promised better inventory control, bill of material management and production scheduling.

As global competition heated up, market competition shifted from functional features to a broader range of consumer choices based on price, quality and performance. Product lifecycles began to shrink

and product complexity increased. What were once optional upgrades, like power windows and intermittent wipers in cars, for example, became standard. More finicky and less loyal buyers caused sales forecasts to become less and less accurate. Excess and obsolete inventory became an increasingly burdensome financial liability. Those manufacturers who could, starting with the high-tech industry, began to move away from high fixed-cost business structures and embraced outsourcing.

During this transition away from vertical integration, a variety of supply chain planning tools gained popularity. The scheduling and capacity planning capabilities of manufacturing resource planning (MRP II) evolved into enterprise resource planning (ERP) and advanced planning systems (APS). These systems help manage the movement of parts and materials, improve scheduling and aid information flow within and between organizations. Supply chain planning solutions developed by i2 and Manugistics sought to overcome some of the fundamental limitations of these systems, which were slow and could not simultaneously consider demand, capacity and supply.

Response management solutions support human judgment by providing the information needed to make good decisions in real time at all levels of the organization, and to course correct when things don't go according to plan. It's the final element of a truly agile supply chain that combines visibility into current events, analytical tools to both respond to and anticipate changes, and collaborative processes that simplify collective decision making.

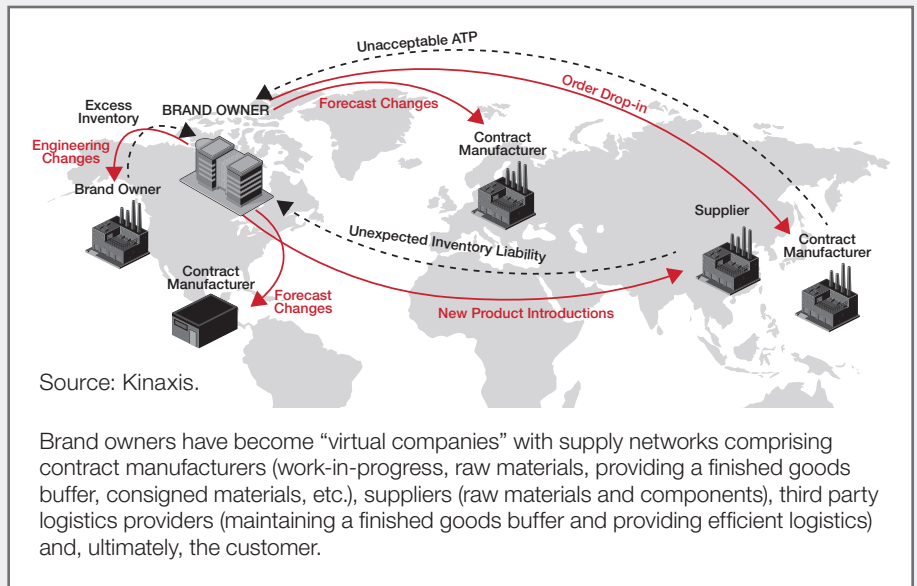
One area where companies quickly see the benefits of such agility is inventory management. This is especially apparent in sectors that experience exceptionally short product life cycles and high volatility, such as contract electronics manufacturing.

Headquartered in St. Petersburg, Fla., Jabil used to find itself stuck with unwanted inventory because it tended to accept customers' demand forecasts at face value, and then unquestioningly hand those forecasts off to manufacturing for scheduling. Those forecasts were sometimes off by 50% or more, which contributed to excessive finished goods inventory. The company now uses response management tools to validate customer forecasts and review the impact on manufacturing capacity and costs before committing to materials purchases and production schedules (See Jabil case study, pg. 4).

Another area where response management can have an immediate impact is risk management. Supply chain risk comes in many forms, ranging from

Over the most recent decade, ever more sophisticated supply chain planning applications have done a tremendous job of helping companies manage shorter product life cycles, respond to supply chain disruptions and maintain complex outsourcing arrangements. Today's demand-planning applications use statistical forecasting algorithms that build forecasts based on historical demand patterns. Coupled with tools that support internal collaboration, they have dramatically improved forecast accuracy, which has subsequently improved supply chain performance.

But the ability of better algorithms and more automated planning processes to provide a step-change improvement in supply chain performance has reached its limit. As the most recent recession demonstrated, traditional planning tools in the hands of a few experts at corporate headquarters



do little or nothing at all to provide an early warning of a shift in business conditions. Nor do they help evaluate potential moves that a company could make in response to rapidly changing conditions. The volatility in today's marketplace guarantee that even the best laid plans will be out of sync with current reality on the ground.

catastrophic natural events through third-tier supplier failures and day-to-day demand volatility leading to lost sales or excess inventory. While most risk management and risk mitigation practices focus on reducing volatility, response management can help an organization embrace market volatility—or at least manage it—by becoming “risk robust.”

Becoming risk robust is a matter of translating the improved order and material visibility available today throughout the extended supply network into swift reactions to changes as they arise. Not only that, being able to test what-if scenarios quickly and collaboratively encourages the development of real-world contingency plans that can be activated when things don't go according to plan.

No matter what solution is deployed, such capabilities mean little if they are not used or deployed effectively. As Ventana Research notes, “Simply buying software

does not fully address any business issue. When it comes to planning, organizations must ensure they also have addressed the people dimension (training, and very likely changing attitudes and expectations), have the right processes in place to support better planning outcomes, and have ready access to all the right information.”

Better planning outcomes means better business performance, which is ultimately about the financials. Within a fairly narrow window of opportunity, improving agility by using response management tools can have an impact on both the top and bottom line. Adjusting and responding to changes as well as customer inquiries can mean the difference between losing business or winning a new customer. The ability to make faster and more profitable decisions enhances margins both internally and across the supply network. It's hard to find fault with that.

ABOUT KINAXIS

Kinaxis delivers an on-demand enterprise software offering—RapidResponse—that enables manufacturers and brand owners to drive supply chain management (SCM) and sales and operations planning (S&OP) from a single system. Global leaders across a broad range of industries are using RapidResponse as a decision-making hub for the broader value chain and are realizing a competitive advantage as a result. Large manufacturing companies with complex supply chain networks and volatile business environments rely on RapidResponse for collaborative planning, continuous performance management, and coordinated response to plan variances. Learn more about Kinaxis at www.kinaxis.com

