

# Managing Total Cost of Ownership for **Business Intelligence**

**A White Paper**

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## Introduction

The economy has certainly seen better days. Budgets were larger during the bull market. Fiscal optimism fostered independence among company departments, groups, and divisions seeking changes and encouraged technology purchases to promote growth. Acquire the best-of-breed and grow-at-any-cost attitudes prevailed.

The current sober business climate and renewed emphasis on corporate accountability have prompted an assessment of all those purchases. Today, businesses cannot afford independent expenditures that do not add value in a coordinated fashion for the whole enterprise.

Organizations have come to realize, for example, that many of the same business intelligence tools exist throughout the enterprise but produce little or nothing of value together, except information silos. The maintenance and licensing fees on each BI tool are significant as well. Gartner suggests: "Enterprises must stop this fragmented proliferation of BI tools and better ensure a more consistent and manageable BI environment."\*

Now that fragmented proliferation has slowed down, businesses can develop a plan to salvage as many investments as possible, and devise a strategy to integrate the disparate technologies to move the enterprise forward. This paper details the critical cost of ownership metrics and explains how they impact your return on investment.

### **TCO and Business Intelligence**

Financial analysis of enterprise costs, such as technology investments and expenses, should be done annually to assess the impact of any changes that may affect the business. It is critical to quantify the total cost of ownership with business drivers, such as enterprise efficiencies, productivity enhancements, and customer satisfaction.

When an organization struggles to lower its total cost of ownership, however, it must first devise a cohesive enterprise strategy meeting daunting challenges such as business units with their own technology standards, applications, and tools; products that do not work effectively together or with existing data; excessive server licenses; and cost-prohibitive support requirements.

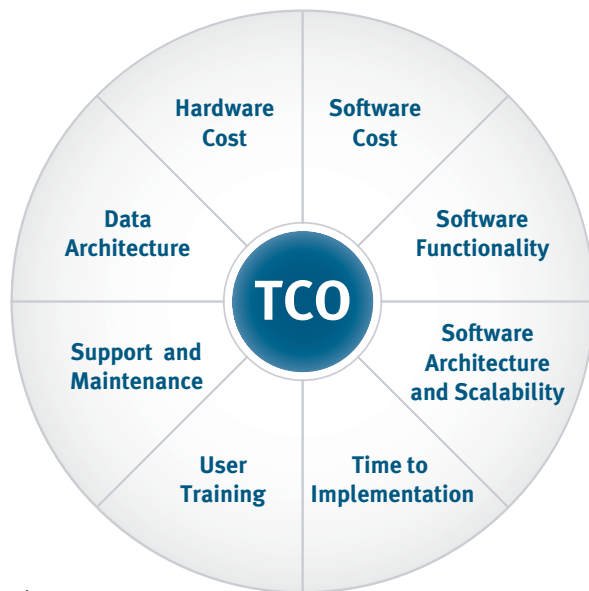
\* GARTNER, "CONSOLIDATING BI TOOLS IS AS EASY AS 1, 2, 3, 4, 5, 6, 7," JUNE 21, 2002, (COM-16-8359).

According to Gartner, you must “know your mission and use TCO to prioritize, guide and test progress toward meeting enterprise goals.”\* When applying TCO specifically to business intelligence, all costs and benefits must be evaluated to ensure your users are empowered properly to access, transform, and make better/faster decisions using your most vital asset: information. Business intelligence potentially offers the highest ROI of any technical investment. As the size of applications grows, it becomes increasingly important for organizations to better manage their TCO in order to maximize ROI. The business intelligence software with the lowest TCO will cost-effectively scale within the enterprise and beyond, and won’t require moving data and populating data marts/cubes, or purchasing unnecessary hardware, which are all very expensive.

\* GARTNER, “MANAGEMENT UPDATE: TOTAL COST OF OWNERSHIP ANALYSIS PROVIDES MANY BENEFITS,” AUGUST 27, 2003, (ICG08272003-01).

