IOUG
independent oracle users group

*For the Complete Technology & Database Professional*

# A NEW DIMENSION TO DATA WAREHOUSING:

## 2011 IOUG DATA WAREHOUSING SURVEY

By Joseph McKendrick, Research Analyst
Produced by Unisphere Research, a Division of Information Today, Inc.
September 2011

Sponsored by ORACLE

Produced by UNISPHERE RESEARCH
Delivering Certainty
Thomas J. Wilson, President

## TABLE OF CONTENTS



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## EXECUTIVE SUMMARY

Data warehousing is undergoing the most radical transformation seen since it was first conceived in the 1970s, and brought to market in the late 1980s and 1990s.

One reason for this transformation is that data warehouses are on the front lines of the Big Data explosion. Not only do companies need to manage and store hundreds of terabytes to petabytes of data, they also need to find ways to extract the maximum value from this torrent of increasingly complex and diverse information—including unstructured or schema-less data—that is being generated at an escalating rate.

To be of value, this data needs to be available in real time not only to the traditional users of warehouses—analysts with Ph.Ds—but also to a widening set of employees throughout an organization, as well as for critical business applications. To meet these burgeoning needs for accessibility in fast-growing and increasingly complex data environments, new technologies and approaches are surfacing, from ready-to-run database machines and appliances that can be quickly integrated into data environments to cloud-based solutions that provide expertise and support on an incremental basis.

Findings from a new survey of Independent Oracle Users Group (IOUG) members indicate that while most companies have well-established data warehouse systems, adoption is still limited within their organizations. The survey, underwritten by Oracle Corporation and conducted by Unisphere Research, a division of Information Today, Inc., included input from 421 data managers and professionals. Many respondents report a significant surge of data within their data warehouses in recent times, fueled not only by growing volumes of transaction data, but unstructured data, as well.

Respondents to the survey have a variety of job roles and represent a wide range of company types, sizes, and industry verticals. The greatest number of respondents (34%) hold the title of database administrator, followed by that of director or manager. Close to one-third come from very large organizations with more than 10,000 employees. By industry sector, the majority of respondents come from software and tech companies, government agencies, educational institutions, financial services, healthcare, and utilities and telecommunications companies. (See Figures 31–33 at the end of this report.)

**Key Findings:**

The following summarizes the survey results, which explore issues and solutions around managing fast-growing data warehousing environments. Key highlights and findings from the survey include the following:

- Companies recognize the analytical power that a data warehouse foundation provides, but the technology is not as widely used across enterprises as it could be. Data warehouses serve as the foundation for business intelligence and analytics applications across 66% of the companies in the survey. However, in many cases, they remain isolated from mainstream business operations. Most are in-house, customized systems, mainly used by analysts and top decision makers. Only 33% of respondents' companies enable access to their marketing and sales departments—one of the most critical areas where data warehouse value is realized. As one respondent said, her organization "is not fully leveraging the capabilities of data warehousing. However, there is a high expectation, and integration insights gained are wonderful. We're looking forward to including more business intelligence analytical tools." Another respondent echoed this view, stating, "The company currently is still learning how to leverage the data warehouse and there have been some real nice visible wins for the business and IT from the data warehouse. However, I still consider it to be underutilized."
- Data warehouse managers are struggling with the rise of increasingly complex and diverse information, including unstructured or schema-less data, being generated at an escalating rate. Close to 90% of respondents say the volume of data in their warehouses has increased over the past year, and they expect this data growth to continue. Close to 50%, however, are not certain if their data warehouses will be able to scale to meet future Big Data requirements.
- While companies are conservative in their plans for data warehouse upgrades, there is considerable movement toward implementation of ready-to-run solutions. Respondents expect to see numerous benefits from upcoming implementation efforts, including better performance and greater insights for decision makers. While data warehouse systems tend to run separately from production environments, close to 40% of respondents expect to see more convergence, as data warehouses become more closely embedded with the rest of their infrastructure.
- Thirty-three percent of respondents report that they made significant data warehouse investments in 2010–2011, but are uncertain about investments in 2012. IT and data managers are charged with day-to-day oversight of data warehouses, but business leaders weigh in on the final decisions about new purchases.

