# THE DESIRE FOR SUPPLY CHAIN VISIBILITY

## CONVERTING DATA INTO PREDICTIVE ACTIONABLE INFORMATION

Nigel Issa describes the need for supply chains to improve their analytical ability

Throughout my 20 years in supply chain roles the desire for useable, insightful information to enable quality decision making has been a key theme. Managing supply chains at both a strategic and operational level requires information and a decision making capability that can make sense of an increasingly complex situation. Yet despite many years of investment in supply chain systems, few supply chain teams can easily access insightful supply chain information. In this article I will explore the reasons behind this, why supply chain teams need to develop an analytics capability and where analytics can make an impact on supply chain performance.

### Desire for Insight

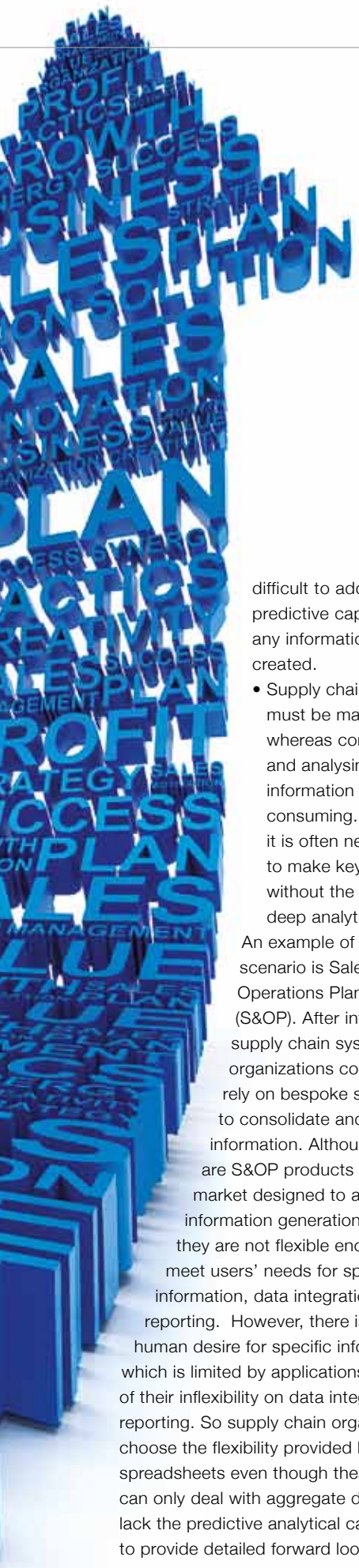
Supply chains are complex environments that generate a lot of data; yet, few organizations can easily answer the big P&L-impacting supply chain questions:

- How to maximize revenue from customers?
- How to improve product profitability?
- How to improve supply chain visibility and service?
- How to reduce the cost to serve?
- How to identify and manage supply chain risk?
- How to get supplier cost visibility and manage it?

Organizations have invested in information systems to manage their supply chains, creating big data datasets. Unfortunately, these are typically disparate datasets that organizations find extremely difficult to combine to create useable information and insight.

### Why is this?

- In a globalized, extended supply chain, ownership of supply chain data is dispersed among many organizations. No single organization has a complete view of the data available. With no common system and data standards amongst the organizations, the data that is available requires significant manipulation to be useful.
- Further fragmentation exists because organizations rarely have complete and integrated supply chain systems and data architecture. This creates gaps in coverage and data capture, so although a large amount of data is available it is difficult and time consuming to collate it to create useable insights.
- Supply chain management is about managing future situations— yet most data sets are backward looking. Supply chain teams therefore find it



> Analytics isn't business intelligence – rather it is about understanding the granular signals and trends from yesterday and today before applying them to predict what will happen in the future.

difficult to add a predictive capability to any information that is created.

- Supply chain decisions must be made quickly, whereas consolidating and analysing information is time consuming. Therefore, it is often necessary to make key decisions without the benefit of deep analytic insights.

An example of this scenario is Sales and Operations Planning (S&OP). After investing in supply chain systems many organizations continue to rely on bespoke spreadsheets to consolidate and present information. Although there are S&OP products on the market designed to automate the information generation process, they are not flexible enough to meet users' needs for specific information, data integration and reporting. However, there is an inherent human desire for specific information, which is limited by applications as a result of their inflexibility on data integration and reporting. So supply chain organizations choose the flexibility provided by bespoke spreadsheets even though these solutions can only deal with aggregate data and lack the predictive analytical capability to provide detailed forward looking insight. In short, although supply chains have become a big data environment, the disparate nature of the data supply chain means that leaders do not have the information, visibility and actionable evidence to manage increasingly complex supply chain operations.

