



Overcoming 5 roadblocks to supply chain success

The road to sustainable supply chain performance gains

Predicting the future isn't as easy as it used to be – especially when it comes to supply chain planning. There are too many challenges to achieve any acceptable levels of accuracy about the future, impeding supply chain success. What's needed is a different approach to managing supply chain processes.

Companies can no longer predict the future with acceptable levels of accuracy. As a consequence, the success or failure of supply chain performance depends on how quickly and effectively stakeholders can understand and respond to evolving situations. As businesses become more complex, because of globalization, product portfolio expansion and outsourcing, the traditional approaches to supply chain visibility, planning, and analysis have become obsolete.

Most existing supply chain processes and supporting tools were not designed for today's reality of change and compromise. Competing views of the truth, siloed functions, sequential processes, disparate data systems, and limited analytical capabilities make swift, effective response to shifting circumstances virtually impossible. With current market dynamics and economic pressures, we've reached a point where the status quo is no longer sustainable and supply chain innovation is an urgent necessity.

Only when you understand and address the root cause of the issue can you put in place the people, processes and technologies your supply chain needs to deliver significant and sustainable breakthroughs in operating costs, productivity and financial performance. This paper describes the roadblocks that businesses face today and illustrates how to overcome them by taking a different approach to managing your supply chain.

So what's the problem?

Roadblocks preventing the supply chain from delivering

Roadblock #1: A focus on plan optimization – The myth of the better plan

Too often, attention is given to developing "better" plans based on the use of sophisticated optimization algorithms. Whether it is demand planning (forecast modeling), manufacturing planning (optimizing a factory schedule) or supply chain planning (multi-site demand/supply optimization), the focus has always been to build a more accurate, optimal plan. But capabilities aimed solely at building a better supply chain plan have limited value when, with the volatility in the market, it is impossible to generate an optimum plan regardless of how sophisticated your calculations are. In reality, accuracy of the outputs is limited because:

- ▶ The inputs are based on averages and estimates, which may not have been updated in years
- ▶ A small change in the assumptions or model can have a big effect on the results, especially at the detail level
- ▶ The quantity of information required to model the business accurately is massive and difficult to accumulate and maintain
- ▶ The business rules and objectives change frequently and the underlying supply chain structure is in constant flux

"Plans are nothing; planning is everything."

Dwight D. Eisenhower

In addition, there are too many nuances and "soft" constraints to represent in an optimization engine, let alone make it good practice to cede decision making power to the optimization engine. There comes a time when increasing the complexity of the mathematical model and the frequency of the planning process in response to frequent business change is simply infeasible.

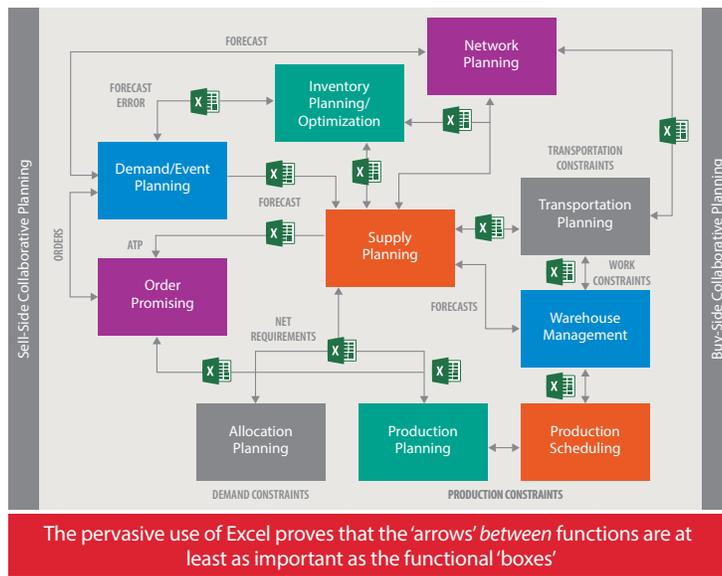
Since a plan will never be perfect, the ability to quickly and easily detect how reality is different from what you had planned to and quickly respond to the variances must be as important as the development of the original plan. Yet, plan precision continues to be a primary focus of supply chain organizations. As long as supply chain organizations are measured on things like forecast accuracy and performance-to-plan, the reinforcement of ineffective behavior will continue.