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## THE REACH OF DATA WAREHOUSING

**Companies recognize the analytical power that a data warehouse foundation provides, but the technology is not as widely used across enterprises as it could be. Data warehouses serve as the foundation for business intelligence and analytics applications across 66% of the companies in the survey, however, in many cases, they remain isolated from mainstream business operations. Most are in-house, customized systems, mainly used by analysts and top decision makers. Only 33% of respondents' companies enable access to their marketing and sales departments—one of the most critical areas where data warehouse value is realized.**

When it comes to deploying effective business intelligence and analytics solutions, no other underlying platform is more critical than a data warehouse. BI and analytics are seen as the differentiator to achieve business growth in today's emerging hyper-competitive economy—the ability to deliver insights to decision makers and applications at all levels quickly based on up-to-the minute, well-rounded data can help foster innovation and identify new opportunities.

In fact, 66% of respondents to the IOUG survey say they rely on data streaming in from data warehouses—more so than from transactional or other systems—as part of their business intelligence and analytics strategies. (See Figure 1.) Many of these platforms—particularly custom-built data warehouses—are key data sources for analytics at large organizations with more than 5,000 employees. (See Figure 2.) Within these companies, the most common workloads are reporting and ad hoc queries, cited by three-fourths of respondents. (See Figure 3.)

For the most part, respondents say they rely on data warehouse platforms that are configured or built in-house. Just over 25% have also adopted appliances to handle their data warehouse requirements. As shown later in this survey report, adoption of data warehouse appliances will accelerate. Twenty-five percent of respondents also say they have employed federated data warehouses spread across multiple data environments—in which data resides closer to its original sources and is presented virtually to end users or applications. (See Figure 4.)

By company size, large, in-house data warehouse platforms are most commonly seen at medium- to large-size organizations. Thirty percent of larger companies also support data warehouse appliances, compared to 24% of the smallest firms in the survey. Cloud adoption is strongest at the smallest firms—20% of companies with 500 or fewer employees are using data warehouse capabilities from the cloud, versus 11% of the largest organizations in the survey. (See Figure 5.)

While there has been no shortage of predictions and discussion around the "democratization" of data warehouse access, it still tends to be concentrated in the hands of a few end users. For a majority of respondents, the main users of data warehouses are either business analysts, or top-level decision makers.

A majority of respondents say that their data warehouses are not only sprinkled across their enterprises, but spread externally as well, serving a number of department units and external customers or partners (68%). (See Figure 6.) However, notably, only 32% of respondents' organizations provide this access to marketing or sales departments, often considered the killer application for data warehouse deployments. (See Figure 7.)

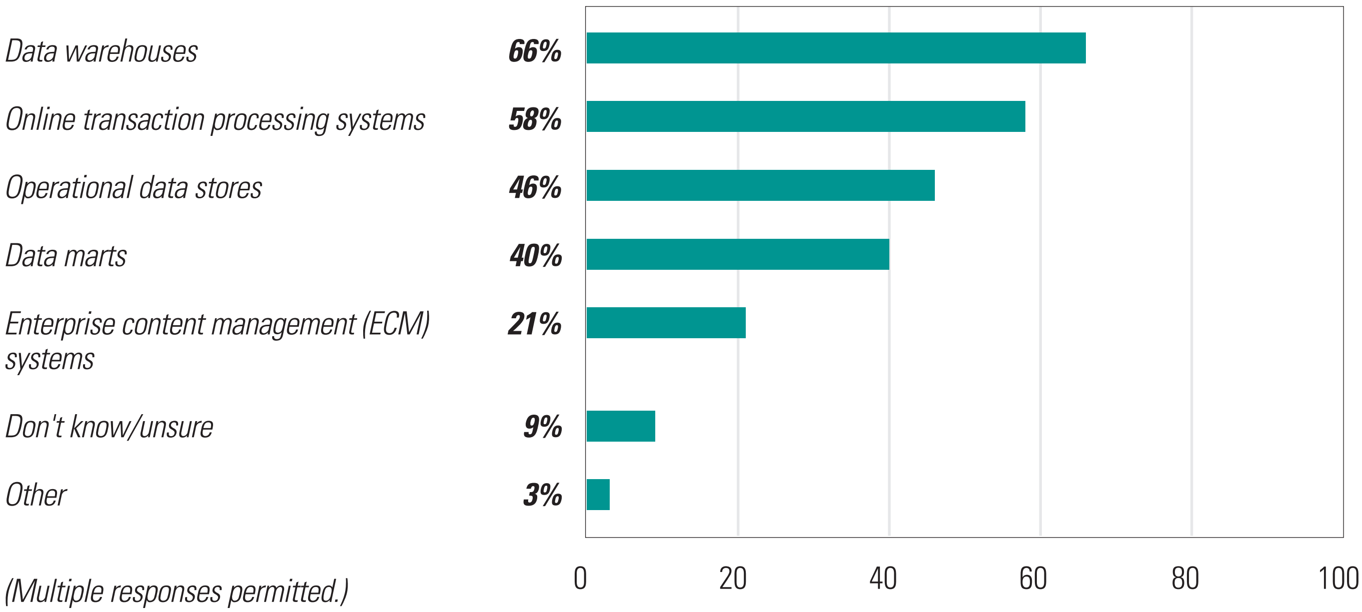
It's not that data warehouses are too small or underutilized to reach such critical areas of the enterprise. In fact, at least 25% of the sites in this survey are large-scale data warehouse deployments, supporting more than 1,000 users. Another 30% of respondents say their data warehouses support users in the hundreds. (See Figure 8.) User bases vary by company size. While a majority (58%) of large organizations support more than 500 users, most small firms report less than 100 users. (See Figure 9.)

