



early every enterprise has a high-level strategic initiative focused on analytics—and is applying advanced technologies to measure, manage and ultimately improve its overall performance. As supply chains have become more complex, with customers and suppliers spanning the globe, most organizations have recognized that measuring and managing this complicated business environment is more important than ever.

Also, while the need for detailed information has increased, technology costs have dropped—making analytics solutions more accessible than ever before. At the same time, the Web has emerged as a user-friendly, affordable platform for sharing information across the global supply chain.

The result is an explosion of business-intelligence efforts, with Forrester Research recently estimating that large enterprises may have 5–15 reporting and analysis solutions, with some companies using at least 20 separate products. (The Forrester Wave:™ “BI Reporting and Analysis Platforms, Q1 2006,” by Keith Gile, with Kyle McNabb, Connie Moore and Lucy Fossner, February 8, 2006.)

The word “separate” is especially revealing, because most businesses focus their analytics efforts at the departmental level, with each function using its own set of specific metrics and performance objectives. Too often, these narrow departmental efforts are not linked with one another or, more important, with the top-level goals of the organization.

To supplement internal reporting and analysis efforts, the market has spawned dozens of third-party vendors offering front-end toolkits that can pull raw data out of operational areas such as Human Resources, Finance, Sales and Marketing. Broader access to such data is obviously a positive development, but in many instances it has actually led to “information overload”—leaving many companies struggling to make sense of their new wealth of information.

While the effort to measure and improve performance can pay huge dividends, most companies are drowning in a deluge of business metrics, and often unable to distinguish between high- and low-priority insights. Executives struggle to keep their businesses focused on the most pressing challenges facing the organization, while lower-level departmental objectives may bear little or no relation to these larger issues. What has been sacrificed is the shared “enterprise view” that can lead organizations to the next level of performance.

With so much data available, so many separate business intelligence systems at work and a global environment that grows in complexity daily, the current generation of analytics tools is proving insufficient to meet the needs of the typical business. It’s time for a new generation of supply chain analytics.

The New Analytics

Business intelligence is getting smarter.

by Jim Caudill and Rajat Bhargava

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Requirements for the new analytics

This new generation of supply chain analytics must overcome the shortcomings of current solutions. The most obvious challenge is integrating the disparate business-intelligence efforts that already exist within the typical enterprise. New solutions must allow for a complete view of the enterprise, as well as of the diverse business partners that form the extended value chain. Business metrics must be aligned with overall corporate objectives and targets and support one another. While there will always be some metrics within an organization that work counter to each other, analytics solutions should always support the achievement of broad organizational goals, not just improve a single metric.

To bring together a broad range of departmental information, the new solutions must be flexible and versatile enough to link to such commonly used tools as Microsoft® Excel spreadsheets, enterprise resource planning (ERP) applications and legacy systems. This linkage makes it possible to create a central repository for all information related to performance measurement and management.

The ideal solution should not depend on specific tool kits, or differentiate among various data sources. Instead, it should integrate these distinct tools by creating rich data models that clarify the relationship between individual metrics and overall business performance. While it might seem more appealing to eliminate the separate tools and business-intelligence systems already established in most organizations—replacing them with a new and improved overarching solution—this is simply not realistic. New analytics solutions must be based on leveraging the significant investments that companies have already made in business-intelligence technologies and processes.

One way to accomplish this is by creating an analytics solution based on the most commonly used productivity platform today, Microsoft® Office. Since Excel has emerged in the business world as the de facto reporting

standard—and millions of users are already familiar with the Microsoft Office environment—any solution for business today should build on these skills. Certainly, new-generation analytics solutions must also capitalize on users' familiarity and comfort with Web-based interfaces. The Internet is the perfect platform for viewing performance data, as well as for generating and sharing reports across the global supply chain.

A supply chain analytics solution that is people-friendly, familiar and easy to use enables an organization to leverage one of its greatest assets: the skills and knowledge of its employees. New-generation tools must enable employees across the business to collaborate on, and share, the critical supply chain information that supports the overall success of the business.

