

# BUSINESS INTELLIGENCE: THE DEFINITIVE GUIDE FOR MID-SIZE ORGANIZATIONS

Improve the Efficiency and Effectiveness of Your Organization—Regardless of Its Size

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## INTRODUCTION

Your organization's focus has been on acquiring customers, increasing revenues and profitability, and outpacing the competition. And while your organization has continued to improve its operating efficiencies (sometimes by quickly learning from past mistakes), you feel your company should be spending more time analyzing what's going on and planning for the future—rather than having your employees constantly running around trying to solve operational problems and putting out fires.

Furthermore you need the ability to determine where to concentrate your efforts. You can't check every detail yet you would like to be able to monitor your operations and focus on quickly finding and resolving potential problems while identifying and leveraging new opportunities. You want to ensure that employee and departmental metrics are aligned with your organization's strategic goals.

You realize that your organization does not have the resources of a Fortune 500 company, but you believe that—man-for-man and woman-for-woman—your company's employees are more passionate about their jobs and more committed to its customers. Your company may be relatively small right now, but it's on a high-growth path. You've heard the term "business intelligence" and know that large companies—and maybe even your direct competitors—are using it to obtain a competitive advantage; however, your organization's primary analysis tool is a spreadsheet.

You were there when your company's first location was in its founder's garage. Now that your operations have graduated from the garage to real offices, isn't it time your company's analysis capabilities graduated from spreadsheets to more powerful tools as well?

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**Audience:** This paper is intended for mid- to senior-level IT leaders and business leaders who need to get better information to make more informed decisions.

# SIGNS YOUR ORGANIZATION MAY NEED BUSINESS INTELLIGENCE

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The following scenarios represent typical situations that could benefit from improved business intelligence (BI):

- **Multiple versions of the truth.** Interdepartmental meetings frequently turn into shouting matches as participants argue about whose spreadsheet has the correct figures.
- **Inability to perform in-depth analysis.** Your company knows which of its retail outlets have the greatest sales volume, but it doesn't know which products have the highest sales.
- **Unable to locate important information.** Fred in accounting mentioned that a report showing year-over-year growth for each customer has been posted to the company's intranet. However, you have no idea how to find it.
- **Need for simple-to-use production reporting technology.** Your accounting department uses a word processor to generate customer invoices. Customers frequently complain about being invoiced twice for the same purchase or shipment.
- **Existing BI technology is too difficult to use.** Your company's sales manager used analysis tools at her former job that she insisted be used in your company as well. Although your company has invested in several licenses, users that have tried to use these tools have given up in frustration and rely exclusively on spreadsheets instead.
- **Historical values are not being retained.** The sales department is conducting account reviews and wishes to compare each customer's sales-to-date this year with its sales-to-date at this time last year. Sales maintains a spreadsheet for this year's results, but the person who maintained the spreadsheet last year has left the company—and no one has any idea what happened to last year's spreadsheet.

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- **Weak or nonexistent BI technology limits your company's operational flexibility.** Your company has grown to the point where its customer base has expanded to the hundreds. While it values every customer, it would like to identify the top 10 in sales volume each month and offer them extra attention and special incentives.
  - **Minor problems seem to get the same attention as major ones.** While all problems need to ultimately be addressed, you should be able to identify which ones need immediate attention. Oftentimes, you can only identify projects that are behind schedule or departments that are over-budget after they are deeply in trouble.
  - **Operations not aligned with strategic goals.** Although your company has defined its strategic goals you are not sure if they are in tune with its daily operations. Several managers have told you that while they know how to optimize the work of their own departments, they would like to better understand how their efforts support the overall goals of the organization.
  - **Inability to comply with government reporting requirements.** While your company is still relatively young, it hopes to one day go public. In your role as IT director, you want to take steps now to provide proper audit trails and data lineage to ensure that your CEO and CFO have confidence in the accuracy.

