Understanding the Development and Use of Analytical Business Intelligence Applications

By Elliot King, Ph.D
Professor of Communication
Lattanze Center
Loyola University Maryland
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INTRODUCTION

The term business intelligence includes the processes, practices, skills, technologies, and applications used to support data-driven managerial and operational decision-making. Business intelligence can utilize real-time and/or historical data and can include reporting applications, analytic applications, and predictive analytics. Reporting applications (sometimes known as operational reporting) generally involve extracting specific data from production systems in real time or on a periodic basis and delivering it to the appropriate end users. Analytical applications are generally used to measure and improve the performance of business operations as well as identify trends. Predictive analytics involves applications used to perform “what-if” analyses or scenarios, or future state modeling.

Since the term business intelligence can refer to several different activities, the exact nature of its use in organizations can be hard to understand. Business intelligence can refer to data to support executive decisions, to techniques used by business analysts to understand and project trends, and to the data that mid-level managers may receive daily or weekly to monitor their operational performance.

Along the same lines, there is no single way in which business intelligence applications are implemented. Some organizations run packaged business intelligence applications drawing data from information from a data warehouse. Others may pull data from a production database and dump it into a spreadsheet for reporting. To some degree, both could be considered business intelligence implementations.

The objective of this report is to better understand the place of business intelligence analytic applications in the enterprise — those business intelligence applications used to measure and improve the performance of business operations and to identify trends to support decision-making. The report has four major areas of inquiry. The first area probed the overall information infrastructure companies use to support their analytic business intelligence implementations. The second area of inquiry probed how business intelligence applications are developed, including the decision-making process involved in developing analytical business intelligence applications. Particular attention was paid to users of the Oracle Business Intelligence Suite Enterprise Edition. In this process, companies frequently face build-versus-buy decisions. The third area of exploration looked at the usage patterns of analytical business applications in the enterprise and their return on investment. The final area examined budgeting, investment, and the outlook for analytic applications.

KEY FINDINGS

- IT professionals and end users working collaboratively generally decide which analytical applications to develop.
- IT professionals and end users working together generally develop analytical applications.
- Most analytical applications take more than a week but less than six months to develop.
- Most companies customize packaged applications to develop new analytical applications.
- Determining the scope is the greatest challenge in developing analytic applications.
- Key performance indicators are the most widely deployed analytic application.
- Financial analytics is the most widely used analytical application.
- The use of analytic applications is growing rapidly.
- Investment in analytic applications is growing but not as sharply as usage.
- Most companies do not have a formal methodology for evaluating the effectiveness of analytic applications.
From mid-December 2009 until early January 2010, email solicitations were sent to an email list consisting of 20,000 people, primarily IT professionals, inviting them to participate in a survey geared to understanding the use business intelligence. Additionally, survey invitations were posted on several LinkedIn Groups serving the Business Intelligence, Data Warehouse, and Business Analytics markets. As an incentive to take the survey, respondents were offered a summary of the survey results and the option to sign up for a sweepstakes drawing for an Apple MacBook Air computer. Three hundred and eighty-seven people responded, including 266 or 69.3 percent who indicated that analytical business intelligence applications were used in their organizations. The term business intelligence analytics was defined as business applications used to measure and improve the performance of business operations and to identify trends to support decision-making. They include dashboards; role-based analytic applications to measure performance in areas like financials, supply chain, sales, marketing, and human resources; industry-specific applications such as key performance indicators and scorecards; and other similar applications.

The body of this report reflects the responses of those 266 respondents. The survey took, on average, 7 minutes and 32 seconds to complete.

The respondents came from companies of all sizes and from a wide array of industries. Almost half, about 47 percent, worked in companies with more than 1000 employees while fewer than 15 percent were in organizations with less than 100 employees. Along the same lines, nearly 20 percent of the respondents were in organizations with more than $1 billion in revenue while about 18 percent were in organizations with less than $10 million in revenue. Government/Education/Non-profit/Military was the industry group that accounted for the most respondents with around 36 percent of the total, followed by technology, manufacturing, and financial services. Finally, respondents fell into a broad number of job classifications. Not surprisingly, director/manager of IT/IS was the most common title for respondents — about 25 percent of the respondents held that title. No other single job classification accounted for more than 10 percent of the respondents, demonstrating a large interest in business intelligence in many organizations. A complete representation of the respondents is in Appendix A. Except for the distribution of job titles, the response generally mirrors the demographics of the base list. This is evidence that business intelligence is broadly used and not limited to one industry sector, or necessarily bound by the size of a company.

