The **Business Value** of Business Intelligence

A Framework for Measuring the Benefits of Business Intelligence

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The **Value** of Better Decisions

How are Decisions Made in Your Organization?

In every organization, employees make hundreds of decisions each day. They can range from whether to give customer X a discount, whether to start producing part Y, whether to launch another direct mail campaign, whether to order additional materials, etc. These decisions are sometimes based on facts, but mostly based on experience, accumulated knowledge, and rule of thumb.

That poses a problem because experience, knowledge, and rule of thumb can take years to develop. Some employees never acquire them. Those who do may still fall prey to decision traps or biases in judgment. Improving the quality of business decisions has a direct impact on costs and revenue. For instance, giving a customer a discount may or may not help the bottom line, depending on the profitability of the client over the duration of the relationship. To improve the quality of decisions, managers can:

    ❌   Option: Do critical tasks themselves.
           Result: This leads to burnout, bottlenecks, and opportunity costs of not doing more strategic work.

    ❌   Option: Hire additional skilled staff.
           Result: This increases costs dramatically.

    ❌   Option: Attempt to define a policy for all possible decisions.
           Result: This leads to decisions that do not meet with the rapidly changing needs of the business.

    ✅   Option: Give existing staff the means to make better decisions.
           Result: This creates an agile enterprise and is the most cost-effective solution.

The Means to Making Better Decisions

What is a good decision? A good decision can be defined as one that helps the organization move closer to its goals. But how do employees know if the decision they are about to make will help the enterprise meet its objectives? They need *strategic information.*

All employees can use strategic information

For example, how do you define the work of a stonemason?

▶ Is he placing stones side by side and cementing them together?
▶ Is he building a wall?
▶ Is he building a cathedral?

> *Strategic information is the key to allowing employees to make a good decision.*

Each job description is true. But by focusing on the third definition, the mason will understand the goal and the context of his task, not to mention find his work more interesting. Give him up-to-date information on how the rest of the building is progressing, how many stones he has left, and how other masons did his job in the past, and he will be able to make better on-the-fly decisions in response to changing work conditions. This observation holds true for any type of employee. Strategic information is a powerful motivator and enabler.

Are we meeting our objectives?

Increasingly, managers' incentive plans are based on quantifiable objectives, such as profitability, percentage of on-time deliveries, proportion of satisfied customers, etc. However, managers often have limited ways of knowing whether they are progressing toward their objectives. At the end of the year, they receive their bonus, and are told how well they did. They may be pleased or disappointed, but they have little way of predicting the impact of their actions on corporate welfare.

Management by objectives (MBOs) only works if the employee has a way to monitor his own progress in reaching his objectives. With *business intelligence* (BI), each user has the means to see how his or her actions impact the overall corporate profitability. Complex incentive plans may not be as necessary if employees can see which of their actions improve or hurt overall performance.

The Case for Business Intelligence

You understand the value of making a better decision and how giving your employees greater access to information can empower them and yield even greater results. Now it's just a matter of finding out how a BI solution can make that notion a reality.

This document will supply you with the knowledge you need to gain a complete understanding of all the issues you will face when implementing a BI solution. The brochure is divided into three sections. The first section gives you a clear definition of the term business intelligence and highlights the characteristics of a BI deployment. The second section outlines the three most common benefits you will gain from a BI solution. The third section looks at the issue of measuring the benefits of BI and explains how you can justify your BI investment.

Throughout this document, you'll find numerous examples of current Business Objects customers who are using BI in a wide variety of creative ways to make their organizations more responsive, productive, and profitable.

What is **Business Intelligence**?

The Vision

An account manager, on her way to a client visit, looks up past proposals, as well as the client's ordering, payment, delivery, support, and marketing history. At a glance, she can tell that the client's ordering volumes have dropped lately. A few queries later she understands that the client has a support issue with a given product. She places a call to her support department, and learns that the defective part will be replaced within 24 hours. In addition, the marketing records show that the client recently attended a user conference and expressed interest in the new product line. The account manager is now fully prepared for a constructive sales call. She masters all aspects of her client's relationship with her firm, understands the client's issues, and can confidently address new sales opportunities.