# WHAT IS BUSINESS INTELLIGENCE, AND WHY MID-SIZE ORGANIZATIONS NEED IT

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## HOW BI IS HELPING MID-SIZE ORGANIZATIONS

BI, also referred to as “decision support,” allows organizations to better understand, analyze, and even predict what’s occurring in their company. BI helps your organization turn data into useful and meaningful information and then distribute this information to those that need it, when they need it—so that they can make timely and better-informed decisions. It allows organizations to combine data from a wide variety of sources and see an integrated, up-to-date, and 360-degree view.

This is especially important for medium-size companies, who—while not having the vast resources of industry giants—are typically able to more quickly implement business decisions. BI provides a win-win solution for IT and business users by allowing the IT department to be more productive in working with its business users to service special requests—while permitting these business users to become more self-sufficient. Operations and analysis are two sides of the business, and BI allows IT to be a valued partner in both.

BI can be used by a mid-size organization to:

- Determine the inventory level of a product or part
- Identify its best selling products, and see if this holds true in all of its retail outlets
- Identify customers that are cutting back on their purchases so that special inducements can be offered to retain them
- Implement dashboards and scorecards so that executives and supervisors can quickly recognize operational exceptions, or when expenses are likely to exceed budget
- Establish and monitor performance metrics and take corrective actions if they are in danger of not being met
- Compare departmental turnover to identify potential morale problems
- Compare year-to-date sales for this year with last year’s, and forecast what sales are likely to be for the entire year
- Track customer orders and desired ship dates against finished goods inventory, and adjust the manufacturing production cycle and supply chain logistics to reduce inventory carrying costs
- Integrate operational, spreadsheet, and historic data for analysis purposes, while helping to stamp out “spreadsheet chaos”—to provide consistency and “a single version of the truth” for the organization

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- Provide business users with the ability to perform their own ad hoc analysis, without having to tie up scarce IT resources
  - Be better able to understand and analyze their own operations and their interactions with their customer, in order to gain a competitive edge over their competitors.
  - Align daily operations with strategic objectives and quickly recognize when they are not in agreement.

### **BI COMPONENTS EXPLAINED**

The BI spectrum is very broad in terms of its tools and functionality. At its core are the traditional capabilities of query, reporting, and analysis. This is complemented by data quality and data integration to accurately and consistently consolidate data from multiple sources. Dashboards and other visualization techniques can help users quickly understand analysis results and are often considered part of the BI spectrum—as are search capabilities to locate information and reports, predictive analysis to discover hidden patterns and enable what-if analysis, and scorecards and performance management to help monitor business metrics and key performance indicators (KPIs) such as customer satisfaction, profitability, and sales per employee in order to and align individual and departmental metrics and efforts with the organization's strategic goals .

A simple query might access your company's data to ask, for example, "What were total sales to customer ABC Corporation last December?", or "What's the current salary of the employee with employee number 157?", or even "How much of part 123 do we have in inventory?" Most query tools also provide simple reporting capabilities and could, for example, also be used to generate a simple report listing the accrued vacation of all employees, sorted and totaled by department.

Enterprise or production reporting typically involves high-volume, high-resolution reports that are run on a regular basis. An example might be a sales manager report showing monthly sales and associated sales commissions sorted by salesperson and then by customer. The report distribution would likely be controlled so that each sales manager could only see entries for his or her salespeople. It might be emailed to them or viewed through a web browser. Enterprise reports can also be used to generate customer statements or invoices or individualized benefit summaries for each of your employees.

With advanced analysis capabilities, users can view data across multiple classifications or dimensions (for example: product, customer, location, time period, salesperson, etc.) and slice-and-dice the data to look at various combinations, such as the sales in each region for December or which products each customer purchased last year.

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Advanced analysis functionality also permits organizations to define hierarchies so that, for example, sales could first be viewed for each region and then the user could drill down to view the sales in each state or country in each region. Further drill down would allow the user to view the sales of each store within each state or country. It would also be possible to see the sales of each product in each store or the sales for each salesperson for each product. These advanced analysis capabilities make it easy to compare the results from one time period with another so that this month's (or some other time period's) total sales of a product could be compared to the same month last year—while allowing the user to drill down and perform year-over-year comparisons at levels such as by store, by customer, or by salesperson.

