Build or buy: Selecting an Analytic Application

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Abstract

Executive Summary

In the third edition of IBM's 2008 Global CEO study, private and public sector leaders agreed that the focus of globalization is gradually shifting. From simply harnessing the untapped potential of emerging markets, success in the global economy now involves a business view that demands greater organization and market integration on a global scale.

Overview

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."[1] This need for corporate nimbleness is driven by continually changing markets – both established and emerging. 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."[2] Here, the business case for optimizing back-office functions, such as HR and finance, is fertile ground for beginning to manage and respond to changing business conditions at local and global levels. Unfortunately, data from these functions usually resides in the recesses of an organization's ERP and other systems. It's data without context, often presenting multiple or even conflicting versions of an organization's performance. But in the choppy waters of change, 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.

Fundamentally, this is the heart of the performance management debate. The capacity of organizations to answer: How are we doing? Why? And, what should we be doing? It represents the start of a journey for organizations to begin optimizing their business processes to answer these fundamental questions. But they must be optimized to manage change globally. And these optimized processes must be embedded in the regional business circumstances for a consistent perspective on the performance of global integration and business change.

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 the build-versus-buy discussion. Should they trade customization for better time-to-deployment? What are the benefits to each approach? Where are the hidden obstacles? 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."[3] 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 groups analytic applications into three categories: 1) Strategy-driven applications that "measure and manage performance against plans and objectives"; 2) Analyst-driven applications that perform detailed analysis across different data sources, such as ERP; and 3) Process-driven applications that provide insight into process and event-based activities, such as payment history and outstanding debt.

More often than not, these definitions overlap, as organizations look to vendors for a broad operational and cross-functional view of performance.

The challenge is drawing the right information from the right data source. And the challenge lies in extracting this information from numerous application silos, often ERP systems.

Business Drivers

The Importance of Analytic Applications

Why are analytic applications important? 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 this business challenge – the ability to provide 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.

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These gaps affect a wider spectrum of business challenges that strike not only at the heart of an organization's performance, but also its credibility in the marketplace.

The alternative to a financial analytic application is typically the spreadsheet. 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.

This is just the tip of a very large iceberg. The closing cycle is a common metric that highlights how well the office of finance can provide timely performance information to an organization's management team. It is not uncommon, for example, for organizations to have 27 different systems for sourcing data, often requiring up to five weeks to create a custom ERP report. The Hackett Group reported that in 2007 the average company took nearly six days to close its books, up from 5.2 days in 2003, with another five days spent on reporting.

Corporate and regional finance analysts need a consistent way to reconcile their data. Financial data trapped in different ERP systems and other sources make it difficult to prepare accurate, up-to-the-minute monthly management reports. For publicly traded companies, it becomes a legal and shareholder issue that can strike at the core of the reputation of an organization and its management team.

Another pressing example is human capital management. According to a 2007 Manpower study of 37,000 employers in 27 countries, 41% of companies worldwide have difficulty filling positions due to a lack of suitable talent. While organizations may be comfortable today with their ability to compete for talent, the aging workforce and increased competition for workers will place new pressures on companies to attract candidates and retain high performers.

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."[4] 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. This is not surprising, considering the example of one public service organization that had 42 different HR systems in place.

In each example, finance and human capital management suffer from disparate information. The ability of organizations to fully understand their performance is obstructed by islands of information, 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. As one CEO said in IBM's survey, "We must move to global coordination, but with local sensitivity. Even the back office requires balance."

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-today operations — and they often come with some operational reporting capability.

But ERP systems do not support the flexible, ad hoc analysis and reporting that businesses need today. They are function-specific, and may not reflect customizations to ERP systems. 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

Packaged reporting applications map core performance indicators to specific ERP data to generate a standard reporting view for analysis. Whether for finance or HR, 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 — such as average days of coverage, days outstanding, and financial ratios — 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.

But the critical question buyers need to ask is: How quickly can our organization implement and use packaged reports?

