



## **Build or buy: Selecting an Analytic Application**

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## Abstract

The face of globalization is changing. According to the third edition of IBM's 2008 Global CEO study, private and public sector leaders agree that success in the global economy no longer relies exclusively on simply harnessing the untapped potential of emerging markets. These days, success involves a business view that demands greater organization and market integration on a global scale.

Organizations increasingly find themselves looking inward as they work toward improving their ability to compete in these larger, more diverse competitive business environments. That they need to improve their tools and processes to provide greater visibility into all levels of organizational performance is a given. What hasn't been as clear – until now – is how they go about acquiring these capabilities.

Increasingly, a new generation of packaged applications is enabling organizations to anticipate and explore their performance at the specific point of business impact. This packaged approach allows employees to gain faster insight through integrated, cross-departmental reporting and analysis. It also enhances performance stewardship and ultimately enables smarter decision-making within their departments and across their organization. With integrated horizontal applications, decisions are no longer made in isolation, but as part of a common decision making framework that helps organizations, departments and individuals align business outcomes and improve performance.

The inevitable shift toward acquiring this packaged capability and not developing it in-house lets companies focus on what they do best, and prepare for and respond to accelerating changes in their respective markets with greater agility than would otherwise have been the case.

## Overview

New business opportunities increasingly occur further afield. Global integration now preoccupies senior executives keen on enabling “faster and more extensive collaboration on a worldwide scale and rapid reconfiguration when new opportunities appear.”<sup>1</sup> This need for corporate nimbleness is driven by continually changing markets – both established and emerging – whose rate of change will continue to accelerate. It’s what some senior executives refer to as a “white-water world.”

Navigating the rough waters of change, however, requires an organizational capacity “to collect [information] through its many channels and actively mine it for insights.”<sup>2</sup> Here, the business case for optimizing back-office functions, such as HR, finance, procurement and customer relationship management, represents fertile ground for beginning to manage and respond to changing business conditions at local and global levels.

The need to leverage information more effectively has never been greater. Revenue starved, cash strapped companies need to rein in costs, drive efficiencies and sell more products to more customers. But that doesn’t necessarily mean selling harder. Instead, they need to sell smarter – and that takes not just data, but the ability for everyone in the organization to see it, consolidate it and manipulate it to gain the insight they need to identify prime opportunities and close deals.

Unfortunately, data from these functions usually resides in the recesses of an organization’s ERP and other systems. It lacks context, and often presents multiple or even conflicting versions of an organization’s performance. Unfortunately for most organizations, the choppy waters of change continue to pressure them to extract and use greater levels of insight. Organizations need a consistent view of how they’re performing, a single version of the truth to help them meet, head on, the opportunities that change brings. The turbulent external business environment means they can’t afford to wrestle with inconsistent information, and they can’t afford the time and resources required to come up with their own solution.

Fundamentally, these issues lie at the heart of the performance management debate – one that begins with and revolves around these key questions:

- How are we doing?
- Why?
- What should we be doing?

Asking these questions is the first step in a long-term journey. The answers that result will help the organizations that have the courage to ask them to start optimizing their business processes. These processes must be optimized to manage change globally.

## Business problems

*The challenge is drawing the right information from the right data source.*

This is where analytic applications are proving their value. As more organizations embrace analytic applications, they are faced with a critical decision, namely whether to build their own solution or buy an existing one. As they discuss the build-vs.-buy issue, they need to assess the benefits – and drawbacks – of each approach. Should they trade customization for better time-to-deployment? Where are the hidden obstacles? Which approach holds the greater potential to drive organizational performance, sooner?

This white paper will examine the business value of analytic applications and identify the tradeoffs in the decision to either build a custom application or buy a packaged application.

*Analytic applications – a definition*

Analysts at Gartner Research define analytic applications as software that can “analyze and process data to deliver the information users need to make better business decisions.”<sup>3</sup> Essentially, the core value of analytic applications lies in their ability to pull information from ERP and other sources into standard reports that compare and contrast the data against specific indicators that organizations use to evaluate their performance.