Other advanced analysis capabilities, such as filtering, can be used to include or exclude specific stores, regions, products, salespeople, or time periods in the analysis—and the ability to look at the top 25 or bottom 25 (or any other number) best- or worst-performing products, stores, or salespeople. Being able to look at results across several dimensions and easily request the top or bottom performers—when combined with drill-down, slice-and-dice, and filtering capabilities—provide powerful but easy-to-use analysis capabilities.

Star Trac, of Irvine, California, is a mid-sized manufacturer of quality physical fitness equipment serving a global market. Like many rapidly growing companies, its data was spread across multiple silos—making it difficult to aggregate and reconcile data to facilitate better decision-making and align key objectives and business processes. Star Trac needed a product suite that offered flexible reporting, ad hoc query and analysis, interactive dashboards, and visual analytics. “Fast easy business intelligence will save us time, boost productivity, and deliver the data to help us grow the business,” says Jeff Kuckenbaker, senior director of information systems. “We’ll use BusinessObjects™ Edge Series to deliver information across the company, so everyone can better understand how to execute our strategies for growth.”

Simple reports were initially designed for passive viewing, while products with advanced analysis features provide interactive analysis capabilities. Although many of these advanced capabilities were once only available in specialized online analytical processing (OLAP) products that involved the use of proprietary databases and highly skilled technical specialists, OLAP functionality is now often incorporated into query and analysis tools, thus allowing business users to perform interactive analysis and, for example, click on a number in a report to drill down to and analyze the underlying details. Effective BI should be an interactive process, and query and analysis tools—with embedded OLAP capabilities—permit business users to perform dynamic analyses on their data. As most IT practitioners will attest to, if a user

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requests a static report, once it's received, the user will likely ask for additional modifications and details; query and analysis tools allow business users to formulate a high-level query and then immediately explore the underlying details on their own.

Core BI technology—like query, reporting, and interactive analysis—is used to view or analyze what is or has already occurred, while data mining and predictive analysis allows users to predict what may occur in the future. BI uses sophisticated statistical techniques to find relationships that are hidden or not obvious. It can be used to identify which factors closely relate to customer churn and attrition or which factors (e.g., a prospect's income, education, age, last purchase amount, etc.) were most closely related to a successful response in a marketing campaign.

A picture is worth a thousand numbers, and highly graphical techniques—including dashboards—strongly complements the other members of the BI spectrum. Using graphical gauges analogous to an automobile dashboard and symbols such as traffic lights—where red represents an alert condition and yellow a warning—users can quickly identify exception conditions. It has often been said, “If you can't measure it, you can't manage it.” Scorecards and other performance management tools enable you to establish business metrics, update and monitor the results, and communicate them as appropriate so that minor problems can be identified early-on and corrective action quickly taken. Dashboards are frequently used to display performance metrics and can allow users to drill down from the visual image to view the underlying detail. Other visualization techniques include “slider bars,” which allow a user to perform what-if analysis, and, for example, show how profit margins would increase if maintenance revenues were increased or distribution expense reduced.

Online outlet retailer Overstock.com uses dashboards to give employees an at-a-glance view of important company data—such as daily sales history, item status, warehouse inventory, scheduled inbound/outbound deliveries, and more. The dashboards track revenue, gross margins, advertising expenses, how many consumers visit the site, and how many products are sold each day. Employees can also drill down deeper into the information for more insight. “We can now give our employees real-time sales and shipping data all the way down to the SKU level,” says Jack Garzella, VP, Overstock.com.

Business intelligence is not just about tools and their applications; it's also concerned with distribution and control. Reports should be able to be published to the web and delivered to a user's preferred mobile device. However, not every employee should have access to every report or analysis—and administration, monitoring, security, and control are also part of the BI environment. Furthermore, the use of commercial BI products does not necessarily mean the elimination of spreadsheets; rather, BI can provide controlled linkage of spreadsheets to up-to-date data while enforcing proper distribution and control so that “spreadsheet chaos” is no longer

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an issue, and trying to determine whose spreadsheet is “more correct” is no longer part of every company meeting. The ability to locate and search out relevant reports is also part of the BI landscape, as a report is of little value if no one knows it exists or how to find it.