## Factors That Affect TCO

Focusing solely on price when you evaluate costs and reductions is risky. The methodology behind BI's total cost of ownership is multifaceted. Diagram 1 shows the many factors that contribute to determining the total cost of ownership of an enterprise BI strategy.



**Diagram 1**

Each of these factors is intertwined and dependent upon the others. One should not be removed without considering how it could affect the others. A BI strategy should:

- Support all user needs
- Allow for the development of custom BI applications
- Work with your data
- Run on your platforms
- Require minimal support

The costs associated with supporting and providing each metric could become exorbitant as your business grows or the demand for more information increases. Are there plans to deploy

applications publicly, possibly to customers? Since such a deployment would be a direct reflection of the organization, that application must be reliable and efficient.

### **Costs of Hardware and Software**

Think about all of the costs associated with the hardware and software located throughout your enterprise and all of the people trying to access applications concurrently. Purchasing more processors, maintaining multiple server licenses, and deploying expensive personnel to support products and tools acquired over the years only increases wasteful spending – especially if many of these products do not effectively work together.

To significantly minimize the expenses associated with a BI strategy, the organization must maximize its ROI with a cost-effective solution that scales to meet growing demands for information. The best solution should be Web-based, without per user client licensing fees, and should not require any additional software on the client end.

### **Software Functionality**

Your enterprise has different types of users: casual users; more sophisticated users who create their own reports; and analysts or power users who drill down to do online analytical processing (OLAP). Functionality is important and the entire enterprise has to be empowered to quickly and easily generate all types of ad hoc reports, complex queries, and in-depth analysis with nothing more than a Web browser.

Rolling out a BI solution at the lowest TCO cannot be done if the solution consists of tools that require extensive training. Instead, the solution should be comprised of an intuitive environment that does not require plug-ins and is straightforward to learn and easy to use.

### **Software Architecture and Scalability**

Locate the vendor that offers significantly lower software prices and is proficient with its hardware specifications. To ensure optimum performance, the BI solution should use the Internet as the vehicle to drive information to and from all levels of users.

Ascertain the number of concurrent users accessing just one of your boxes. Is the system at or about to reach capacity? Purchasing more hardware processors will not solve the bigger issue:

how to accommodate the growing number of users requiring accurate information immediately. A truly scalable BI solution requires less hardware and maintenance while addressing the needs of all information consumers. When users become self-sufficient, expensive IT resources can be redeployed from reacting to the many unexpected business requests to implementing and integrating strategic enterprise initiatives.

A benchmarking study recently conducted by Ventana Research, a Performance Management research and advisory services firm, examined the cost of ownership for a market-representative sampling of BI software solutions. The purpose was to quantify the costs associated with the purchase, deployment, and operation of BI solutions. They concluded that selecting the lowest cost vendor in the largest category of business intelligence – parameterized reporting and user-defined reporting on both the Windows and UNIX platforms – is an extremely cost-effective solution for large-scale environments. In some scenarios, it was even possible to save hundreds of thousands of dollars, for example, in categories of 1,000 and 10,000 users, by selecting the lowest-cost vendor.

### **Time to Implement**

Developer resources are expensive and users require immediate access to information. Therefore developers need flexible tools to quickly build and deploy sophisticated BI applications throughout the enterprise that meet different user preferences for greater ease of use and maximum productivity.

Select the BI solution with an open and intuitive environment that allows for rapid development of virtually any type of Web-based report or information system.

### **User Training**

Your users are ready to access the right information to perform analysis and generate reports. But are they prepared?

Keep the time and costs associated with training diverse groups of users at a minimum in order to ensure the lowest total cost of ownership. Empower your organization to immediately access and analyze data in a way that is best suited to get results, but meets the needs of executives, partners, customers, and sophisticated analysts. Next, ensure people can easily manage and share information throughout the enterprise and that results can be saved, or viewed, printed,

and taken offline for further analysis. As usability increases, the BI solution becomes more valuable, thereby increasing the return on investment.

### **Support and Maintenance**

Establishing an environment where valuable IT talent handles every simple user request will increase your TCO.