Gartner defines analytics applications as those solutions that have:

- Defined methods for extracting data from different systems
- Defined means of analyzing the data, typically within a data warehouse
- Defined ways of reporting this information, typically in packaged reports

The challenge lies in extracting this information from numerous application silos, often ERP systems, in ways that support business workflows and don't overwhelm end users. Solutions that easily match specific roles throughout the organization and can be customized out of the box to support individual and organizational performance goals – without requiring extensive reprogramming or ongoing IT support – stand the greatest chance of driving performance and enhancing agility and competitiveness.

## Business drivers

### *The importance of analytic applications*

Analytic applications matter to organizational performance because working without them can force organizations to operate less efficiently and effectively than they ought to. Corporate finance departments, for example, often struggle with timely and accurate monthly, quarterly and year-end closes, as well as general management reporting, especially for general ledger, accounts payable and accounts receivables in highly distributed enterprises.

Results from IBM's 2008 CFO survey underscore the challenges businesses face in providing a single version of the truth. According to the survey, 74% of respondents said that it was important to continuously improve financial processes, but only 42% claimed to be effective in doing so. At the same time, 75% said it was important to align finance with the business, while only 55% reported achieving that alignment.

In the absence of analytics, spreadsheets rule. But reliance on spreadsheets is problematic. In a paper written by business professors from the Tuck School of Business at Dartmouth College, researchers examined 25 spreadsheets provided by two consulting companies, a financial services firm, a manufacturing company and an educational institute. They found 117 errors, 60% of which had a quantitative impact – the largest of them, a staggering \$100 million.

Performance challenges loom, however, beyond finance and into sales and other business functions. Gartner, for example, predicts between now and 2012, “Enterprises will miss the equivalent of 10% of total annual sales in ‘lost opportunity’ revenue that could have been captured as a result of better insight on sales activities and target markets.”

Shortfalls in supply chain performance, meanwhile, are also placing organizations at risk. A 2007 Aberdeen Group survey of CFOs and CPOs (Chief Procurement Officers) confirms that “procurement by its own admission fails to implement 21% of the savings identified from its sourcing efforts.”

Lastly, according to a recent IBM Global Human Capital Study, “The inability to use human capital data and information makes it difficult for HR to engage in a strategic workforce discussion.”<sup>24</sup> The same survey also reported that only 6% of companies interviewed felt they were very effective at using human capital data and information to make decisions about the workforce.

In each of these examples, management suffers from disparate information. The ability of organizations to fully understand their performance is obstructed by islands of information and data housed in multiple systems and sources across different subsidiaries, even acquired companies. To gauge their overall performance accurately, organizations require analytic applications that can present performance data consistently without requiring users to jump through obstacles to obtain and analyze it.

*The analytic landscape*

Most large organizations use ERP systems to consolidate day-to-day transaction data and manage business functions. These systems are very good at what they were designed for – tracking transactions and running day-to-day operations – and they often come with some operational reporting capability.

But as effective as they are at operations and at accumulating significant amounts of performance-related data, ERP systems do not support the flexible, ad hoc analysis and reporting that businesses need today. They are function-specific, and do not typically allow for cost effective, timely customization. For example, to generate a report that would show product line sales by region and by sales person for the past five years would typically be very time-consuming, if possible at all, with an ERP system.

With their multitude of tables, fields and column names, ERP systems are not well-suited to end-user navigation. Without easy information access, and the means to quickly analyze and report on findings, users can easily overlook business correlations or veer off-track completely. In addition, when even a small number of users attempt to perform analytic queries simultaneously, it can have a significant impact on ERP system performance, jeopardizing essential production system functions. In an environment where even a single complex query can cause performance issues, imagine the effect of hundreds or thousands of users attempting to perform business analysis.

Essentially, ERP systems are not intended to serve as analysis and reporting solutions. They accumulate and structure data, but they do not have the capability to unlock that data for effective business analysis and reporting. When evaluating analytic applications, organizations should ask the following questions:

- How quickly can our department get a view of our performance?
- How quickly can the application adapt to changing business requirements?
- Can the application be extended to support an integrated business intelligence and performance management vision for our organization?