Central Maine Healthcare (CMHC), a mid-sized organization experiencing significant growth, utilizes BI to help align its business strategies with metrics and key performance indicators drawn from across the organization. Its aim was to make this information available in the context of its business goals so that managers could see how their decisions mapped to CMCH's strategic objectives. According to Wayne Bennett, CMCH's VP of finance, “With BusinessObjects Edge Series, we can democratize reporting, visualization, and dashboarding—so everyone is on the same page regarding our corporate strategies.”

In addition to BI tools, some vendors offer BI-based analytic applications covering a wide range of business functions and industries. Areas of focus include long-range planning, budgeting and planning, financial reporting and consolidation, incentive compensation management, activity-based costing, metrics, and scorecards. Other functional areas might include applications for sales analysis and campaign management, contact center analysis, product and service analysis, workforce analysis, supply chain intelligence, and compliance. Examples of industry applications include those oriented towards telecommunications, healthcare, government, retailing, and consumer packaged goods. These applications are often available both from the BI vendor and its software development partners that utilize the vendor's BI technology as the development platform for specialized industry and functional analytic applications. While mid-size organizations moving from a spreadsheet environment to formal BI tools may not initially invest in analytic applications—as these organizations grow, these applications will be there when they're ready to use them.

The use of BI is not limited to data warehouse environments, in which snapshots of data from multiple systems are consolidated for analysis; it can be used with operational systems as well.

When deployed against operational systems (i.e., those that help run or operate the business), it might be used to show current values—such as current inventory levels, outstanding customer balances, salaries, or student attendance. When deployed against a data warehouse, which contains data values taken at periodic points in time and frequently sourced from several operational systems through the use of data integration and data quality technology, it often involves comparing one period's results with other period's results. A typical use would be to compare this quarter's sales against the same quarter in each of the preceding three years. Some data integration vendors offer connectors or integration kits to facilitate access to commercial enterprise application software products—such as SAP and Oracle's JD



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Edwards, PeopleSoft, and Siebel applications.

Data quality is of paramount importance in both operational systems and data warehouses. In an operational environment, no one wants to ship the wrong order to the wrong address, deliver 50 kilograms of a product when 50 pounds were ordered, provide a patient with the wrong medication, or transfer funds to the wrong bank account. In a data warehouse environment, no one wants to make decisions based on incomplete, incorrect, or inconsistent data. The deployment of data quality tools can help ensure that this does not happen.

By using BI against both operational systems and data warehouses, a company can improve its daily operations, and also compare current results with historic values to identify trends and head off problems before they become more serious.

### **THE BENEFITS OF BI**

A major part of any manager's job is to make decisions. If you can improve the overall quality of your organization's decision-making process, you'll improve the overall effectiveness of your organization. Business intelligence will help your organization make better decisions. Because of this, BI was initially referred to as a decision support system.

BI allows business users to analyze and better understand their organization's plans and results. It provides insight into what's working correctly while identifying potential problem areas in time for corrective actions to be taken. It can be used to recognize opportunities as well as problems, and alert your organization to potential issues when exception conditions occur—such as sales dropping 20% below forecast or inventory falling below a threshold value.

Since BI product suites include a variety of components, organizations can pick those that are most appropriate for the task at hand and for the experience level of their individual employees. While in the past, only technical specialists typically used BI tools, most business people can now successfully use them as well. This has served to democratize BI usage throughout organizations. The role of IT has positively evolved from one of digging out from its historic report request backlog to one of monitoring and administering BI usage, and setting the appropriate controls relative to who can access what data. BI technology has truly brought “(analytical) power to the (business) people.” This BI self-sufficiency has provided business users with quicker response time and the ability to drill down and perform interactive analysis while enabling IT to more effectively and more efficiently serve its organizations.