The Problem

Vast quantities of data...
As businesses increase their reliance on enterprise systems, they are rapidly accumulating vast amounts of data. Every interaction between departments or with the outside world, historical information on past transactions, as well as external market information, are entered into information systems for future use and access.

...Yet very few answers
With all this data available, it's surprising how difficult it is for managers to get a clear picture of fundamental business information, such as inventory levels, orders in the pipeline, or client history. In most organizations, it would take the account manager, in the example above, hours or days to get answers to her questions. Many organizations contain disparate *silos of information*. Client orders and payment records are kept in the accounting system; installation and support information is stored in the customer service database; contact management software tracks the proposals and sales call history; and marketing contact history is kept by marketing. Rarely do these systems speak the same language, and there is no simple way for a non-technical user to get answers quickly.

As a result, information has to be requested from different departments or IT, who must dedicate staff to pull together various reports. Responses can take weeks, by which time the information may already be outdated. It has been said that organizations are data rich and information poor. The challenge is to transform data into useful information. With this information, employees gain knowledge that can be leveraged to increase company profitability.

The Solution—Business Intelligence

The different information systems described in the previous section may be successful at helping users accomplish specific tasks, but they're typically not well suited at providing information to end users. With business intelligence, users will be able to turn this information into knowledge, and knowledge into profit.

So what is business intelligence? BI enables your organization to track, understand, and manage your business in order to maximize enterprise performance. With BI, organizations are able to improve operational efficiency, build profitable customer relationships, and develop differentiated product offerings.

In enterprise networks, BI provides employees with information to make better business decisions, and can be used in environments ranging from workgroups of 20 users to enterprise deployments exceeding 20,000. In an extranet environment, BI is deployed in applications that allow organizations to deliver new services and build stronger

Business intelligence refers to the use of technology to collect and effectively use information to improve business effectiveness.

relationships with customers, partners, and suppliers via the internet. In enterprise performance management (EPM), organizations must understand and have constant visibility into their key performance indicators and metrics that span across their organizations. By doing this, organizations ensure their strategy is aligned from top to bottom and across the organization from marketing to sales to manufacturing to human resources. Providing this enterprise insight is a key strength of BI.

The **Characteristics** of a Business Intelligence Solution

Single point of access to information

With BI systems, organizations can unlock information held within their databases by giving authorized users a single point of access to data—a BI portal—in both intranet or extranet environments. Wherever the data resides, whether it is stored in operational systems, data warehouses, data marts and/or packaged applications, users can prepare reports and drill deep down into the information to understand what drives their business, without technical knowledge of the underlying data structures. The most successful BI applications allow users to do this with an easy-to-understand, non-technical, graphical user interface.

## Using BI in all departments of an organization

There are many different uses for BI systems. Our example at the beginning of this section focused on one specific application: sales. However, as illustrated below, BI systems can be used at every step in the value chain.

> *Volkswagen AG:* The company uses BI to track, understand, and manage data in every department—from finance, production, and development, to research, sales and marketing, and purchasing. Users at all levels of the organization access supplier and customer reports relating to online requests and negotiations, vehicle launches, and vehicle capacity management and tracking.[1]

Timely answers to business questions

The key to unlocking information is to give users the tools to quickly and easily find answers to their questions. Some users will be satisfied with standard reports that are updated on a regular basis, like current inventory reports, sales per channel, or customer status reports. However, the answers these reports yield, can lead to new questions. Some users will want dynamic access to information. The information that a user finds in a report will trigger more questions, and these questions will not be answered in a prepackaged report.