## The solution

### *Packaged reporting*

Individuals at all levels of the organization are constantly challenged to understand what's going on – right at the specific point of business impact – and then use their detailed knowledge of the current situation to make more effective business decisions.

Let's consider this example of how one organization might use a packaged analytic application. The VP of a billiard vendor uses her BlackBerry to review sales performance of their key products. Because IBM Cognos 8 Go! Mobile lets her see the same reports on her mobile device as she does on her desktop – no need to get IT to reformat them – she quickly spots a problem: Sales of two critical products, including a high-margin pool table that traditionally sells well, are falling rapidly.

She e-mails the report to her sales operations manager and asks him to investigate. Armed with this report, the manager uses a dashboard that displays information from a sales analytics application to assess sales by product, by customer and by channel. Upon opening the dashboard, he drills down to better understand what's driving this, and discovers a high return ratio for the high-end product. Further digging into additional packaged reports helps him conclude that most of the returns are due to defective product.

Armed with this knowledge, he calls his VP back to discuss the cause, and how they intend to address it. In this case, the solution leveraged one reporting environment to facilitate a consistent means of collaborative analysis over multiple products – but one environment that could look at information in different formats, at the operational and executive level. Using a spreadsheet-based model would have been significantly messier, inaccurate and time-consuming.



Examples like this show how packaged reporting applications can map core performance indicators to specific ERP data to generate a standard reporting view for analysis. Whether for finance, HR, or in this case sales, packaged reports are a defining feature of analytic applications. In short, they are reports based on established business rules that govern how to derive measures that do not appear in ERP systems and must be created.

To filter all of the data available to users, packaged reports provide built-in metrics and key performance indicators. The ability to monitor these metrics and quickly identify performance discrepancies ensures the efficient use of end users' time. Out-of-the-box packaged reports provide extensive analyses, including rankings, comparisons, rationalizations, and summary analyses, all of which are designed to isolate the underlying causes of changes in business performance. This final level of understanding gives users the confidence to take action based on facts, instead of intuition or guesswork.

Once users are aware of the changes in key metrics and have isolated the causal events through analysis, it is often necessary to corroborate their findings by drilling down to transaction-level detail to fully understand what is happening. Obtaining this final level of understanding gives users the confidence to take action based on facts, instead of intuition or guesswork. They can make decisions faster and more confidently, and act more decisively and effectively.

#### *Adaptability*

As we have said, change is a constant in today's business environment. No business is ever static – and that includes the packaged reports used to evaluate performance. All too often, organizations spend a lot of money modifying or customizing their reports. As one analyst noted, modifications to analytic reports for one vendor can take up to six months. Unfortunately, in today's economy, most businesses don't have six months. They need this capability now.

One approach to resolve this challenge is to have a highly adaptable solution.

Currently, when deploying a traditional application, IT must go through a series of steps:

1. Identify transactional sources
2. Write ETL code to extract data from sources
3. Load data to some form of repository (e.g., a data warehouse or datamart) to create or author reports and push this information to key stakeholders in the organization

Each of these steps requires highly skilled people, takes a long time and is error prone.

Another approach is to use an embedded datamart residing in the application to manage data coming in and out. Instead of creating additional code, end users use an adaptable solution to generate it automatically, significantly reducing the error rate and time to change. The end result is that the packaged application is model-driven versus code-driven. This reduces the cost and time of adding or changing reports.

By making provisions for the unique way an organization operates, an adaptive approach allows them to easily modify the data extraction processes to add new information from both ERP and non-ERP sources. The adaptive approach can also create new metrics that will reflect sudden business changes, and enable different departments to add dimensions, subject areas or fact tables for use with these diverse data sources.

What does this mean for end users? It means that what once took two to five weeks, now takes only a couple of hours. It means that rather than the lengthy development of requirements documents to support changes, as well as the cost associated with making them, power users can collaborate and add new measures and reports over the phone. It obviates the need to submit a request to IT, then wait for the updated report to be completed.