Reduce the amount of maintenance and support required throughout your organization by increasing user self-sufficiency. Select a reliable and manageable BI solution in which users can intuitively help themselves to the right information, perform simple queries, and create or change reports. Then, IT resources can be deployed to solve more complex problems.

### **Data Architecture**

Throughout the organization there are significant business intelligence investments that must be leveraged.

Rather than randomly eliminating these assets, especially based only on price, focus first on removing redundant data and overlapping technologies. Then reduce the complexity of systems and consolidate server resources to ensure interoperability. The objective is to increase operations by empowering users to efficiently access and manipulate information, at the expense of antiquated or duplicate tools. Using information intelligently throughout an enterprise will increase performance, propel productivity, and reduce costs.

A fragmented BI strategy is often the result of having multiple tools deployed and working independently of each other. Studies have shown that this approach is very expensive and can create such problems as stove-piped views and information inconsistencies among departments/groups. Leverage the assets you already own and select the BI solution that interoperates with those assets and your data to lower the TCO.

## Consolidate and Standardize

“TCO can lead to cost reduction, but the TCO numbers reflect only part of the story....TCO is a holistic view of costs across enterprise boundaries over time.”\*

Gone are the days when departments were empowered to acquire tools independently and experiment without commitment to a fixed budget. Those situations led to the fragmentation we see in businesses today. As a result of divisions and departments pursuing their own information-handling priorities to meet the reporting demands of different users, many organizations have been left with BI tools from multiple vendors. Sometimes there are up to 30 scattered throughout the enterprise, with little or no coordination among them. Maintaining numerous licenses and providing support for each of them is cost-prohibitive.

Avoid these expensive patterns. They may appear to immediately remedy the reporting demands of a few users but will only result in a higher TCO. Purchasing multiple, less expensive licenses today will not resolve the larger issue of getting the most value from a strategic, long-term enterprise-wide business intelligence solution.

Make the wide deployment of a reporting solution the organization’s highest priority and reduce excessive amounts of overhead per person. Rather than standardizing upon only one tool, implement a flexible BI solution that consolidates the majority to only a few. Consolidating with, and standardizing on, a flexible BI solution that meets the information requirements of all levels of users today and during the future ultimately will lower your total cost of ownership and maximize your return on investment.

When you evaluate the requirements of the entire organization, the objective should be to ensure a comprehensive solution that eliminates conflicting information and improves reporting capabilities and financial analysis within the organization today and tomorrow. Do users have secure and easy access to operational legacy data in addition to current transactional data? Do information silos exist among departments? When users are empowered to manage their data in a manner that is consistent with the rest of the enterprise, again with minimal IT support and fewer hardware requirements, the holistic view of costs across the enterprise boundaries, as described by Gartner, begins to take shape. Over time, that BI solution will provide the most functionality, the greatest flexibility, the lowest TCO, and the highest ROI.

\* GARTNER, “MANAGEMENT UPDATE: TOTAL COST OF OWNERSHIP ANALYSIS PROVIDES MANY BENEFITS,” AUGUST 27, 2003, (ICG08272003-01).

## Architecture

– Web, Data, Platforms

## Functionality

– Depth, Development, Usability

## Scalability

– Number of Concurrent Users, Data Sets

## Security

– Network, Application, Data, Custom

Diagram 2

### **Architecture – Leverage Existing Technologies**

Organizations have data existing in different, unconnected sources. Manually accessing that information, generating reports, or requiring users to rekey data from one source into another (for example, Excel spreadsheets) is cost-prohibitive and subject to significant errors. Planning an architecture that addresses the need to store content for easy access ultimately eliminates data latency, empowers users to make informed decisions, and accelerates operations throughout the company. Gartner estimates that implementing the data architecture needed to support a business intelligence environment can account for as much as 70 percent of BI development efforts and expenses.

Beware however: the software you select should support your decisions and not require your decisions to support the software. There is no reason why an organization should acquiesce to extracting, transforming, and loading data only to suit a vendor's software. Implementation and support costs for such ETL processes can be excessive. The most efficient and cost-effective way to ensure that your data environment is structured to support enterprise initiatives is to select a fully integrated solution that provides comprehensive reporting and business intelligence capabilities, as well as the functionality necessary to implement and optimize the underlying data architecture. Yet even leading organizations continue to make expensive and extremely risky decisions.