Roadblock #2: Siloed functions – The pain of the domino effect

Supply chain management (SCM) is a collective activity that requires collaboration, consensus, and compromise across multiple functions that often have conflicting objectives. Yet, these functions have long been segmented into isolated activities that reflect organizational structures and specific functional goals.

While each planning function might have its own span of control, most basic supply chain questions require input from multiple groups. Decisions made by one function typically have a domino impact on at least one other function, and more likely have multiple impacts on multiple functions. Today's velocity of change magnifies this "cause-and-effect" relationship. Supply chain participants make daily decisions with the goal to address their individual issues with little understanding of the cross-functional impact of their actions. In many cases, metrics specific to a department conflict with metrics of other departments, so while optimizing a single function might lead to functional excellence, it does not necessarily lead to improvements in overall corporate performance.

Modular, functional supply chain planning is failing due to the inability to see, understand, and orchestrate end-to-end supply chain functions to support corporate-wide objectives in a holistic manner.



The Issues

- Individual apps and processes
- Narrow focus
- Cascaded planning
- Loosely coupled

Excel enabled

Roadblock #3: Distributed operations – Too much time wasted on assembling distributed data

We know that supply chains are now more complex and global, not only because of outsourcing, but also due to companies' broader market penetration and expansion, which in turn typically leads to product portfolio complexity. The consequence is a substantial increase in the number of products that need to be planned, the number of supply chain nodes that need to be connected, and the volume of data that is represented in multiple data systems among those nodes.

The supporting systems - Enterprise Resource Planning (ERP) and Advanced Planning Systems (APS) - were developed in the 1980s. Their goal was to manage and optimize the manufacturing and movement of goods through an integrated enterprise, which was the structure that existed at the time of design. These systems assume all the data needed is included within the application.

The reality of today's distributed supply chain is that most of the supply chain exists external to the organization and so does the supply chain data. While advancements have been made in these technologies, the fundamental architecture and principles behind data ownership have remained the same. As a result, although companies are still responsible for the delivery of the end product, they have substantially less control over the chain of activities that get it there. The supply chain is long and complex and so is the information flow. The speed of the process no longer matches the speed of the business.

Traditional supply chain



Consider, for example, a sequential process that propagates demand changes across multiple tiers of the supply chain. This process might take weeks, only for the brand owner to realize that either the demand cannot be met or, even worse, that the demand picture has changed in the interim.

In the vertically integrated companies of the past the goal was optimization of assets. In today's multi-enterprise networks, it is the effective coordination between trading partners to meet market demand. The role of the brand owner has shifted dramatically from directly controlling all aspects of operations performance to having to coordinate supply chain planning and response across multiple sites and partners with speed and accuracy – an endeavor at which many are not succeeding.

Roadblock #4: Multi-system environments – Integration and harmonization is the stumbling point

Supply chain operations are distributed and processes are siloed, and most of the existing supply chain planning tools only reinforce this state. As a result, companies face enormous complexity and diversity in their systems environment.

Within the supply chain organization

In most supply chains, data needs to flow between systems that have been designed to satisfy functional needs in isolation. How activities take place between these systems is what companies are struggling to manage.

Some companies might manage to consolidate to a single ERP system. However, several modules might still be required to reconcile demand and supply, while another module is used for supplier collaboration and customer collaboration, another for reporting, and yet another for scenario management. In most cases, each module has its own data model and user interface. The latency inherent in these islands of data significantly reduces the timeliness and effectiveness of supply chain decision making.

Across the value chain network

As mentioned, at the core of legacy supply chain planning solutions is the concept that they control all the data. This is simply not true when a supply chain can consist of three or more tiers, each with their own ERP system. No longer is it only an issue of integration between modules, but of integration between companies with their own ERP systems and data sources. Using existing tools, it is nearly impossible to effectively connect, synchronize, and harmonize the data.