> While users may spend 80% of their time accessing standard or personalized reports, you will find that for 20% of their tasks, they need to go elsewhere to obtain additional information not available in the original report. To address this need and to avoid end user frustration (and related report backlog for the IT team), a BI system is required that lets users autonomously make ad hoc requests for information from corporate data sources.
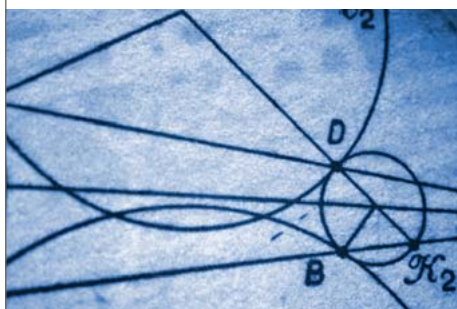
Making the most of the internet by creating an extranet

You can open up BI system access to users outside the organization through extranet applications with clearly defined security limits. For example, customers may want to consult their ordering history to analyze their buying patterns and identify cost-saving opportunities. Or suppliers may be interested in gathering sales data.

MasterCard International: For merchants, access to BI offers the opportunity to monitor their businesses more closely on a day-to-day basis. Advertising agencies are able to use information from the extranet when developing campaigns for merchants. On the authorization side, a call center can pull up cardholder authorization transactions to cut down on fraud. MasterCard expects that in the long term and as business partners increasingly demand access to system data, the system will support more than 20,000 external users.

The Benefits of Business Intelligence

Because of the wide applicability of BI in both enterprise and extranet deployments, the business benefits are numerous. These benefits can be grouped into three main categories: lowering costs, increasing revenue, and improving customer satisfaction. And this list is far from exhaustive, since empowered users continue to find new ways to implement BI.

Lowering Costs

Improve operational efficiency

By giving internal or external customers access to real-time data over the web, customers can track their own accounts and answer their own questions. As a result, customer satisfaction is improved while reducing support costs. A significant, added benefit to real-time data access is that data becomes much cleaner. By reviewing the data themselves, customers can spot errors, and help improve the quality of the information in the data warehouse.

> *A leading risk insurance company:* Today, the organization's customer care extranet allows customers to access their account information over the internet; however, it used to be that the company would send paper reports and diskettes to all of its customers. Any errors in the reports would take one to two months to correct because customers would first have to receive the report, catch the mistake, and then notify the company of the error. Now customers spot the errors themselves in real time and notify the insurance company directly through the extranet, usually within a couple of days or less.

Eliminate report backlog and delays

Business intelligence allows business users to design their own queries and reports, allowing organizations to redeploy the programmers who formerly performed this task. This can generate significant cost savings in human resources, since sought-after staff can be reallocated to projects that add more value to the organization.

> *Handspring, Inc.:* "The company receives data from such partners in multiple formats and a variety of systems, so it needed to consolidate and analyze data to give employees better information for decision-making. [With BI, Handspring] can now generate reports on items such as web orders, bookings, billings, backlog, and shipping activities in less than one day, versus weeks before."[1]

Negotiate better contracts with suppliers and customers

A solid grasp of facts and figures is invaluable when it comes to negotiating contracts with suppliers and customers. For instance, by analyzing supplier performance—on-time delivery trends, percentage of rejects, and price changes—you are in an excellent position to discuss all aspects of the contract as well as possibly negotiate volume discounts. And identifying a customer's spending patterns could qualify him or her for a particular packaged deal.
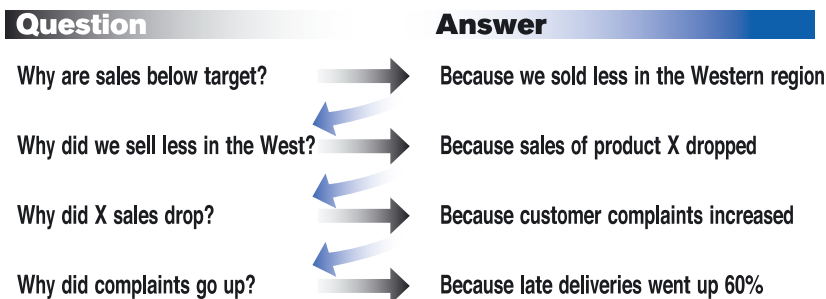
Shell Services International: With its BI solution, Shell was able to access information about revenues between fuel and non-fuel business. Seeing that 20% of their products were delivering 80% of their sales, Shell made significant improvements in margin and turnover. They also negotiated better deals with suppliers and improved product master file management, which helped them reduce working capital.