**LIST OF FIGURES**

- **Figure 1**: What are the primary data repositories for BI analytic applications? (Check all that apply)
- **Figure 2**: How many source systems feed your data warehouses(s)?
- **Figure 3**: What approach did you use to develop your data warehouse?
- **Figure 4**: What is your enterprise business intelligence platform(s)?
- **Figure 5**: Who primarily decides what kinds of analytical applications will be used in your enterprise?
- **Figure 6**: Who primarily develops new analytical applications for your enterprise?
- **Figure 7**: On average, how long does it take from the time it is decided that a new analytic application is needed until the time it can be used by end users?
- **Figure 8**: In the process of bringing a new analytic application into production, rank the most significant challenges.
- **Figure 9**: On average, how long does it take from the time it is decided that a new analytic application is needed until the time it can be used by end users? (Oracle users compared to total sample)
- **Figure 10**: In the process of bringing a new analytic application into production, rank the most significant challenges. (Oracle users only)
- **Figure 11**: Enterprise-wide, (including senior executives, line managers, and business analysts), how many people in your organization use analytic applications to monitor and improve performance and/or identify trends?
In many ways, the use of business intelligence applications for analysis is closely tied to an underlying information infrastructure. Companies that more aggressively use analytical applications often develop data warehouses or data marts to serve as repositories for the data to be analyzed. Data warehouses are often particularly appropriate for enterprises with heterogeneous database environments. Other enterprises may draw data directly from their production systems for analysis.

As could be expected, the two most popular production databases in operation among respondents were Oracle and Microsoft SQL Server. Both Oracle and Microsoft could be found in around 66 percent of the enterprises surveyed. Interestingly, Microsoft SQL Server is in production in about two-thirds of the shops running Oracle, while the Oracle database is found in two-thirds of the shops that run SQL Server (respondents were allowed to check all the databases in production at their organizations). IBM DB2 (any version) is the next most commonly found production database, found in about 20 percent of the shops surveyed.

As Figure 1 shows, data warehouses are the most common data repository for data used in analytic BI applications. More than 60 percent of the respondents indicated that their enterprises have a data warehouse deployed. Interestingly, slightly more than 45 percent also used production databases as a source for data for analytical applications.
Although they are often costly and complex to implement, data warehouses are not a new technology. Among the respondents, 38 percent had supported a data warehouse for five or more years. Only around 12 percent had new data warehouses — less than a year old. And the data warehouses held a significant amount of information. More than half (52 percent) of the data warehouses had more than one terabyte of data. On the other hand, nearly 20 percent of the respondents’ data warehouses stored less than 100 gigabytes of data.

One measure of the comprehensiveness of a data warehouse is how many source systems feed into it. As Figure 2 shows, around 42 percent of the data warehouses had two to five source systems feeding into them, while more than 28 percent had 10 or more source systems. A 2007 survey entitled “Moving from Analytics to Operational Business Intelligence: The Changing Role of the Data Warehouse” indicated that slightly more source systems were feeding the data warehouse, so the typical number of source systems may be getting smaller.

As mentioned earlier, data warehouses can be complex development projects. As Figure 3 shows, 60 percent of the respondents used some kind of off-the-shelf software to develop their data warehouses. More than a quarter, however, used entirely custom development.
The most popular brand of off-the-shelf-software for data warehouse development was Oracle, used by about 40 percent of the respondents, followed by Microsoft (presumably Microsoft Data Warehouse Framework), which was used by 20 percent of the respondents. About 40 percent of the respondents said the amount of time needed to develop a data warehouse was six months to a year. Seventeen percent, however, needed more than two years, while 15 percent claimed that they developed their data warehouse in less than six months.

With the continuing development of data warehouse software, it was somewhat surprising that more than a quarter of the respondents custom-built their data warehouses. Respondents offered several major reasons for custom development for a data warehouse. Some enterprises simply deferred the task to consultants; some felt that custom development was needed to specifically meet their needs, particularly if the enterprises used a lot of customized and home-grown source systems; some felt a customized approach offered better confidentiality and manageability; and some felt that it required no more effort to build a customized system than it did to customize an off-the-shelf solution.