While many managers and supervisors pride themselves on their intuition, BI provides tools to help verify their insights and even discover new ones. It permits business users to explore results at a high level and then drill down to analyze the underlying details. Business intelligence is one of the primary keys to effective decision-making.

# APPROACHES TO IMPLEMENTING BI

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Beginning a BI initiative is not necessarily expensive, especially if you choose a vendor with a suite of products that allows you to easily expand your BI usage and implement the tools you need as your business continues to grow and expand.

As your company transitions from undisciplined spreadsheet environments, it often makes sense to start small—perhaps deploying BI against one system with a query and reporting tool. Your company can expand its deployments to additional systems and use additional capabilities as the organization quickly masters the technology. One place to start is with the system that has the greatest reports backlog. While the IT department can certainly use BI tools to reduce this backlog, the ultimate goal should be to make your business users self-sufficient and less dependent on IT for their analyses.

IT can assist business users by using the “guided analysis” capabilities of some BI tools to create parameter-driven reports with user-selected filtering criteria that business users can use to perform their own customized analyses. As users gain experience, some of them may even generate their own reports and contribute them to a corporate report library. It’s up to each individual company to determine the approach that works best for it. In general, as an organization discovers the benefits of BI, usage is likely to quickly spread throughout the organization. Using commercial BI tools does not mean that your organization has to abandon spreadsheets. Instead, IT needs to establish procedures for proper distribution and control and acquire BI tools that can interface with them.

Get2Hawaii, a growing provider of dynamic vacation packaging services, uses BI to turn information into a unique differentiator and get more people interested in its service. BI enables the company to go above and beyond the standard services that other vacation companies offer. As a small and growing business, Get2Hawaii needs its employees to focus on their jobs, and not waste time programming reports or worrying if the information they use is reliable. Business intelligence gives it this peace of mind.

At any point in time, there will be a range of user experts and user novices. The IT department can set up and enforce policies as to who can access what reports and who can create their own reports. If your organization is using a commercial software package, popular BI tools, such as Crystal Reports, may have been bundled with it, and your organization may already have experience using it.

After using BI for operational purposes, organizations will likely want to use it for deeper analysis, often requiring the comparison of one period’s results against another period’s results. This is facilitated by the use of a data warehouse that contains historical data values—thus making time-period comparisons possible. A data warehouse will likely contain data from many sources, and data integration

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software will provide the enabling technology for loading the warehouse, while data quality software will help ensure that the consolidated data is both accurate and consistent. Many organizations have attempted to build data warehouses that, for all practical purposes, were data dumps; the use of data quality software would have prevented this. One of the oldest IT adages is “garbage in, garbage out,” and this applies to both data warehouses and operational systems.

Some vendors also offer their BI tools through an “on-demand” or software as a service delivery vehicle. For example, the vendor provides the distribution point for your BI reports, allowing authorized employees and partners to access them on the vendor’s host server using their web browsers. This minimizes upfront hardware costs associated with an “on-premises” server, while still allowing smaller companies to benefit from BI; it provides an economical entry point for companies that want to get started.

National University of Health Sciences (NUHS), a premier institution for health science education, uses on-demand business intelligence to eliminate information silos so that everyone in the organization is looking at the same information. Instead of emailing PDFs of reports and having a shared folder on its network, NUHS now hosts its reports on the [crystalreports.com](http://crystalreports.com) on-demand service and creates report groups and defines user and group permissions. Users are able to view those reports on the web—whether or not they have Crystal Reports® installed.

Although some companies have been tempted to avoid the use of commercial BI products by using their information technology employees to create custom programs for each business user request, this approach can create a situation where IT is continually putting out fires or dealing with an ever-increasing report request backlog. Often, companies that have used this approach find that they need to hire additional IT workers just to keep up with user requests. Most companies that start off writing custom code eventually acquire commercial BI products, if only to enable their IT workers to be more productive and more responsive.