Find root causes and take action

Do 20% of your products account for 80% of your sales? If you don't know, business intelligence can give you the answer.

If one division is doing better or worse than others, identify the root cause and either implement a best practice or fix the problem. Was the problem caused by better/worse management? A regional market trend? A new sales strategy?

With BI, you can find root causes both to problems and to best practices by simply asking "Why?" The process is initiated by analyzing a global report, say of sales per quarter. Every answer is followed by a new question, and users can drill deep down into a report to get to fundamental causes. Once they have a clear understanding of root causes, they can take highly effective action.

Question	Answer
Why are sales below target?	Because we sold less in the Western region
Why did we sell less in the West?	Because sales of product X dropped
Why did X sales drop?	Because customer complaints increased
Why did complaints go up?	Because late deliveries went up 60%

Using BI can turn open questions into specific answers.

Action: Fix the delivery problem

Identify wasted resources and reduce inventory costs

You can use BI to apply activity-based costing methods to identify hidden costs or missed opportunities. From these findings, resources can be allocated to highly profitable products, customers, and projects, thereby increasing the bottom line. Also, having a clearer understanding of success of promotions can help to effectively monitor inventory levels.

> *TruServ:* The parent company of True Value Hardware "has used BI software to improve efficiency of its distribution operations and reap a $50 million reduction in inventory costs." "The marketing department uses [BI] to track sales promotion results such as which promotions were most popular by store or by region. Now that TruServ is building promotion histories in its databases, it can ensure all stores are fully stocked with adequate inventory during an event." TruServ "was able to achieve a return on investment in about five to six months."[4]

Leverage your investment in your ERP or data warehouse

While the bulk of the investment in your BI system is probably in enterprise resource planning (ERP) applications or your data warehouse, it is very difficult for non-technical users to take advantage of available data without a good reporting and analysis tool. BI helps unlock the data in your company's data warehouse(s).

> *BOC Gases:* One of the world's leading suppliers of industrial gases uses BI to make ad hoc queries against its SAP system. Thanks to BOC's BI system, sales people can access reports that are tailored to their needs and that hold a lot of detailed information. Working offline on their laptops, sales people can drill down to the required level of detail on product or customer information.

Increasing Revenue

Sell information to customers, partners, and suppliers

Leading organizations are using BI to differentiate their product and service offerings from competitors through value added, web-based services. In the past, many departments generated zero revenue, but now with BI extranets, they create a recurring revenue stream by selling information to customers, partners, and suppliers.

> *Owens & Minor:* The $3 billion medical supplies distributor has signed up 80 hospital accounts and six of its top suppliers, including pharmaceutical giant Johnson & Johnson, for the service. Hospitals pay up to $1,250 per month and suppliers pay $2,000 per month. It is estimated that Owens & Minor will generate at least $2 million in fees next year.

Improve strategies with better marketing analysis

> *Departments within an organization that have led the deployment of BI extranets have found themselves switching from being a cost center to becoming a profit center.*

With easy access to ordering, accounting, production, shipping, customer service, and even external databases, marketers can find answers to the most detailed of questions such as, "What was the success rate of my direct mail campaign?" or "What was the incremental revenue generated from the new TV ads we just ran?" or "Which ten items were most popular across our 50 stores during the past couple of weeks?"

With this information, the marketer can precisely tailor product launches and promotion campaigns to the targeted audience. Using BI, companies can micro segment their markets and gain an edge over the competition.

> *Ben & Jerry's:* BI allows the U.S. ice cream maker to track, understand, and manage information on the thousands of consumer responses it receives on its products and promotional activities. Through daily customer feedback analysis, Ben & Jerry's is able to identify trends and modify its marketing campaigns and its products to suit consumer demand.

Empower your sales force

Better results from your sales force can be achieved by analyzing its selling patterns: compare results to targets, to figures from previous years, to other sales staff results, and suggest improvements. Encourage the sales force to focus on high profitability customers and products. The sales force can also use BI to analyze data on brands, clients, and distributors.