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.

One approach, however, is to have an adaptable warehouse.

Currently, when deploying an application, IT must go through a series of steps: 1) identify transactional sources; 2) write ETL code to extract data from sources; and, 3) load data to some form of repository (e.g., a data warehouse) 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 adaptive warehouse to manage data coming in and out. Instead of creating additional code, end users generate it automatically through an adaptable warehouse, 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 you to easily modify the data extraction processes to add new information from your ERP source, or from non-ERP sources. The adaptive approach can also create new metrics that will reflect sudden business changes, and enable either finance or human resource departments to add dimensions, subject areas, or fact tables for use with ERP or non-ERP 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.

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."[5]

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.

Packaged analysis provides a gateway to a suite of BI tools, including scorecards and dashboards that can offer an enterprise-wide performance barometer.

Organizations are looking for the right BI mix to match their needs. 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."[6] 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 process and rules. From one point of view, the ability to map business processes internally to a data warehouse is appealing.

In its report, "Analytic Applications: Buy vs. Build vs. Customize," Gartner cautions that "custom approaches also cost more, take longer and are more likely to fail."[7]

Creating and implementing an enterprise data warehouse is not easy. 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. 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. It is not unusual for these projects 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. 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?

Now add in the specialized knowledge for financial or human capital management. To create a truly robust application, the organization's developers need to understand core financial and HR performance indicators. Once built and deployed, the custom application will also need to be maintained and upgraded. Adding new functionality is expensive. In fact, according to Gartner, "the largest cost component (total cost of internal and external implementation costs) is the service element, ranging between one to five times the software costs.[8]

Organizations need to ask themselves, is the risk, cost and time 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. For example, Gartner reports, "packaged solutions are also appropriate if there is more complex business functionality, such as currency conversion or compliance with one or more generally accepted accounting principles (GAAP) for presenting data."[9] 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.

As good as an in-house development team may be, they are not experts in specialized areas such as finance or HR. 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.

As cited above, custom applications can be integrated with other custom applications. However, when dealing with standard core enterprise systems, such as ERP, general ledger, HR systems and others, packaged analytics have an edge. In order to appeal to a broad market, packaged applications have to be designed for easy integration with other industry-standard systems.

That single source of data for business decisions – is much more important than having a completely unique application.

Packaged analytic applications are also faster to deploy. Gartner states, "packaged applications offer faster-to-deploy implementations."[10] 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 can prove to not only be faster to deploy, but easier to manage through self-serve reporting and configuration. This frees IT resources, and allows IT to be more proactive adding value to their organization's growth.

As well-organized and best-practice-driven as packaged analytics are to begin with, 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.

The reason? Because of the sheer scope of the task involved, and the difficulty of reaching a consensus on new business measures and other issues, it is not uncommon for companies to delay or even abandon these changes as too complex, too expensive, and too time-consuming, resulting in a zero return on a significant custom investment.

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.

That's why an adaptable warehouse 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 indicates, their answers establish a clear advantage for buying a packaged analytic application, rather than building a custom one.

Conclusion

The Advantages of Buying Packaged Analytic Applications

Accelerated Time to Result

All the steps for building an enterprise warehousing 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.

Built-in Business Value

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.

Adaptability for Competitive Advantage

Vendors provide the tools used to build applications to ease the customization 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 customizations to reflect their unique ERP environment, built-in best practices in BI and data warehousing, including the automation of incremental data updates and slowly changing dimensions.

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Endnotes

1 "The Enterprise of the Future," IBM Global CEO Study, 2008

2 Ibid.

3 "Understanding Packaged Analytic Applications," by Nigel Rayner, November 2, 2007, Gartner.

4 IBM Global Human Capital Study, 2008.

5 "Understanding Packaged Analytic Applications," by Nigel Rayner, November 2, 2007, Gartner

6 "Analytic Applications: Buy vs. Build vs. Customize," by Neil Chandler, November 2, 2007

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8 Ibid.

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