Some companies have even allowed business users to submit their own SQL queries; this usually is nipped in the bud after an incorrectly formulated SQL query results in an answer that’s technically correct but not what the user was really looking for or expected. For example, someone requesting a list of employees with salaries greater than \$200,000 and less than \$20,000 is likely looking for both higher-paid and lower-paid employees; however, this list would not contain any employees at all since an employee’s salary cannot be both over \$200,000 and under \$20,000!

# WHAT TO LOOK FOR IN BI PRODUCTS

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When selecting business intelligence products, it's important to consider other factors in addition to specific product features—such as ease-of-use, ease-of-implementation and administration, scalability, user interface options, and how well it integrates into your company's existing and future platform environment. Among the most important of these are:

- An integrated product suite with a range of capabilities that your company can deploy as needed. As your company grows, it should not outgrow the capabilities of its BI vendor. In addition, individual users may require different capabilities, and an integrated product suite provides the greatest deployment flexibility.
- The scalability to handle an increased user base as your organization grows and usage increases. As your organization gains experience with BI and its usefulness becomes evident, it's quite likely that its usage will quickly spread.
- Data quality functionality to ensure a trustworthy data foundation so that your company is analyzing accurate, consistent, and complete data. High-quality data is a requirement for high-quality decisions, and it avoids the problems associated with having "multiple versions of the truth."
- The ability to access and integrate a wide variety of disparate data sources. Although many companies initially run their analyses against individual systems, the time will come when data from several sources will be needed to see the total picture, and a product suite that includes data integration technology and the ability to have the data appear as if it were located in a single source will allow you to easily accomplish this.
- Integration with your desktop software, in particular Microsoft Office. This will allow users to complement their BI with their familiar desktop tools and reduce your organization's training requirements.
- Support for multiple operating systems, not just Windows, will allow your IT department to keep your future options open and not constrain your organization to a single operating system. Linux is rapidly growing in importance, and your BI products should support it.

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- Ease of initial installation and deployment, as well as ease of adding additional users will not only make it easier to quickly add new users, but will increase the productivity of your IT department.
  - Powerful but easy-to-use administration tools will allow your IT department to control “who can access what” and provide a level of security and privacy that’s simply not possible in a “spreadsheet-only” environment. Your data is an organizational asset that your BI products should help you protect, while allowing those that need to analyze it to do so effectively.
  - Robust report cataloging and distribution capabilities that allow authorized business users to receive their analyses on both an upon-request and periodic-subscription basis. The capability to alert users when certain events or value thresholds occur is also important.
  - The ability to deliver reports to a wide variety of desktop and mobile devices, with content formatted to match the capabilities of these devices.
  - Strong search capabilities that facilitate finding needed information and locating relevant analyses and reports.
  - Business users speak in business terms, and BI tools should allow them to continue to do so. A product suite with a semantic layer transparently isolates users from underlying technical complexities and allows them to focus on their business issues, not technical software details. For users that need to know where data was sourced from and the underlying formulas (e.g., how are “gross profit” and “net profit” computed?), data lineage details should also be readily available.

# WHAT TO LOOK FOR IN A BI VENDOR

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When selecting a business intelligence vendor, it's important to consider many factors—including vendor experience, reputation, and stability—as well as its professional services capabilities and the quality and strength of its partnerships. Among the most important of these are:

- Consider a vendor's education and training capabilities. While many vendors offer on-site and in-house training, a few have developed self-paced computer-based training that can assist new users in getting started or help experienced users quickly master advanced product capabilities.
- Select a vendor with a proven track record and a history of successful growth—both in revenues and in capabilities. Solid growth and profitability indicates both astute management and product acceptance. It allows the vendor to better serve its customers and invest in the future. Choose a vendor that's large enough to retain its independence.
- A vendor with a history of acquiring complementary technology and successfully integrating it with its own is likely to be able to quickly react to new market demands and be able to supply the technology your company needs—both now and in the future.
- Seek out a vendor with a history of vision and innovation. A vendor with a proven track record of innovation and industry leadership is likely not only to meet the current needs of its customers but also to anticipate and meet their future requirements as well.
- As BI usage increases, it's likely that your organization will deploy it against additional systems and additional databases. While a database vendor may offer its own proprietary BI technology, what happens when your organization decides to use another database? A major advantage of choosing a BI specialist as your BI vendor is its ability to work with a wide variety of data sources.