To plan, monitor and respond across the extended network, companies require not only the consolidated data, but must also be able to represent:

- ▶ The business policies of each node
- ▶ Any connected bills-of-material
- ▶ Sourcing rules that span organizations
- ▶ Leadtimes, capacities, and other aspects of the supply chain model in common units of measure

Once a single representation of the network has been established, the challenge is then assuring that calculations performed on that data at the network level are consistent with the calculations performed by the underlying systems across the extended network. Improvements in process and performance will not be achieved if the system cannot model and imitate the analytics in the associated ERP systems. It is imperative that upon execution, the results at each supply chain node correspond with the analysis done at the network level.

Roadblock #5: Supply chain visibility – Expand the definition to match the goal

In an effort to gain greater control over silo-focused yet distributed supply chains running on disparate systems, companies have attempted to implement basic visibility and execution-level solutions with the idea that “if I can see it, I will know what to do”. While this has merit, it simply is not enough. Coordinating the activities of a virtual supply network is an active process and requires more than static data snapshots of the various pieces of the supply chain.

The different types of visibility

▶ **“How I did”**

This is the traditional domain of Business Intelligence and Data Warehouse tools focused on metrics such as supplier performance. This is what you typically get out of your ERP systems. It is of little help in situations of ‘clear and imminent danger’, but has great value in setting policies to improve performance over the longer term.

▶ **“How I am doing”**

This is the focus of much of the current hype in supply chain visibility. However, this status report type view only provides visibility between business functions and/or organizations, not holistically across functions and/or organizations, and it does little to enable one to accurately see ahead.

▶ **“How I will do”**

This is where the true value of visibility becomes apparent. This end-to-end visibility gives advanced warning to future danger and provides a runway for course correction to avoid the risk or take advantage of an opportunity. This type of visibility inherently spans across organizations and includes analytics and modeling capabilities to project results of what-if simulations.

Companies must not only have a consolidated view of the end-to-end supply chain, but also the ability to leverage that visibility for deep analysis and quick action. True value is achieved with the ability to interact with data in a collaborative way, performing real-time calculations, data modelling, and simulations to project results. One must be able to alter and analyze data across the extended supply chain network, not just see it. The drawback of visibility initiatives and solutions is that they do not provide impact or consequence identification up and down the supply chain, or collaborative resolution of issues through “what-if” analysis.

When you ask those seeking supply chain visibility what they are trying to accomplish, the disconnect between the limited definition of visibility and the goal becomes clear. If the answer indicates a desire to better manage the supply chain, to make improved decisions, or to know sooner in order to be able to act faster, then visibility is but the first step in that journey.

Only when a definition of visibility includes the requirements of associated analytical capabilities, will the roadblock be broken through.

What is the impact?

Where your supply chain is feeling the cracks

These roadblocks result in business operations being out-of-sync with reality. Companies cannot enable the agile and collaborative processes that are needed to win in today’s highly distributed and fast-paced environment. The supply chain organization is too slow to identify risks (and opportunities) and too inflexible to act on them. Ultimately, the cost of these limitations is exceptionally high.

Operational limitations

- ▶ Incomplete global representation of the supply chain
- ▶ Functions and supply chain nodes that operate sequentially and in isolation
- ▶ Slow and distorted information flow
- ▶ Analysis that is cumbersome and based on inaccurate, obsolete or inadequate data
- ▶ Limited and ineffective collaboration
- ▶ Decision making that is slow and done with little insight into the operational impact
- ▶ Too much activity that happens offline; processes are uncontrolled and inconsistent

ADDRESS THESE LIMITATIONS

Business performance implications

- ▶ Operating costs are high
- ▶ Productivity is constrained
- ▶ Customer service suffers
- ▶ Revenue is put at risk
- ▶ Competitive position is weakened

AVOID THESE IMPLICATIONS

What is the solution?