*A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey* *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 1: Applications Supplying Data to Business Intelligence/ Analytics Systems




*(Multiple responses permitted.)*

## Figure 2: Types of Systems Supplying BI/Analytics Data— By Company Size (Based on Total Number of Employees)

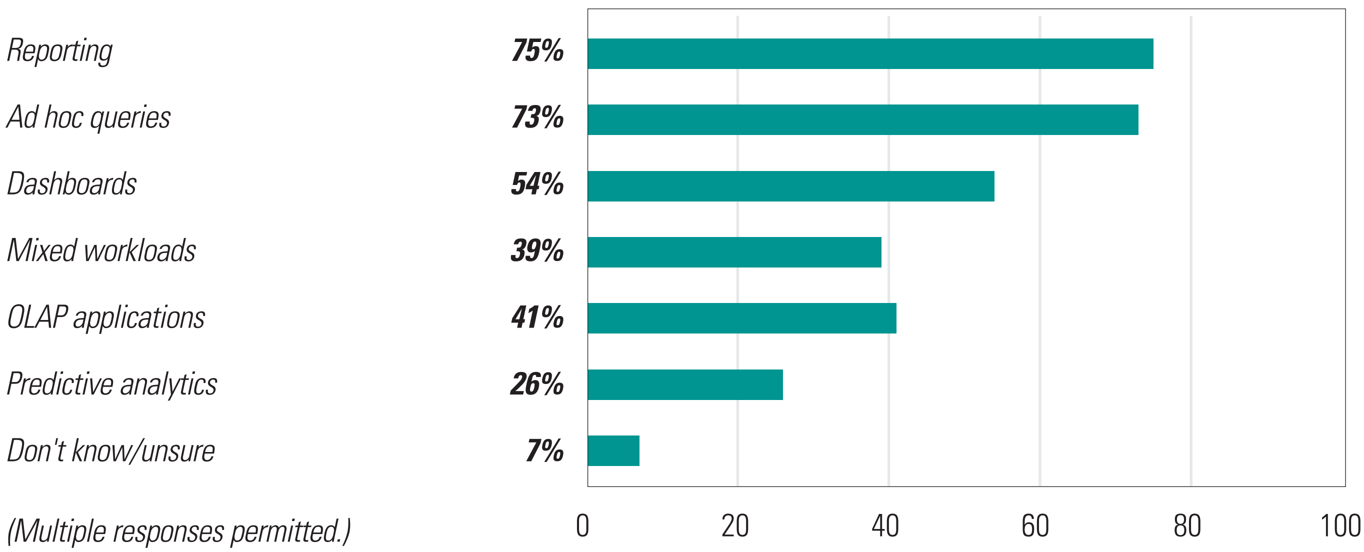
| *(Multiple responses permitted.)* | 1 to 500 | 501 to 5,000 | 5,000+ |
|---|---|---|---|
| Data warehouses | 54% | 63% | 76% |
| Online transaction processing systems | 48% | 60% | 63% |
| Operational data stores | 39% | 44% | 51% |
| Data marts | 33% | 44% | 38% |
| Enterprise content management systems | 16% | 18% | 25% |
| Don't know/unsure | 15% | 5% | 8% |
| Other | 3% | 4% | 2% |