Selecting a solution that provides full Web Services support will also help organizations to fully leverage all their existing technology investments and maximize business intelligence integration points. A business intelligence solution with comprehensive Web services capabilities will allow organizations to make data from disparate internal systems available via Web services, and easily combine it with data from external sources (such as partner or customer systems). It will also enable mission-critical, service-oriented applications to readily incorporate report output, as well as business intelligence functionality.

Holland America quickly realized that the traditional process of moving all their information into data marts for BI functions would not provide the flexible architecture their enterprise required. Simple requests for more information throughout the company would certainly increase, as would the necessary and expensive IT resources to support such requests. Rather, the most cost-effective solution would be to provide users, both inside and beyond the enterprise, with direct access to existing information from data warehouses and operational systems. Automating ETL processes and creating a flexible, Web-based business intelligence system empowered users to access current information on demand, and in their choice of formats. By doing this, Holland America boosted its efficiency for sales, marketing, revenue management, and operations personnel in addition to making their report writing staff much more productive.

As people – from casual users to power users and analysts – begin to use a BI solution and get direct access to the information they require to make those better/faster decisions, others will demand the same results. Only a Web architecture, not simply a Web deployment approach, is the best way to support the requirements of such a growing number of users.

Remember, your organization's data architecture is an investment. Select and implement the most effective investments in standards, procedures, technologies, and interfaces to support the organization's goals.

### **Functionality – Eliminate BI Fragmentation and Unite Resources**

“Through 2005, Global 2000 enterprises will adopt a staggering number of disparate and unrelated BI technologies, largely through applications, adding to BI fragmentation in organizations. Enterprises must stop this fragmented proliferation of BI tools and better ensure a more consistent and manageable BI environment.”\*

\* GARTNER, “CONSOLIDATING BI TOOLS IS AS EASY AS 1, 2, 3, 4, 5, 6, 7,” JUNE 21, 2002, (COM-16-8359).

For an organization to meet the requirements of an enterprise-wide deployment, it must reduce technical risk and complexity by selecting the vendor that provides a comprehensive BI solution and eliminates data fragmentation. The disjointed proliferation of BI tools that individual groups, departments, and users acquired during the past happened without a coherent strategy for the present and future business requirements of the entire organization. This only created interoperability roadblocks with multiple organically developed or acquired vendor technologies that cannot operate together.

Functionality is critical to the enterprise and as redundant technologies are removed, maintenance and training costs will be eliminated as well. Supporting those multiple products and addressing their unique system requirements translates into a large and expensive IT support staff with little time for in-depth assistance.

When a major investment firm conducted an inventory analysis of its BI environment, they found 33 different tools and eight servers generating up to 3,800 different reports on a monthly basis. Their goal became to reduce the number of servers to one. Using a business intelligence strategy with parameterized reporting capabilities, those 3,800 procedures became 30 and reduced IT support from dozens of people to a couple. It is projected that this company saved approximately \$40 million in server expenses alone.

Locate the vendor with the BI technology for a single platform solution. That vendor should also deliver Web services functionality to enable comprehensive access to both internal and external data sources while enhancing systems integration efficiency and reducing programming redundancies. This will allow robust business intelligence content and functionality to be seamlessly integrated into other applications, as well as consolidate enterprise-wide reporting requirements with a business intelligence suite, as a cost-effective way to manage the tools and resources that will deploy consistent solutions.

### **Security – Protect Assets and Investments With Ease**

Consider security. Obviously, without it assets and resources – the entire information infrastructure – would become vulnerable to significant damage. Enterprises have already invested in some level of security. In order to keep expenses low, a cost-effective BI solution should have the flexibility to comply with existing protocols or procedures while meeting the high security demands of today and tomorrow. It should conform to and supply all security

requirements at multiple levels, including network operating systems, databases, applications, and homegrown security algorithms.