Respondents who opted to use production databases as the platform for analytic applications did so primarily because they believed it provided more efficient development and faster access to data. Unfortunately, more than half (52 percent) of the respondents using production databases for business intelligence applications found they degraded the performance of the production systems.

Clearly, for companies running analytical applications, data warehouses form the backbone of the information infrastructure for analysis. Although using off-the-shelf software, either customized or not, is the most popular approach to developing a data warehouse, a surprisingly large number of companies still use entirely customized development. While data warehouses generally store a lot of data, one terabyte or more, there are also a lot of small data warehouses with less than 100 gigabytes of data as well.

**ANALYTICAL APPLICATION DEVELOPMENT**

One of the more difficult aspects of understanding the use of analytic applications in the enterprise is exploring how analytical applications are developed. Once again, the term analytical application has different meanings for different people in different settings. Some people consider putting together a few macros to do calculations in a spreadsheet as an analytic application. On the other end of the spectrum, developing analytic applications can be a multi-month effort with significant costs in time, effort, and training expenses. And as with data warehouses, analytic applications run the gamut from off-the-shelf, out-of-the-box applications to applications that have been completely custom developed.

A common approach to developing an analytic application is to use an enterprise business intelligence platform. Such a platform represents the environment in which analytic applications are developed and deployed. Among the respondents supporting an enterprise business intelligence platform, 63 percent said a data warehouse was a primary data repository, but data marts, operational data stores, and production databases all played significant roles as information sources for analysis. Within this group, Oracle was the most popular production database with 75 percent indicating that Oracle ran in their shops, while 65 percent said they supported Microsoft SQL Server.
As Figure 4 shows, Oracle also supplies the most popular enterprise business intelligence platform, followed by IBM Cognos, SAP Business Objects, and Microsoft. Companies with more than 1000 employees account for about 50 percent of the use of the Oracle business intelligence platform.

Of the enterprises that do not support one or more enterprise business intelligence platforms, only half develop custom analytic application. Companies develop custom applications because they find it less expensive, faster, and the best way to develop applications to create specific analytical information, as opposed to using generic templates. Some respondents said that custom development provided greater flexibility and enhanced usability. Eighty-five percent of those enterprises have no plans to invest in an enterprise business intelligence platform within the next year.

Nevertheless, most companies do rely on a commercial enterprise business intelligence platform. Within that environment, the same questions associated with custom software projects arise. Among them are who decides what applications to develop; who develops the applications; what is the development strategy; how long it takes to develop analytic applications; and finally, what are the major challenges developers face?
As Figure 5 shows, deciding on which analytic applications are to be developed and deployed in an enterprise is generally a collaborative process involving both IT professionals and the end users for the application. In fact, 71 percent of the respondents indicated that both IT professionals and end users make those decisions in collaboration. In contrast, only five percent of the respondents indicated that end users alone make those decisions, and 10 percent said that IT professionals alone decide which analytic applications will be deployed.

![Figure 5: Who primarily decides what kinds of analytical applications will be used in your enterprise?](image)

(Percentages may not add up to 100 due to rounding)

Deciding on which analytic applications to develop is only the first step in the collaborative process in many enterprises. More than half the respondents said that developing analytic applications is a collaborative process between IT professionals and end users. On the other hand, even though development was a collaborative process more than half the time, IT professional were solely responsible for development nearly 25 percent of the time, a higher percentage than in the process of deciding which applications to develop. Consultants also play a much bigger role in the development of analytic applications (see Figure 6).

![Figure 6: Who primarily develops new analytical applications for your enterprise?](image)

(Percentages may not add up to 100 due to rounding)
The most common approach to developing analytic applications is to start with packaged applications and then customize those applications. Sixty-five percent of the respondents indicated they customized packaged applications either a modest amount or to a significant degree. Only 20 percent created completely customized analytic applications, and 11 percent used packaged applications out of the box. Slightly less than half the respondents (47 percent) also had a “self service” aspect to their application development infrastructure in which end users could develop their own specific applications.

Since there are varying levels of complexity associated with the different approaches to developing analytic applications, generalizing about how long it takes to develop applications on average should be understood as identifying a mid-point in a range. As Figure 7 shows, on average most companies require one week to six months to develop and deploy analytic applications. This implies that in many cases, analytic applications can be developed rather quickly and enterprises have a degree of flexibility in this area.