Focus on the capabilities you need, not just the processes you manage

So many companies operate their supply chain as a series of fixed, separate processes that run sequentially and are loosely integrated through oversight at only the highest level. A supply chain management breakthrough can be achieved only when different business functions are able to plan, monitor, and respond concurrently and continuously in a single environment. Developing a central information and analysis systems layer that crosses organizational boundaries, planning levels, and time ranges drives horizontal process enablement.

Horizontal processes facilitate not only the generation of an integrated plan, but also the ability to monitor the health of the plan. This approach allows you to determine major deviations caused by demand or supply changes and then to work adeptly as a team across boundaries to determine the most profitable response. A new paradigm has evolved making supply chain agility and responsiveness the key determinant of modern supply chain management success.

The breakthrough – An integrated approach to SCM



Concurrent planning

Performing different supply chain planning activities simultaneously and continuously to ensure dynamic demand/supply balancing



Performance monitoring

Proactively monitoring and managing risks and their cross-functional impact, addressing both the current and projected implications of events and activities



Response management

Conducting rapid but comprehensive risk trade-off evaluations and comparing what-if response alternatives prior to execution

This breakthrough requires a new mindset for supply chain process design and the supporting technology. The key is to identify and enable the underlying capabilities upon which you can build the foundation for agile, end-to-end processes. While optimizing a given individual process is important, meaningful benefits come from bringing processes together and making the interaction between them seamless.

When this model of supply chain is achieved, process execution can evolve into operational orchestration; efficiency goals can be coupled with measures of effectiveness; and cost-control objectives can be balanced with objectives for delivering business performance.

Associated & essential solution tenets:

- ▶ **Breadth** - A data and analytics model that can support several supply chain functions inclusively
- ▶ **Depth** - High computing capabilities that allow rapid and deep data analysis (perform entire supply chain roll-ups, as well as drill-down features for root-cause analysis)
- ▶ **Integration** - Draw on and incorporate diverse sources of supply chain data across multiple systems (internal or external to the organization). Tight integration with record-keeping transactional systems to facilitate action and execution
- ▶ **Collaboration** - Enable multiple users to work in concert from a single, real-time 'version of truth' to collectively drive decisions'
- ▶ **Speed** - Initiate fast and accurate analysis, enabling decision-making to happen at the speed of business

Kinaxis RapidResponse – A one-to-many solution Breaking through the roadblocks

Kinaxis offers a cloud technology solution that brings all stakeholders, information and analytics together for:

- ▶ Accurate and complete representation of multi-tier supply chains
- ▶ Deep and rapid what-if scenario analysis
- ▶ Collaboration and coordination across corporate functions, planning processes, and supply chain nodes

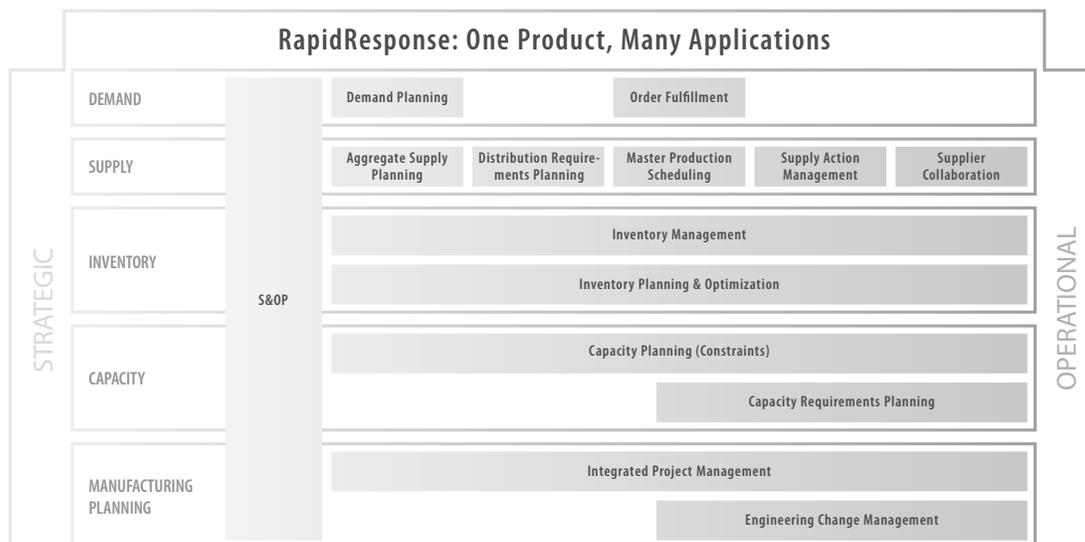
Kinaxis RapidResponse is a “one-to-many” offering – a single product that can be used to solve a broad array of supply chain business problems. With RapidResponse, our customers have been able to eliminate individual disparate software products and gain visibility across their supply chains, respond quickly to changing conditions, and ultimately realize significant operating efficiencies.