System administrators should be empowered to easily manage and define user access. Protecting sensitive information throughout the extended enterprise requires data access to be restricted, even down to the data-value level, without compromising the environment's operations.

### **Scalability – Ensure Complete Access for Optimum Performance**

Scalability is a word often misrepresented and used so broadly that all the valuable possibilities it can provide are not fully known and understood. A truly scalable BI solution ensures that all types of people throughout the organization and beyond have complete access to the types of applications and data they require for optimum performance.

Scalability is comprised of three parts – number of users, types of applications, and types of users. Since all of this necessitates the effective handling of large amounts of data, your scalable solution will therefore require a large database with an optimal response rate.

## Scalable

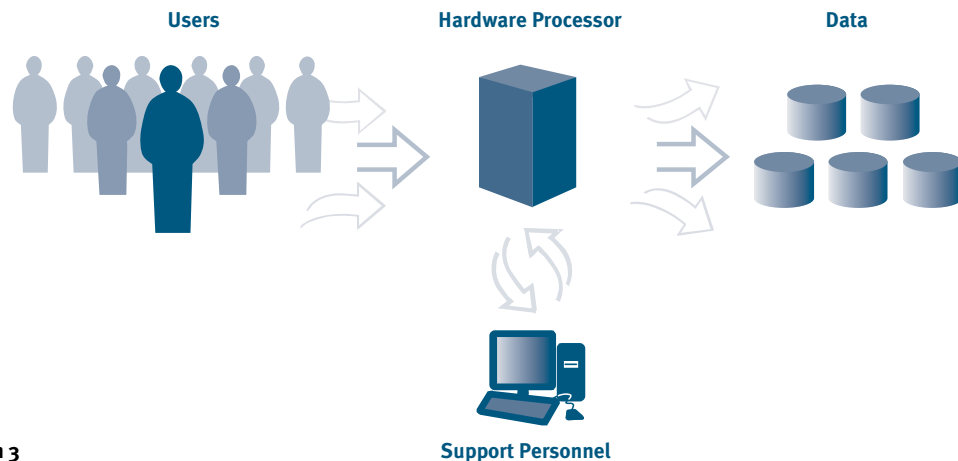
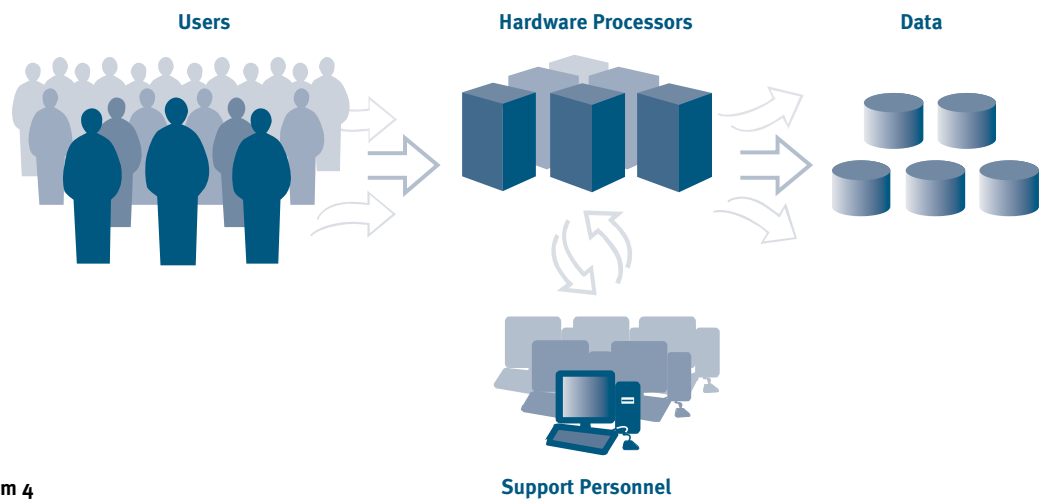


Diagram 3

Empowering a wide range of users with the innovative BI technology that allows each person to uniquely generate logical and visually intuitive reports, with minimal support requirements, is what scalability is all about.