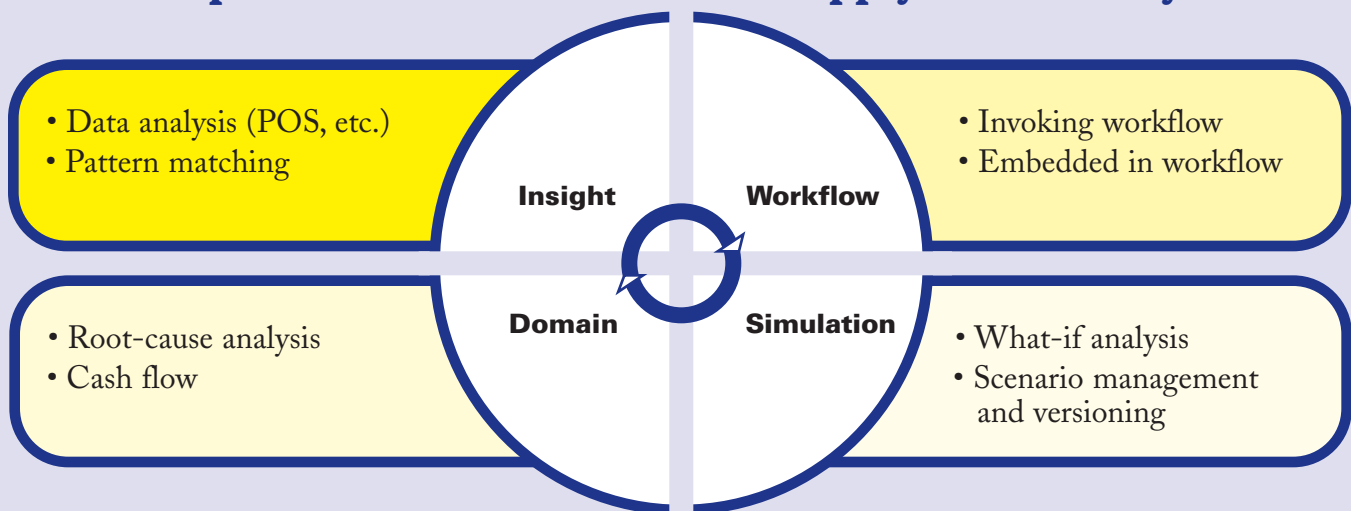
Finally, as organization charts and supply chains become even more complex, solution customization is emerging as an absolute requirement. Any packaged analytics solution will necessarily incorporate a number of predefined performance metrics, key performance indicators and standard reports, based on industry best practices. But new-generation solutions will also need to offer a high degree of customization, so that metrics and reports can be refined to reflect the unique attributes and challenges of each individual organization.

Focus on performance metrics

While the new generation of analytics solutions must begin by linking and integrating the systems and tools that already exist within a business, a far more important challenge is making strategic sense of the enormous amount of information generated daily within the average organization.

Through meaningful and sophisticated data models, the new analytics help businesses to filter out the “noise” created by multiple business-intelligence efforts, so that they can recognize the information that is truly relevant to their top-level strategic goals. By pinpointing the root

Components of New-Generation Supply Chain Analytics



causes of performance issues—whether these lie in internal operations issues, supplier shortfalls, transportation challenges or underperforming market segments—the new solutions must provide executives with information that is truly operational.

Surprisingly few existing analytics solutions link individual performance issues to their ultimate impact on cash flow—which is certainly a key indicator of overall business health. This is a shortcoming that emerging analytics solutions will need to address.

Emerging solutions must have the flexibility to be broad and strategic, as well as focused and tactical. By embedding analytics into the key workflows of the business, new-generation solutions can accommodate the complexity of today's global environment, while offering a high-level view of the organization's most critical issues.

In addition, these analytics solutions must be flexible enough to recognize the ever-changing nature of the modern business environment. Unlike traditional measures—which are increasingly recognized as being too static and narrow to reflect today's dynamic, collaboration-oriented and continuously moving environment—analytics cannot work with a static “snapshot” of the organization. They must consider both historical trends and forward-looking data. In a global business climate that is in constant flux, that is the only way to capture a true and realistic sense of the organization's performance over time.

Related to this is the increasingly important capability to perform “what-if” decision scenarios—perhaps the most exciting aspect of the new-generation solutions. These solutions will be able to identify potential performance issues and help executives resolve these issues—and correct the organization's course—by simulating the impact of various strategies and modeling likely outcomes. As this valuable capability becomes widely available, businesses will be able to answer the question “How are we doing today?” and its corollary, “Where should we go from here?” Once these critical questions have been answered, analytics solutions must also have the ability to bring the right people and systems together to support the new direction for the business.

The new analytics will have a long list of demands placed upon them—but, if matched by a high level of executive commitment, they should be able to lead the way to a new level of success for the forward-looking businesses that choose to adopt them. This new generation of solutions will herald a new era of business intelligence, giving new meaning to the term by making analytics truly intelligent.