By a wide margin, the most challenging aspect of bringing a new analytic application into production is determining the scope of the application. This challenge is followed by the complexity of developing applications and finding the time to develop them. Training end users is also a concern but does not rank as highly as the first two (see Figure 8).

Figure 7: On average, how long does it take from the time it is decided that a new analytic application is needed until the time it can be used by end users?

- More than six months: 25%
- Less than a week: 7%
- More than a week but less than a month: 23%
- More than a month but less than 6 months: 44%

(Percentages may not add up to 100 due to rounding)

Figure 8: In the process of bringing a new analytic application into production, rank the most significant challenges.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Determining the scope of the application</td>
</tr>
<tr>
<td>2</td>
<td>Complexity of developing applications</td>
</tr>
<tr>
<td>3</td>
<td>Finding the time to develop applications</td>
</tr>
<tr>
<td>4</td>
<td>Training end users</td>
</tr>
<tr>
<td>5</td>
<td>Deploying the application</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
</tr>
</tbody>
</table>
Because Oracle was the most commonly used enterprise business intelligence platform deployed by the respondents, the length of time it took to develop applications on that platform was compared to the length of time it took to generally develop applications. The rank order of the challenges for getting to deployment was also compared. As Figure 9 shows, the results are remarkably consistent.

**Figure 9:** On average, how long does it take from the time it is decided that a new analytic application is needed until the time it can be used by end users? (Oracle users compared to entire sample)

<table>
<thead>
<tr>
<th>Length of Time from Decision to Deployment</th>
<th>Percentage Oracle Users</th>
<th>Percentage Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a week</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>More than a week but less than a month</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>More than a month but less than 6 months</td>
<td>45</td>
<td>44</td>
</tr>
<tr>
<td>More than six months</td>
<td>26</td>
<td>25</td>
</tr>
</tbody>
</table>

The same consistency is apparent in the comparison of Oracle users to the total sample when asked to rank the greatest challenges in the process to deployment (see Figure 10). Training end users is somewhat of a concern for Oracle users.

**Figure 10:** In the process of bringing a new analytic application into production, rank the most significant challenges. (Oracle users only)

<table>
<thead>
<tr>
<th>Rank (Total Sample)</th>
<th>Rank (Oracle Users)</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Determining the scope of the application</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Complexity of developing applications</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Finding the time to develop applications</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>Training end users</td>
</tr>
<tr>
<td>5</td>
<td>4</td>
<td>Deploying the application</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Other</td>
</tr>
</tbody>
</table>
USE AND BENEFITS

One of the most significant developments in the use of business intelligence applications has been the expansion of its user base. When BI was first introduced, it was often seen as a tool primarily for business analysts who could identify trends to support decision-making. Over the past several years, use has moved both up and down the organizational chart. Analytic data is now regularly used by senior management in many organizations. At the same time, some analytics may be made available even to front-line personnel on a daily basis. As Figure 11 shows, the use of business analytic applications spans a great range but is very evenly distributed.

Interestingly, the number of users of business analytics is not strictly driven by the size of an enterprise. For example, in companies with more than 1000 employees, while nearly 30 percent indicate that they have more than 500 users of business analytic applications, 25 percent indicate that they have fewer than 25 users of business analytics. Drilling down deeper, however, in companies with 5000 or more employees, nearly half (48 percent) say that more than 500 people use analytic applications, while another 37 percent indicate that they have 100 to 499 users. Use then appears to be driven by two factors—size and culture of analysis.

The community of users is also relatively evenly distributed. Business analysts continue to be the most significant user community. Forty-one percent of the respondents indicated that business analysts were the predominant users of business intelligence, 23 percent said senior executives were the predominant users of analytics, while 20 percent said that line managers were the key user group.
A broad range of applications are deployed in the enterprise. As Figure 12 shows, key performance indicators are the most widely used analytic application, followed by executive dashboards and financial analytics. Departmental dashboards are the fourth most popular application, and then there is a significant drop off to scorecards.

**Figure 12: Which analytic applications are deployed in your enterprise?**
(Check all that apply)

- Key Performance Indicators: 65%
- Executive Dashboards: 61%
- Financial Analytics: 61%
- Department Dashboards: 56%
- Scorecards: 38%
- Continuous Performance Monitoring: 36%
- CRM Analytics: 29%
- HR Analytics: 26%
- Continuous Planning Applications: 20%
- SCM Analytics: 12%
- Other: 4%
While key performance indicators are the most widely deployed analytic application, financial analytics is the most widely used analytic application, followed by executive dashboards and department dashboards. KPIs are the fourth most widely used application (see Figure 13).