## The Need for Supply Chain Analytics Capability

Why is this important? In today's supply chain world, key challenges need to be addressed and routinely managed to optimize profitability, service and cost, including the following:

- The pricing of product portfolios
- Increasing the number of new product introductions
- Increasing the product portfolio complexity as product ranges are customized to meet customer needs
- Delivering demand visibility
- Understanding and managing supply chain risk
- Effecting successful supplier management across a globalized supply base
- Optimizing aftermarket support to increase revenue and minimize penalties

Supply chain teams must generate insight to fix and control such challenges and then effectively use the information to manage the challenge on an ongoing basis. However, the data required to address these challenges is usually contained in a range of systems — both within and outside the organization and in people's minds in the form of experience and business rules.

With fragmented supply chain data architecture, supply chain teams typically have two choices. They can either build formal standardized architecture by plumbing together systems or pull data and build a network of spreadsheets. Both options are problematic; the first is slow and expensive and the second creates significant business risks. Now there is a third option — namely, to build an analytics platform to capture, standardize and enrich data from multiple sources and then run a range of analytics to provide customized insight. The output can be presented in interactive user interfaces to enable the supply chain teams to interact with the information and create additional human insight. The benefit of this approach is that it is fast to implement (and prove its benefit), customized to meet an organizations specific questions and data architecture and scalable across the organization.

Analytics isn't business intelligence — rather, it is about understanding the granular signals and trends from yesterday and today before employing them to predict what will happen in the future and recommend actions that will have a business impact.

Set out below is the way in which supply chain analytics link with the key supply chain issues and the types of insight required to provide enhanced decision making capability.

To illustrate this I have set out three case studies of analytics platforms in action:

**How to Make Better Pricing Decisions**

Daily pricing decisions have a significant

Creating a critical mass of this type of capability will be difficult so we expect many organizations to partner.

impact on profitability but judgement decisions based on basic business rules are left to sales teams. For one client we created an analytics platform to collate data that would influence pricing decisions including previous pricing for the item, price elasticity of customers, stock levels and customized business rules. The platform then makes pricing recommendations that the salesperson can use at point of price negotiation, delivered via an iPad application. This resulted in a 20% increase in revenue owing to more informed real time pricing decisions.

**The Impact of New Product Launches on Demand Forecasting**

Maintaining revenues and competing locally requires product customization, which increases the frequency and volume of new product launches. However, these disrupt supply chain demand forecasting as the impact is difficult to accurately predict and projected demand is often overly optimistic. Organizations need to reduce supply chain disruption by increasing the proportion of successful new product launches and making demand forecasts more realistic.

For another client we are building a tool that analyses all new product launches and identifies the success factors associated with them by scanning internal and external historical data. It then applies these success factors to proposed launches to identify their likely success profile, makes recommendations to increase success and then uses closely matched historic launches to refine demand forecasts, improving accuracy.

**Increase the Visibility of Strategic Supplier Relationships to Improve Performance**

Strategic supplier relationships are complex and difficult to manage for procurement category teams. With relationships spanning product development, quality management, capacity planning, risk assessment, delivery performance and payment terms, the data required to get real time visibility of overarching supplier performance is in a disparate, unstructured format. Collecting and reviewing the data is necessary to make sure strategic supplier performance reviews are undertaken on an infrequent basis.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We created a category spend micro-colony that provides a real time view of a category and supplier performance by consolidating both internal and external information flows and presenting the output in a customizable user interface. Analytics tools then scan the data against definable rules to identify cost saving opportunities, supply risks and non-conformance to contract and payment terms. The micro-colony enables a category or supplier manager to cut through the complexity of a strategic supplier relationship and — in real time — identify fact based actions that are required to improve performance.

**The Need to Find an Analytics Capability**

To run supply chains effectively, teams will need to answer the P&L impacting questions. This necessitates the analytics capability to rapidly and continuously do the following:

- Capture disparate data
- Link it
- Enrich it
- Design and run analytics
- Test the impact
- Refine the analytics
- Develop and present user interfaces
- Operationalize it within supply chain planning and execution processes

This requires a new set of team capabilities that address solution architects, big data manipulation, analytics scientists and software engineers. Since few organizations can build a critical mass of these competencies, new analytics service providers are emerging who provide analytics partnerships on a per-transaction or gain share basis. These partnerships will, over time, increase the skills of supply chain teams and drive an improvement in data quality to allow increasingly complex questions to be answered via analytics.

## Conclusion

As big data within the supply chain is brought within a predictive analytics environment, supply chain teams will finally have access to the insight required to address the complex P&L impacting questions that they have always aspired to answer. To create this analytics environment, supply chain teams and the wider organization will need to access an advanced analytics capability. Creating a critical mass of this type of capability independently will be difficult, so we expect many organizations to partner with analytics firms who can offer tested analytics solutions and, through economies of scale, deliver it at an efficient cost. •

**About the author**

**Nigel Issa is a principal in Opera Solutions and leads the EMEA supply chain practice. Opera Solutions is one of the world's leading advanced analytics firms.**