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

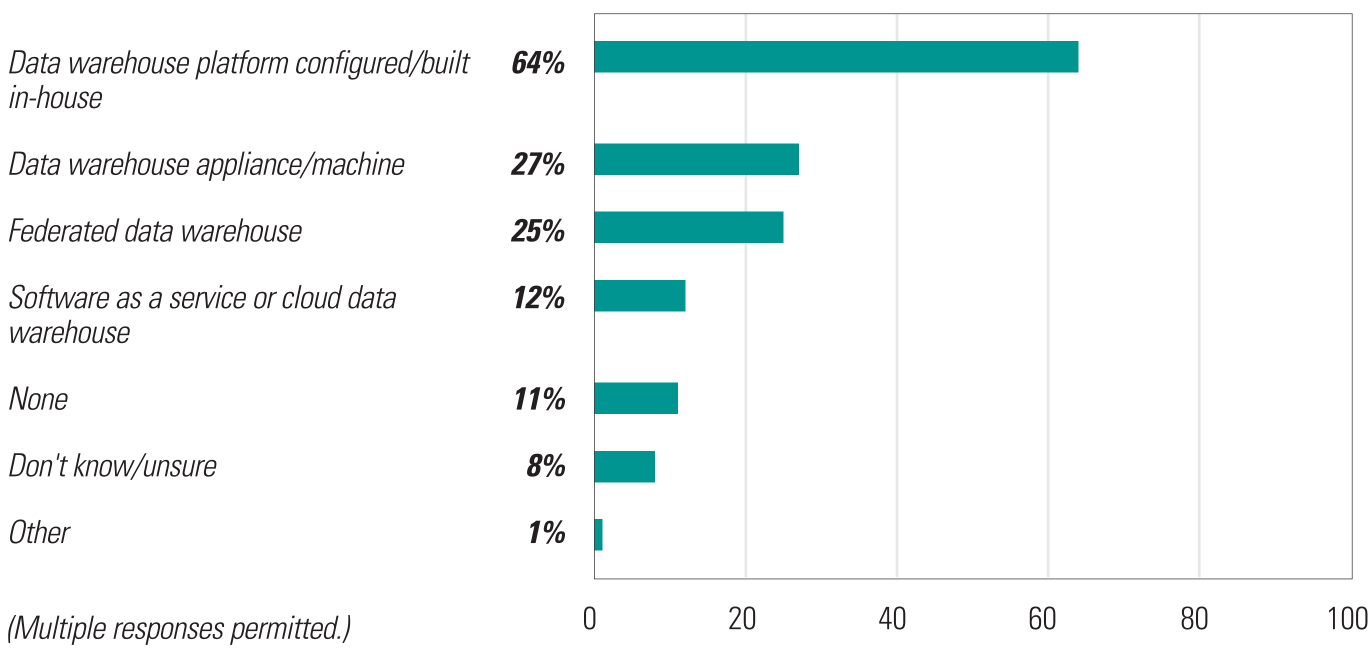


*Data collection and analysis performed with SurveyMethods.*

## Figure 3: Data Warehouse Workloads




## Figure 4: Types of Data Warehouse Platforms Supported




***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

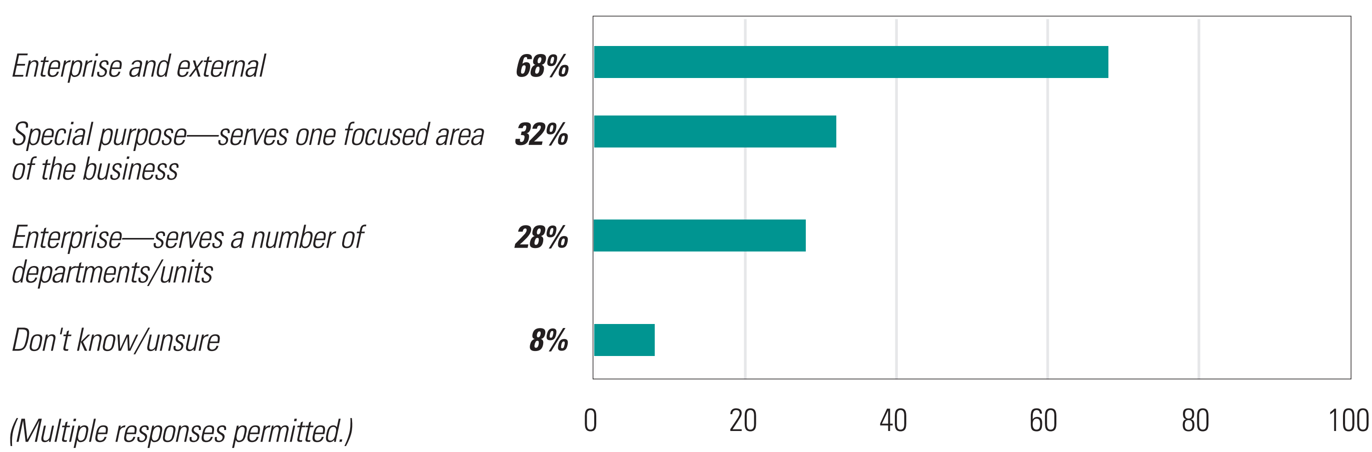
*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 5: Types of Data Warehouse Platforms Supported—By Company Size (Based on Total Number of Employees)

| (Multiple responses permitted.) | 1 to 500 | 501 to 5,000 | 5,000+ |
|---|---|---|---|
| Data warehouse platform built in-house | 50% | 68% | 71% |
| Data warehouse appliance/machine | 24% | 27% | 30% |
| Federated data warehouse | 22% | 17% | 35% |
| SaaS or cloud data warehouse | 20% | 7% | 11% |
| None | 12% | 17% | 5% |
| Don't know/unsure | 12% | 5% | 9% |
| Other | 1% | 2% | 1% |