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- Consider the vendor's product delivery options. While many vendors will only allow you to license their products to run on your company's servers, others also provide "on-demand" or software as a service (SaaS) options—whereby the vendor hosts the software on its own servers, and organizations use it through their web browsers. The SaaS model can be especially appealing to small companies that wish to minimize upfront startup costs, while still having the ability to bring the software in-house at a future time when it would make economic sense.
  - A vendor with a large cadre of partners—both software vendors and consultants—will prove invaluable. One measure of "openness" is the number of other software products that a BI tool works with, and a vendor that actively encourages partnerships is likely to have little problem integrating its technology with your current and future software environments. Vendors with a strong base of consulting partners make it easier to find outside expertise should your organization have special requirements.
  - A vendor with a product set that provides your organization with a strong growth path and works in both operational systems and data warehousing environments will provide maximum deployment flexibility.
  - Your organization will likely grow and expand. It may not be a giant today, but it could be one tomorrow. Choose a vendor that has a successful track record and extensive experience with organizations of all sizes.
  - If you expect to someday operate on an international scale, a vendor with a multinational presence is highly desirable.

# CONCLUSION

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Managers have the responsibility to make the best decision possible, based upon the data available to them at the time. If their ability to analyze this data and transform it into useful information is improved, the overall quality of their decisions will be improved as well.

Business intelligence provides a spectrum of tools and solutions to achieve this. It's the underlying technology behind, and a key component for, more effective decision-making. By helping to align individual and departmental efforts with overall corporate strategies it should lead to improved organizational results.

While many small or medium-size companies have relied on spreadsheets as their primary BI tool, most of them have come to realize that this is a stopgap solution and one that's apt to lead to data chaos and inconsistent analysis results. This is not to say that spreadsheets should be abandoned; rather they should be a part of an organization's BI toolset, especially if used in conjunction with a commercial BI product suite that integrates with spreadsheet environments.

Shouldn't your organization be using business intelligence technology to help it run its business more intelligently?



# ABOUT MAS STRATEGIES

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Michael A. Schiff is the founder and principal analyst of MAS Strategies. MAS Strategies specializes in helping vendors market and position their business intelligence and data warehousing products in today's highly competitive market. He has over 30 years of experience in the information technology industry.

Michael was the vice president of the Data Warehousing and Business Intelligence service at Current Analysis, Inc., an industry analyst firm where he provided tactical market intelligence and analysis while managing the company's E-Business analyst team. He was the executive director, data warehousing and advanced decision support, for Oracle Corporation's Public Sector Group and director of Software AG's Data Management program. In 1984, while at Digital Equipment Corporation, he formulated the architecture for one of the first successful data warehouse implementations. In previous positions as IT director and systems and programming manager he acquired practical, first-hand, knowledge of the technical, business, and political realities that must be addressed for any successful systems implementation or product launch.

Michael earned his Bachelor and Master of Science degrees from MIT's Sloan School of Management where he specialized in operations research as an undergraduate, and in information systems as a graduate.

For further information about MAS Strategies, visit its web site at: [www.mas-strategies.com](http://www.mas-strategies.com).

# ABOUT BUSINESS OBJECTS

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Business Objects has been a pioneer in business intelligence (BI) since the dawn of the category. Today, as the world's leading BI software company, Business Objects transforms the way the world works through intelligent information. The company helps illuminate understanding and decision-making at more than 44,000 organizations around the globe. Through a combination of innovative technology, global consulting and education services, and the industry's strongest and most diverse partner network, Business Objects enables companies of all sizes to make transformative business decisions based on intelligent, accurate, and timely information.

More information about Business Objects can be found at [www.businessobjects.com](http://www.businessobjects.com).



[businessobjects.com](http://businessobjects.com)

[insight.businessobjects.com](http://insight.businessobjects.com)