> *TaylorMade:* "When salespeople went out to visit TaylorMade's customers at golf pro shops and sporting goods retail chains, they didn't have up-to-date inventory reports. The sales reps would take orders for clubs, accessories, and clothing without confidence that the goods were available for delivery as promised," [Tom Collard, information systems director with TaylorMade] says. "The technology has helped TaylorMade not only reduce costs by eliminating the reporting backlog…it has eliminated a lot of wasted effort that resulted from booking orders that it couldn't fill."[5]

Improving Customer Satisfaction

Give users the means to make better decisions

With access to information, users can make better decisions faster, without having to escalate standard problems up the management hierarchy. This guarantees pragmatic and effective solutions since the people directly involved in the operations make decisions. In addition, users have the increased satisfaction of controlling their own process.

> *Ingram Micro:* This wholesale provider of high-tech goods to technology solutions providers is working to create a new BI extranet in order to deliver advanced information to the company's suppliers and business partners. Says Ingram Micro CIO Guy Abramo, "Today it's incumbent on us to provide our partners with sell-through information so they can see what happened once their PCs hit distribution. That's critical for them to do inventory planning and manufacturing planning—helping them to understand what products are selling to what segments of the marketplace."[6]

Provide quick answers to user questions

One of the primary benefits of BI is that you can dramatically reduce the time it takes for internal and external users to get answers to their questions. With fewer delays and faster response time, users are empowered to act quickly, based on the information they receive.

Principal Financial Group (PFG): PFG's financial department has received substantial benefits from the products' real-time data extraction and analysis capabilities. The department can now rapidly review monthly and yearly revenue data, increasing the speed of decision-making and improving productivity and business performance.

Challenge assumptions with factual information

Almost all businesses rely on assumptions and rule of thumb. However, it is worthwhile to challenge these hunches through detailed analysis of operational data, because assumptions and rule of thumb are frequently incorrect.

British Airways: Peter Blundell, former knowledge strategy manager for British Airways, and various company executives had a suspicion that the carrier was suffering from a high degree of ticket fraud. To address this problem, Blundell and his team rolled out business intelligence. "Once we analyzed the data, we found that this ticket fraud was not an issue at all. What we had supposed was fraud was in fact either data quality issues or process problems," says Blundell. "What it did was give us so many
unexpected opportunities in terms of understanding our business."[7] Blundell estimates that their BI deployment has resulted in around $100 million in cost savings and new revenues for the airline.

Justifying the **Investment**

By now, the benefits of BI—lowering costs, increasing revenue, and improving customer satisfaction—have been explained, and you can see why BI is a prerequisite to making better decisions. But you might be wondering, "How do I justify this investment?"

The Process for Quantifying BI Benefits

Increasingly, top-level management expects IT departments to justify their costs by presenting quantified value gains, typically using ROI methods. Management is no longer prepared to sink large sums into IT projects simply because they are the latest and greatest technology. Information technology has come of age, and it is expected to make a significant contribution to the bottom line.

When looking at how BI affects the bottom line, you should analyze the various benefits you can expect to see from a BI deployment. A practical way of breaking down these numerous benefits is to separate them into four main categories:

- ▶ Quantifiable benefits
- ▶ Indirectly quantifiable benefits
- ▶ Unpredictable benefits
- ▶ Intangible benefits

Quantifiable benefits include working time saved in producing reports, selling information to suppliers, etc.

> *Moët et Chandon:* The famous champagne producer, reduced its IT costs from approximately $.30 per bottle to $.15.

> *A leading risk insurance company:* Because customers have self-service access to their information in the insurance company's database, they no longer receive paper reports. This one benefit alone saves the organization $400,000 a year in printing and shipping costs. The total three-year ROI for this BI deployment was 249%.

Indirectly quantifiable benefits can be evaluated through indirect evidence—improved customer service means new business from the same customer, and differentiated service brings new customers.

> *Owens & Minor:* A customer of Owens & Minor cited extranet access to the data warehouse as the primary reason for giving the medical supplies distributor an additional $44 million in business.

Unpredictable benefits are the result of discoveries made by creative users.