## Figure 6: Reach of Data Warehouse Platforms



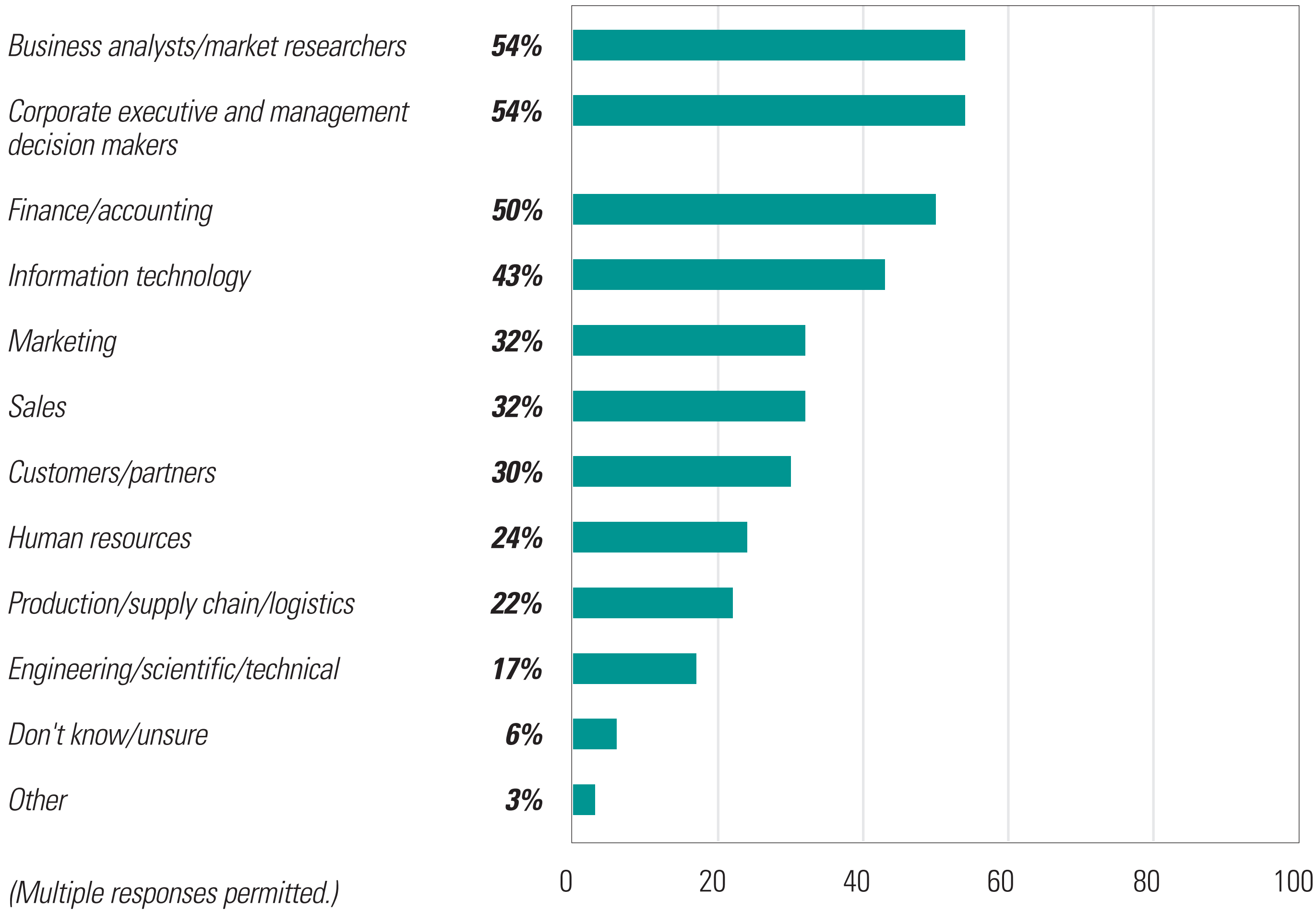

(Multiple responses permitted.)

*A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey* was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of Database Trends and Applications magazine and the 5 Minute Briefing newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.

Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.

Data collection and analysis performed with SurveyMethods.

## Figure 7: Primary Data Warehouse Users



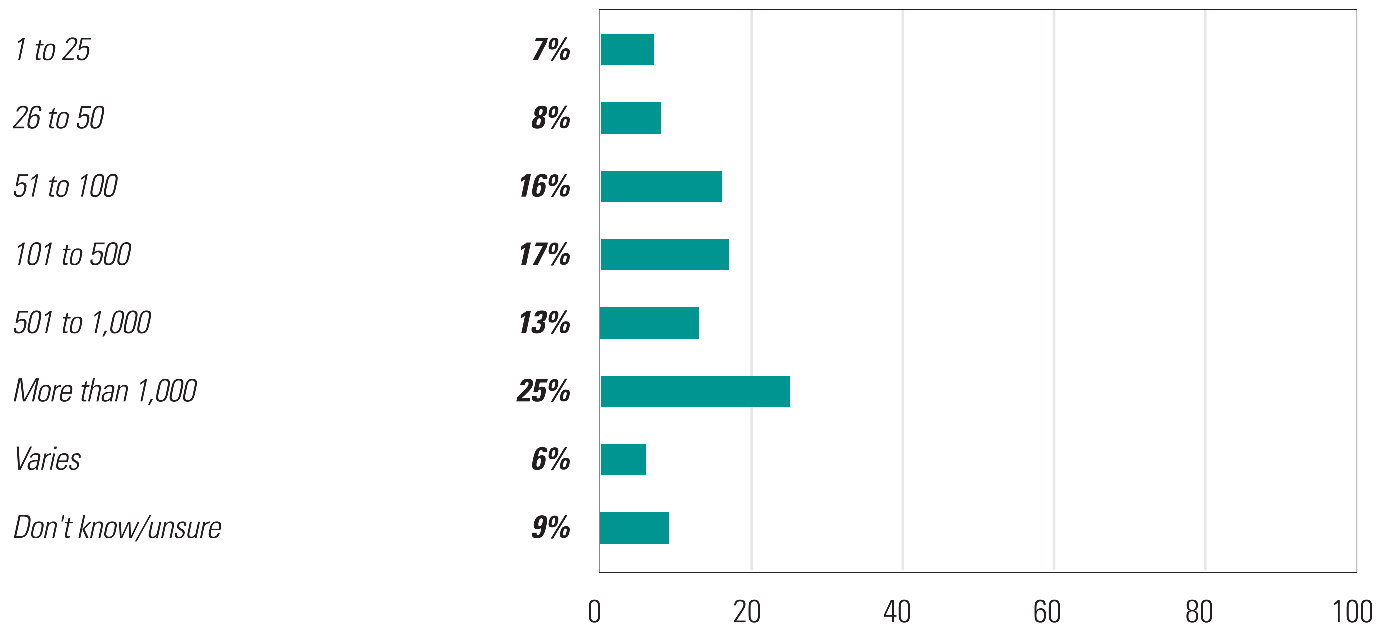

*(Multiple responses permitted.)*

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 8: Number of Data Warehouse Users Supported