Here too, organizations need to weigh the cost and time associated with managing changes to their analytic application. In other words, can I modify my packaged applications cost effectively and quickly?

*Integrated business intelligence*

Gartner underscores the tightly knit relationship between business intelligence and analytic applications when it says: “The best packaged analytic applications will be architecturally extensible and can be integrated with other BI applications and architectures.”<sup>5</sup>

Gartner also says that analytic applications supplement the value of BI by providing core analysis right in a packaged format. This packaged analysis provides a gateway to a suite of BI tools, including scorecards and dashboards, that can offer an enterprise-wide performance barometer.

Outside of an integrated BI approach, analytic applications run the risk of being siloed, providing a narrow overall view of performance. Desirable capabilities for a broader BI view of performance include:

- Reporting and analysis
- Dashboarding and scorecarding
- Planning, budgeting and forecasting

These capabilities underpin an integrated performance platform containing metadata, data and security services. And as organizations look for the right BI mix to match their needs, they’re taking a broader view. Increasingly, BI and performance management are viewed as strategic to an organization’s success and are often areas of high ROI that contribute to significant competitive advantage. Gartner reinforces this point when it reports: “Analytic applications form a key part of a BI and performance management strategy.”<sup>6</sup> With this in mind, then, the question for many organizations is: Can I afford not to have my analytic applications integrated with BI and performance management strategy?

*Purchasing options: Build your own*

There are benefits to building an organization-specific analytics application. Organizations often have unique business processes that drive the desire to build a custom application. By starting from scratch, an organization can design how it handles business processes and rules and have complete control over the solution from planning to implementation. From one point of view, the ability to map business processes internally to a data warehouse is appealing.

Creating and implementing an enterprise data warehouse is not easy, however. It involves a series of complex steps and activities, and requires expertise in numerous specialized areas. It is also time-consuming, typically taking 18 to 24 months to complete. While analyst reports vary on the project completion rate for developing in-house applications, The Standish Group estimates that in-house projects are completed on time and within budget only 10% to 15% of the time.

Despite the substantial hurdles, some IT departments elect to build data warehouses themselves. As a result, projects tend to be over budget, behind schedule, or abandoned due to the unanticipated complexity of building an effective model for extracting, transforming and loading data.

Nonetheless, many organizations have BI tools in-house, so it may appear cost-effective to build a solution. After all, the organization has already purchased and paid for the tools, and presumably there is some level of proficiency in using them. For many organizations, these existing tools and skills provide sufficient justification for building an analytics application. But to own, not just build, an application requires institutional knowledge of the tools and end-user business needs.

Consider these questions: What is the cost of the application if key developers and architects leave the organization? Is there a procedure for skills transfer? How many variables within your business will you have to map to create the packaged reports an organization's business unit needs? Is devoting resources to developing and implementing a customized solution the most value-added use of scarce funds, people and time?

Now add in the specialized knowledge for LOB functions in sales, procurement, workforce and finance. To create a truly robust application, the organization's developers need to understand core performance indicators in different department areas. Once built and deployed, the custom application will also need to be maintained and upgraded.

Against this backdrop, organizations need to ask themselves whether the risk, cost and time are worth it.

*Buy your analytic application*

Buying a packaged analytics application does not mean trading flexibility, features or vertical-specific functionality. In fact, first-class analytic applications offer all of these, with a better ownership proposition than building.

Buying analytics applications also provides benefits beyond lower total cost of ownership. Best-practice content can be deployed through self-serve packaged reports, very often right out of the box to provide a consistent view of performance. Packaged analytic applications come with connections to data sources, an embedded datamart and available reporting content. This is achieved by delivering:

- A singular view of performance that consolidates information from different data sources
- Packaged reporting and analysis that drives faster time to value and is highly adaptable
- A common business and analytic data model that provides consistent analysis across different departments
- Access to performance management systems that enable customers to anticipate and explore business outcomes
- Consistent management of risks and controls, along with more transparent access to and reporting of information by employees

No matter how skilled or effective in-house developers may be, they are rarely also experts in specialized line of business areas. On the other hand, packaged applications have the cumulative benefit of years of specialized development, with built-in best practices and business processes that can be deployed quickly across an enterprise.