> *Volkswagen Finance:* The BI system allowed an interesting discovery that later resulted in significant new revenue. The customers of a particular model of the Audi product line had completely different behaviors than customers of other cars. Based on their socio-economic profiles, they were thought to want long lease terms and fairly large upfront payments. Instead, the information revealed that Audi customers actually wanted shorter leases and to finance a large part of the purchase through the lease. Based on that insight, the company immediately introduced a new program combining shorter length of lease, larger upfront payments, and aggressive leasing rates, especially for that car model. The take up on the new program was immediate, resulting in over $2 million new revenue.

Intangible benefits include improved communication throughout the enterprise, improved job satisfaction of empowered users, and improved knowledge sharing.

> *ABN AMRO Bank:* The corporate human resources department at ABN AMRO uses BI to gain insight into its workforce by analyzing information on such items as gender, age, tenure, and compensation. Thanks to this sharing of intellectual capital, the HR department is in a better position to demonstrate its performance and contribution to the business successes of the corporation as a whole.

Suggested Solution

While a deployment's ROI is most accurately determined on a case-by-case basis, we suggest the following approach for evaluating these systems. This approach has the advantage of taking both measurable and intangible benefits into consideration:

- ▶ Quantify the expected measurable benefits.
- ▶ Qualitatively describe, as precisely as possible, the anticipated intangible benefits.
- ▶ Estimate the total cost of ownership (TCO), including hardware, software, personnel, consulting services, and future ongoing costs. Bear in mind that the choice of system architecture—integrated or non-integrated—can greatly affect total cost of ownership.
- ▶ Then apply the following decision rule.
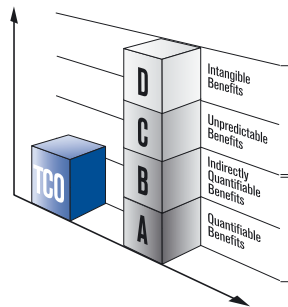
If TCO < Quantifiable and Indirectly Quantifiable Benefits (A+B), then the system is clearly worth the expenditure.
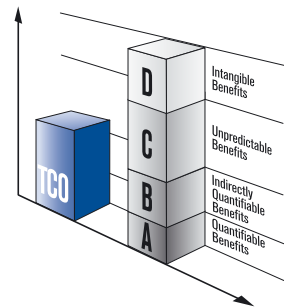
If TCO > A + B, then you must evaluate the unpredictable and intangible benefits to make your decision.

Measuring these intangible benefits, while challenging, can be done by creating a series of assumptions to determine the impact these types of benefits have had on the bottom line. For example, if customers access reports directly and that empowers the sales force to make more sales calls (because their time has been freed up from creating the reports), how much more revenue are the sales representatives bringing to the company because of these additional calls? Would a realistic, conservative estimate on the amount of incremental business done with this additional time be a 2% increase? If so, then in a $100 million company, that would be a $2 million benefit for the company.

This process can be undertaken for any benefit acquired through business intelligence. And while a little more time consuming than simply calculating the quantifiable benefits, it will in all likelihood yield numbers that are sure to create a positive ROI that would make any executive or business manager feel that implementing business intelligence was a wise decision.

Conclusion

The widespread use of information technology can generate tremendous amounts of data within an organization. This data contains information that is invaluable to the organization's decision makers.

The issue for most organizations is that the data is inaccessible to all but the IT department. While IT can run queries and produce reports at the request of business users, a self-service approach to information provides the greatest benefits. With direct, easy access to information, users can find answers to all the questions that are raised by their activities. Armed with precise, up-to-the-minute information, users can develop effective responses that help their organization attain its goals.

BI is the key to leveraging this wealth of data that accumulates in an enterprise.

With BI, non-technical users can pinpoint what drives their business activity. They can help reduce costs, increase revenues, and improve customer satisfaction. While many of these benefits are clearly quantifiable, some of the more intangible ones, such as improved communication throughout the enterprise, improved job satisfaction of empowered users, or sharing of intellectual capital, can give your business the greatest edge over its competitors.

We hope this paper has helped clarify the value that BI can deliver for your organization. If you would like further information on Business Objects and our products and solutions, please visit www.businessobjects.com.