<table>
<thead>
<tr>
<th>Application</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Analytics</td>
<td>1</td>
</tr>
<tr>
<td>Executive Dashboards</td>
<td>2</td>
</tr>
<tr>
<td>Department Dashboards</td>
<td>3</td>
</tr>
<tr>
<td>Key Performance Indicators</td>
<td>4</td>
</tr>
<tr>
<td>Continuous Performance Monitoring</td>
<td>5</td>
</tr>
<tr>
<td>Scorecards</td>
<td>6</td>
</tr>
<tr>
<td>Continuous Planning Applications</td>
<td>7</td>
</tr>
<tr>
<td>CRM Analytics</td>
<td>8</td>
</tr>
<tr>
<td>HR Analytics</td>
<td>9</td>
</tr>
<tr>
<td>SCM Analytics</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
</tr>
</tbody>
</table>

The discrepancy between the most widely deployed applications and the most widely used applications indicates that some analytics have a more limited user community than others. Moreover, analytics is still seen to some degree as a key financial exercise.

According to respondents, analytics have several predictable and anticipated benefits. They help organizations identify and understand trends and problems on a timely basis to improve decision-making and forecasting. They help identify areas in which efficiency can be improved. They enable decision-making to be more information based, rather than relying on hunches, hearsay, or guesses. They allow for improved reporting throughout organizations so employees have a much better understanding of the current organizational performance. They can be used to develop a composite view of performance and “one version of the truth,” and they can provide better monitoring of organizational and departmental performance. Finally, the effective use of analytics helps companies identify and respond to opportunities and threats more quickly, improving competitiveness.

In summary, while analytic applications are broadly deployed and used, financial analytics continues to be the most broadly used application (though not the most broadly deployed) and business analysts continue to be the predominant user community. These results may generally reflect the legacy use and roots of business intelligence in the enterprise.
Throughout most of the slowdown in technology in the earlier part of this decade as well as recently, the business intelligence market continued to expand at rates that were generally better than the overall information technology sector. During this period, however, several major BI vendors such as Business Objects and Cognos were snapped up by even bigger companies (in those specific cases, SAP and IBM respectively.)

According to respondents the development of analytic applications continues to be a growth area. Perhaps most significantly, as shown in Figure 14, use of analytic applications grew significantly last year and respondents anticipate that it will grow even more dramatically in 2010.

### Figure 14: Is the use of analytic applications in your organization increasing, decreasing, or remaining the same?

<table>
<thead>
<tr>
<th>Use</th>
<th>Percentage in 2009</th>
<th>Percentage in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase</td>
<td>58</td>
<td>67</td>
</tr>
<tr>
<td>Decrease</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Stay the Same</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>7</td>
<td>10</td>
</tr>
</tbody>
</table>

However, the rate of investment in analytic applications is trailing the rate of increase in its use. Thirty seven percent of the respondents said that their enterprises invested more in developing analytic applications in 2009 than the year before, and 41 percent said that they invested about the same. Only 11 of the respondents reported that their companies cut their investment in business intelligence. As for 2010, 41 percent said that their organizations plan to increase their investment in analytic applications, while only eight percent anticipated a decrease in investment. Thirty-five percent were looking for the investment to stay the same.

It is difficult to judge the absolute investment of companies into analytic applications. More than half of the respondents (55 percent) said that they did not have a separate line for analytic applications within their IT budgets. Of those that did, 16 percent said their budgets for analytic applications were under $100,000, while around 25 percent said that it was over $1 million. Not surprisingly, it is largely companies with over 1000 employees that have budgets for analytic applications that reach beyond $1 million.

Measuring the effectiveness of analytic applications has always been a challenge and continues to be so. Seventy percent of the respondents revealed that their companies do not have a formal process to measure the effectiveness of their applications. The methods used by the other 30 percent varied widely. One respondent said that before analytic applications are deployed, manual tracking tools are put in place to document the current status (i.e. processing time, etc). Once the analytic application is deployed, the effectiveness is measured against the manual tracking process. Another said that the organization measures who is using the application, how often, what queries are being generated, what tables are being accessed, and so on.
To probe the qualitative impression about the effectiveness of analytic applications, respondents were asked to agree or disagree with a series of questions about the impact of analytic applications. As Figure 15 shows, 67 percent of the respondents indicated that analytic applications effectively support executive decision-making, while 61 percent felt that they make their organizations more efficient. On the downside, only 37 percent said that analytic applications have enabled their organizations to become more profitable, and 30 percent felt that the value of analytic applications can be measured in real monetary terms.