With RapidResponse, multiple supply chain planning functions are holistically managed in the same system, enabling cross-functional coordination and faster, more effective decision-making. While other solutions might claim the same end-result, they cannot claim that the full range of functional capabilities are offered:

- ▶ Within a single product
- ▶ With a single data model
- ▶ Using a single user interface

Operating on a single code-base is a significant differentiator that makes coordinating horizontal supply chain processes possible.

A single solution that ties the highest-level demand signal to the very lowest-level raw material component, while simultaneously supporting near and long-term planning, ensures that the initial planning process and subsequent response activities are producing decision behaviors that are reliable, repeatable and consistently aligned with overall corporate objectives and the most current business realities.



The building blocks Your end-to-end supply chain journey

Companies deploy RapidResponse via configurable supply chain applications. Of course, the greatest advantage of any given RapidResponse application is the ability to leverage it in conjunction with other applications as part of a broader, integrated solution. The complete set of applications present the building blocks to progressively deploying RapidResponse across the organization as a strategic technology enabler for end-to-end, global supply chain management.

Identifying the key differentiators Translating technology capabilities to business value

At the foundation of each of the integrated applications developed by Kinaxis is a set of interdependent capabilities essential to making short-term to long-term demand and supply balancing decisions across the enterprise. It is the availability of these deep capabilities to the broad supply chain community that enables companies to redefine their supply chain processes and expand both the function and value of the individual roles within the supply chain organization.

What-if analysis and scenario simulations

Our patented multi-versioning technology allows anyone, at any time, to simulate anything in a private scenario to test, compare, and share the impact of various planning and response options. Creating a scenario is simple and can be done in a fraction of a second regardless of how large the dataset is.

What-if scenarios are a key capability, allowing supply chain teams to perform an analysis of the projected outcome of a set of choices, such as:

- ▶ Testing alternative versions of a particular plan
- ▶ Testing business strategies against a number of alternative futures
- ▶ Evaluating the likelihood of achieving an outcome
- ▶ Evaluating the operational and financial impact of decision alternatives

Analysis = Outcomes

Being able to analyze more scenarios and identify consequences of actions prior to execution directly translates to better, more profitable (or least costly) decisions.

Consequence evaluation and alerting

Our exception-based alerts notify users to changing demand and supply conditions and their potential impact to the business. It is never enough to simply know that something unexpected has occurred. You need to understand the context, the impact, and the next steps.

Consequence-based = Response-driven

Knowing precisely what the consequence is from an operational and financial perspective translates to focused action on those exceptions that will truly disrupt the business.

In-memory analytics

Our patented in-memory database engine contains a full representation of supply, demand, capacity and policy, along with embedded, sophisticated, and natively-synchronized supply chain analytics that perform demanding calculations in seconds.

Speed = Value

Collapsing decision cycles directly translates to improvements in profitability, margin, market share, and invested capital.



Role-based collaboration

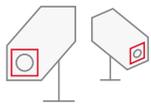
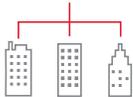
Our collaboration capabilities include responsibility definitions that identify ownership for specific data. This allows users to quickly see who is impacted by specific events so they can assemble a team to reach consensus on a resolution. The approach to collaboration in RapidResponse:

- ▶ Is event-driven (people collaborate around a particular what-if scenario)
- ▶ Incorporates human judgment (there are many nuances, personal insights and “soft” constraints that cannot be represented in an optimization engine)
- ▶ Is embedded in the process workflow (collaborating in the same system from which data is drawn, and in which the resolution is implemented)

Collaboration = Alignment

Facilitating effective cross-functional collaboration produces viable solutions made in the interest of the entire enterprise and that have been contributed to, and vetted, by the people expected to execute.