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Raising Your Company's “BIQ”

Nearly every enterprise can improve its “BIQ”—business intelligence quotient—by applying new-generation concepts. While the next era of business intelligence is just beginning, some forward-looking organizations are already seeing the bottom-line benefits of using the new analytics to support critical strategic decisions. Following are examples of high-impact analytics at work in three of the world's leading businesses.

Looking beyond departmental metrics

A large specialty retailer recently used supply chain analytics to discover that it was focusing too much attention on a functional measure—transportation costs—while overlooking significant cash flow and inventory benefits. Since transportation costs represent this company's single greatest operational expense, the business had historically focused on minimizing shipments by sending full truckloads to its stores every five days. A new-generation analytics solution helped this retailer to recognize that it was losing sales opportunities due to frequent stockouts, as well as investing heavily in inventory trapped in the channel. Today, the retailer sends partial truckloads every 3.5 days—and the added transportation cost is more than offset by increased revenues and decreased inventory levels.

Aligning metrics with overall objectives

An automotive supplier was applying the conventional wisdom within its industry by focusing on “manufacturing cost per unit” as a key performance measure. However, an analytics solution revealed that the actions needed to minimize unit costs—manufacturing in large runs, then carrying enormous inventories—were at odds with the organization's overall goals, which included increasing flexibility to respond to fluctuating market demand. Today, the company has reduced its overall costs, and increased its corporate agility, by focusing on a new set of metrics that is directly linked to its highest-level strategic objectives.

Applying analytics to business partners

A major consumer-products manufacturer used new-generation supply chain analytics to evaluate the profitability of its vendor-managed inventory (VMI) agreement with a large retailer. While the manufacturer had traditionally focused its attention on such operational issues as forecast accuracy, service levels and replenishment rates, an innovative analytics solution revealed an opportunity for enhanced profitability in a surprising place: the accounting department. By revising its price protection, end-of-life liability and payment terms, the manufacturer was able to significantly increase cash flow—and improve the overall profitability of the VMI initiative.

The Demands on Business Intelligence

What demands must these new-generation solutions meet? To define the ideal analytics solution for a new era, it's important to look at the needs that gave rise to the field of business intelligence in the first place. Several trends have led to the need for the average business—not just the largest corporations—to focus significant resources on collecting and analyzing performance data.

Increasing supply chain complexity

The globalization of the business world has led to supply chains that are longer and more complex than ever before. Businesses are strategically partnering with an expanding variety of domestic and global suppliers, which means that they need to collect and manage more information than ever to gain visibility beyond their own internal operations. As the virtual walls of many businesses are pushed to the far corners of the world, their technology solutions—and their analytics processes—are being challenged to grow sufficiently in size and sophistication. To manage a complex global supply chain and to achieve an enterprise-wide perspective on their challenges and opportunities, businesses need the most complete information possible. Companies need clear visibility into supplier lead times, quality levels and inventory disposition—no matter where vendors are located.

Broader market reach

The rapid rise of new sales channels, including the Internet, has made it possible for more businesses to reach international markets that traditionally seemed beyond their grasp—making it a strategic necessity to study and understand the needs of diverse customer groups, some of whom may live on the other side of the world. For these expanding markets, enterprises require a complete view of demand seasonality, business cycles and consumer preferences.

Growing risks

A more complex supply chain brings increased levels of risk, and the new analytics must evolve to help companies understand and manage a variety of inherent dangers. As more businesses are discovering, risks can lurk along the length of the global supply chain, including political instability, shifting exchange rates, supplier reliability issues, carrier-capacity constraints, limited product shelf-life and other uncertainties.

Stricter compliance

Tightening governmental regulations at home have also made accurate business reporting an imperative. Increasingly, financial managers will have to understand supply chain developments that will have an impact on the bottom line of the business. In addition, new environmental regulations demand that companies of all types collect and analyze data related to their materials procurement and disposal activities. Along with the increasing need for compliance in various departments comes the need to effectively gather and integrate information from all areas of the business.

While these trends may have given rise to the current generation of analytics tools—and existing solutions may have helped to meet these challenges in the past—the pace of business change has recently outstripped the growth of innovation in analytics tools. In an increasingly global and complex environment, businesses must look toward a new generation of analytics solutions that will provide a view not only of the individual “trees” that stand in their path, but also the increasingly complex “forest” in which they operate. This requires an entirely new way of thinking about supply chain analytics, and the role of business intelligence in forging new paths.

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