Interestingly, respondents in larger organizations (those with more than 1,000 employees) were more likely to agree with the statement that analytic applications have made their organizations more efficient overall (67 percent versus 61 percent) than the total sample. Moreover, more respondents in large companies vs. the general sample agreed with the statement that analytic applications made managers more effective than the statement that they improved the transparency into business operations.
Respondents were also asked to rank the top benefits provided by analytic applications. Supporting executive decision making continues to be the top perceived benefit (see Figure 16).

**Figure 16: Rank the top three benefits your use of analytic applications has brought to your enterprise.**

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>They have effectively supported executive decision-making</td>
<td>1</td>
</tr>
<tr>
<td>They have improved transparency into business operations</td>
<td>2</td>
</tr>
<tr>
<td>They have made the organization more efficient overall</td>
<td>3</td>
</tr>
<tr>
<td>They have made managers more effective</td>
<td>4</td>
</tr>
<tr>
<td>They have enabled the organization to save money</td>
<td>5</td>
</tr>
<tr>
<td>They have enabled the organization to become more profitable</td>
<td>6</td>
</tr>
<tr>
<td>Their value can be measured in real monetary terms</td>
<td>7</td>
</tr>
</tbody>
</table>

The most interesting finding here is that although fewer people agree with the statement that analytic applications provide greater transparency into business operations, transparency is the second greatest perceived benefit.

The use of analytic applications continues to grow strongly within the enterprise; however the rate of investment trails the overall growth rate in many companies. Budgets vary widely and many organizations do not have a formal process to measure the effectiveness of the applications. Qualitatively, however, respondents believe that analytic applications effectively support executive decision-making, which is their greatest benefit. They also provide more transparency into business applications.

**CONCLUSION**

Business intelligence is a multifaceted term that can be applied to many different applications. Business intelligence analytics measure and improve the performance of business operations as well as identify trends. The use of business analytics is growing sharply and while investment in the sector is growing as well, investment is not growing at the same pace as usage. New applications usually take between a week and six months to develop and are the result of a collaborative process between end users and IT professionals. Most companies use customized packaged applications when developing and deploying new analytic functions. Despite the diffusion of the use of business analytics throughout many enterprises, support of executive decision-making is still seen as the top benefit of analytic applications.
The following charts lay out the demographics of the respondent pool.

**Figure 17: How many employees are in your organization?**

- 5,000 or more: 22%
- 1,000-4,999: 26%
- 500-999: 15%
- 100-499: 20%
- 1-99: 14%
- Decline to state: 3%

**Figure 18: Approximately what is your organization’s annual revenue?**

- Under $10 million: 18%
- $10 million to $50 million: 12%
- $50 million to $100 million: 7%
- $100 million to $500 million: 7%
- $500 million to $1 billion: 5%
- $1 billion to $5 billion: 11%
- Over $5 billion: 9%
- Decline to state: 31%
Figure 19: What is your organization’s primary industry?

- Manufacturing (includes defense, auto, chemical, durable goods, utilities) 11%
- Retailing (includes consumer packaged goods) 4%
- Government/Education/Non-profit/Military 37%
- Technology (includes computers, telecommunication) 21%
- Financial Services (includes banking, insurance, etc.) 10%
- Healthcare (includes biotechnology) 3%
- Other 14%

The wide range of job titles indicates the broad array of responsibilities that have involvement with business intelligence.

Figure 20: What is your primary job title?

- Senior Corporate Management (Owner, CEO, CFO, COO) 5%
- Senior IT Management (CIO, CTO, Vice President IS/IT) 5%
- Vice President of a business unit (other than a computer-related function): 3%
- Director/Manager of IS/IT or computer-related function 25%
- Director/Manager of a business unit (other than a computer-related function) 6%
- Business Analyst 8%
- Systems Analyst 10%
- Programmer 5%
- Database or Systems Administrator 8%
- Other* 25%

*The “other” category includes titles such as BI developer, BI manager, and resource specialists.

The wide range of job titles indicates the broad array of responsibilities that have involvement with business intelligence.