The ability to plan, monitor and respond by utilizing the combination of these four core capabilities enables supply chain organizations to:

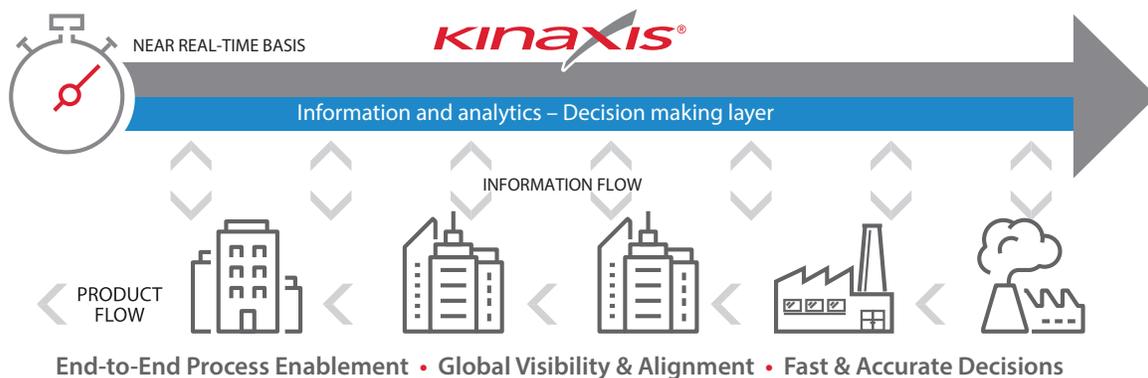
	Access a complete and always current view of the business
	Plan across time horizons and supply chain planning functions
	Simulate anything anytime with unparalleled speed
	Act as a group in the interest of collective goals

The results

Where will the road lead?

When multiple business functions within an organization can concurrently and continuously plan, monitor, and respond in a single environment, companies radically shrink supply chain planning cycles and response times, while improving the accuracy of analysis and the profitability of actions.

Ultimately, leveraging RapidResponse as a central system for supply chain visibility, planning and analysis enables companies to **know sooner and act faster**. The business results of this reality have been proven time and again by Kinaxis customers.



Sample customer results

Cycle time improvements

- ▶ Total planning cycle reduced from 21 days to 12 days
- ▶ New (big) order assessment and commit process reduced from up to 14 days to 1-2 days
- ▶ Assessment of demand plan variation reduced from up to 2 weeks to minutes
- ▶ S&OP scenario creation and analysis reduced from 48 hours to <30 minutes
- ▶ Analysis of changes to build plans reduced from 56 hours to <1 hour
- ▶ Clear-to-build assessments reduced from 2 days to <1 hour

Operations performance improvements

- ▶ Supply chain planning efficiency improved by 15%
- ▶ Overall product lead times reduced by 50%
- ▶ Adherence to inventory targets above 95%
- ▶ Finished goods inventory reduced by 33%
- ▶ On-time delivery improved from 52% to 95%
- ▶ Expedites reduced by 83%



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About Kinaxis Inc.

Offering the industry's only concurrent planning solution, Kinaxis helps organizations around the world revolutionize their supply chain planning. Kinaxis RapidResponse, our cloud-based supply chain management software, connects your data, processes and people into a single harmonious environment. With a consolidated view of the entire supply chain, you can plan expected performance, monitor progress and respond to disconnects when reality hits. RapidResponse lets you know sooner and act faster, leading to reduced decision latency, and improved operational and financial performance. We can prove it. From implementation to expansion, we're here to help our customers with every step of their supply chain journey.

This white paper is accurate as of the date published and may be updated by Kinaxis from time to time at its discretion.

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