Packaged analytic applications are also faster to deploy. For many organizations, the ability to quickly deploy an analytics application – and gain that single source of data for business decisions – is much more important than having a completely unique application. Using a packaged approach with built-in best practices is also easier to manage through self-serve reporting. This frees IT resources, and allows IT to be more proactive in adding value to their organization's growth.

As well-organized and best-practice-driven as packaged analytics are to begin with, however, they will not remain static. Businesses change and so, too, do the indicators by which organizations make performance assessments. Changing the measures and reports within an analytic application can be a time-consuming and costly process, both for custom and for some vendor analytic applications. Modifying and adding new reports is critical to keeping pace with the speed of business change. And the adaptability of an analytic application must be foremost in the consideration of any purchase.

Consider business users, for example, who might define a new measure for a “large” customer as one that generates more than \$50,000 in revenue per month. Other users in the same organization might define a large customer as one that orders more than 100 units per month, although it may only represent \$10,000 in revenue. In these cases, people can mistakenly think that they are discussing common metrics when they are not. And not only can different models define dimensions differently, they can calculate measures differently as well. These inconsistencies can create misunderstandings, interrupt schedules and increase the cost of adapting your application.

In fact, the Standish Group also reports that 30% of all project costs are associated with rework. Requirements mistakes account for up to 70% of this cost.

That's why an adaptable solution makes sense. It allows organizations to change reports and measures quickly, since they are already automatically generated. Without the ability to adapt their analytic applications quickly, organizations are at risk for a high total cost of ownership.

The final value of a packaged and adaptable analytic application is in its integration into a business intelligence and performance management solution. Analytic applications need a baseline to provide insight. The capacity to reference core performance indicators and then display this information in different dimensions through dashboards, scorecards and other reports is critical.

Custom solutions are simply not equipped to provide this level of sophisticated analysis. To get to this level would mean applying additional resources and cost.

#### *Purchasing an analytic application*

Analytic applications are an organization's front-line business intelligence solution, offering an opportunity to evaluate overall performance early in the business planning cycle. But choosing to build or buy is a big decision. Remember these questions:

- How quickly can our department get a view of our performance?
- How quickly can the application adapt to changing business requirements?
- Can the application be extended to support an integrated business intelligence and performance management vision for our organization?

These are the critical questions that shape the value of an analytic application. As the following list in the Conclusions section indicates, their answers establish a clear advantage for buying a packaged analytic application, rather than building a custom one.

## Conclusions

### *The advantages of buying packaged analytic applications*

#### **Faster time to value**

All the steps for building a datamart solution have been completed and put in the box. This drives value in and time out at every step: Modeling the problem, preparing the data, analyzing and delivering insights. The result is packaged components that ensure IT and business people a faster time to insight with data integrity, quality, reliability, and accuracy.

#### **Packaged business intelligence**

Leading analytic applications combine market-leading BI tools with business best practices, resulting in a unique value for users. The built-in business knowledge is based on years of experience and deep expertise with analytic applications and business intelligence. This breadth and depth of BI ensures that organizations have the right tools for every role.

#### **Adaptable**

Vendors provide the tools used to ease the configuration of any piece of an application – whether adding additional ERP and non-ERP data, new areas analysis, customer-specific metrics, new/reports and analyses, or new BI pieces to access the content.

#### **Ready to use**

Analytic applications are purpose-built for leading ERP and other data systems. They sit on top of a single enterprise data model, allowing the solution to rapidly integrate into enterprise environments with a minimum of IT effort. IT also benefits from easy configuration to reflect their unique ERP environment, built-in best practices in BI and datamarts, including the synchronization of incremental data updates and dimensions.





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### Endnotes

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