Beware of those vendors that offer “scalable” solutions requiring personal information models, however. Many products will not work with your existing data and will require you to move information and populate local data marts or cubes. That may be tolerable for a small number of users (demonstrated in diagram 3).

## Nonscalable



**Diagram 4**

But as more users begin to access the application simultaneously, even as few as 125 of them, that solution quickly becomes a problem to manage and subject to failure, which is shown above in diagram 4.

Since more people have been added, more local data environments must be maintained. Up to eight times the number of hardware processors and ten times the number of support personnel are now required to make this solution “scale.” Clearly, this option would not provide the lowest BI TCO.

Only a truly scalable solution meets the unique information requirements of an unlimited number of diverse users everyday, and in real time.

A major bank recently deployed its BI solution both inside and outside its enterprise. It is estimated to be the largest current deployment of business intelligence, with 800,000 commercial and internal users actively accessing and interacting with banking data. The bank's initial objective was to integrate the nationwide, disparate systems and applications acquired through years of mergers and acquisitions. By first leveraging and successfully integrating its then-existing IT investments they stopped the fragmented proliferation of BI tools. Then, using the only scalable BI solution that doesn't compromise application performance and requires minimal hardware/maintenance costs, the bank deployed its Web-based application to meet customer requests for bank account information. Having a completely scalable solution was necessary, since the goal of providing customers with instant access to their banking transactions directly reflects the organization's ability to provide the best customer care.

As organizations begin to deploy their applications globally, many are beginning to appreciate the significant benefits of standardization. When a user community grows into the millions and an organization standardizes on a truly scalable BI solution, then optimum performance is ensured throughout the enterprise and beyond at the lowest total cost of ownership.

### **Ensure Lowest TCO – Build a BI Competency Center**

To achieve all of the objectives in this white paper, build a BI Competency Center dedicated to making consistent decisions. Ultimately, the goals of the BI Competency Center are to evaluate the organization's infrastructure, identify improvements that should be made, and ensure that centralized end-user training and support are provided. The BI Competency Center should ensure that strategic vs. tactical decisions and purchases are made using business and technical best practices. Therefore, it is necessary to enlist people who are knowledgeable about both the organization's business and technology.

The BI Competency Center staff should understand user-reporting needs and match the tools accordingly. After assessing the underlying infrastructure, reporting needs, and data sources of the enterprise, develop a business intelligence reporting strategy. According to *Computerworld*, BI applications should be designed as "cross-organizational, multi-dimensional querying and reporting systems." Finally, evaluate the total cost of acquisition and the projected benefits when researching vendors to help you implement your solution.

## Conclusion

Building and deploying a BI solution that cost-effectively scales to the entire organization doesn't have to be difficult or require excessive resources/time. Your departments, groups, and divisions can be united and your enterprise's legacy assets can be effectively leveraged and integrated. Aligning enterprise efforts does not require consolidation and standardization upon only one solution, but the coexistence of a few. The optimal way to standardize is to identify the most robust tools throughout the organization and then strategically implement a BI solution which will cost-effectively support a growing number of users.

## About Information Builders

For more than 29 years, Information Builders has been providing award-winning technology and superior service to leading organizations around the globe. That's why more than 12,000 customers worldwide – including most of the Fortune 100 and most U.S. federal government agencies – rely on us to provide the lowest business intelligence TCO by turning their enterprise data into actionable information that drives business results.

We are the only software vendor who can help you get more information to more people for less than what you're spending today. The benchmark study by Ventana Research confirms this: Information Builders is the lowest-cost vendor for the largest category of business intelligence, by as much as \$1.7 million for a 10,000 user scenario. Their conclusions found us to be an extremely cost-effective solution for large-scale environments.

If your current business intelligence solution does not meet today's enterprise scalability requirements, it will not grow cost-effectively to meet future information demands. We offer the only business intelligence suite that scales to the most people in any extended enterprise and beyond, at the lowest per-user cost. Empowering all your users, from senior executives, managers, developers and analysts to suppliers, customers, and the general public, will generate revenue and create efficiencies throughout the organization to enable your business and competitive advantage to grow.

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