## Figure 9: Number of Data Warehouse Users—By Company Size (Based on Total Number of Employees)

| | 1 to 500 | 501 to 5,000 | 5,000+ |
|---|---|---|---|
| *1 to 100* | **57%** | **34%** | **11%** |
| *101 to 500* | **12%** | **24%** | **14%** |
| *More than 500* | **17%** | **30%** | **58%** |
| *Varies* | **10%** | **2%** | **6%** |
| *Don't know/unsure* | **4%** | **9%** | **11%** |

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## DATA WAREHOUSE GROWTH TRENDS

**Data warehouse managers are struggling with the rise of increasingly complex and diverse information, including unstructured or schema-less data, being generated at an escalating rate. Close to 90% of respondents say the volume of data in their warehouses has increased over the past year, and a similar number expect this data growth to continue. Close to 50%, however, are not certain if their data warehouses will be able to scale to meet future Big Data requirements.**

For the most part, today's data warehouses are relatively modest in size, storing 10 terabytes (TB) or less. A small handful of respondents, 4%, say they have data warehouses with more than a petabyte of data. (See Figure 10.) However, things are changing fast. Eighty-two percent of respondents report that the amount of data within their warehouses has increased over the past year. Among 13%, this increase has been substantial, reporting the volume of data within their data warehouses has increased by more than 50% in the last 12 months. (See Figure 11.)

Larger organizations are far more likely to have hundreds of terabytes to petabytes of data in their data warehouses. Twenty-two percent of organizations with more than 5,000 employees report data warehouses of this scale, versus only 5% of smaller companies. (See Figure 12.)

A separate IOUG survey conducted recently found that beyond data warehouses, overall, data is nearing or above petabyte levels across many enterprises (including data both within and outside of data warehouses). Twenty-seven percent reported environments exceeding 100TB, and 9% had more than 1PB (1,024TB) of online (disk-resident) data.

A number of companies are still only learning about the advantages of data warehousing and business intelligence. As one respondent puts it: "We're currently still learning how to leverage the data warehouse and there have been some real nice visible wins for the business and IT from the data warehouse. However, I still consider it to be underutilized." Another respondent says, "BI and DW are relatively new concepts to the company; we need to grow into an enterprise-wide data warehouse, with insight into all facets of data."

The impact of Big Data will increasingly be felt in the data warehouse space. Looking at the year ahead, most respondents anticipate data growth within their data warehouses in the range of 1% to 25%. (See Figure 13.) As the Big Data challenge becomes a reality, many respondents see problems down the road for their current systems. In fact, only about 55% of the respondents could say for sure that they are confident their current data warehouse environments will be able to scale to properly analyze Big Data in the future. (See Figure 14.)

Respondents recognize that they sit on potentially vast information resources, and that they need to think about new approaches to effectively tap into these valuable data stores. "We feel that we have only begun to scratch the surface with what we can do," says one respondent, who adds that her company is "a little overwhelmed by the volume of the data and making it all available to and immediately usable by the very different kinds of users who need it for very different purposes." The respondent notes, however, that as the company's efforts have progressed, "we have been amazed that we can do a lot more using the right software and our own ingenuity."

While relational database management systems still reign supreme as the underlying technology for data warehouse deployments, it's interesting to note the rise of cloud solutions in this space, as well. Close to one-third of respondents state they expect to be working with cloud-based approaches within the next 5 years. In-memory databases also are seen as a working approach to faster-performing data warehouses, with 19% anticipating using such platforms. (See Figure 15.)

For the most part, data warehouses serve as repositories for transactional data. However, a sizable segment of respondents, 42%, state that their data warehouses are also employed as document repositories. Another 36% store data pertaining to information and operational technology, and a similar number store text files. (See Figure 16.)

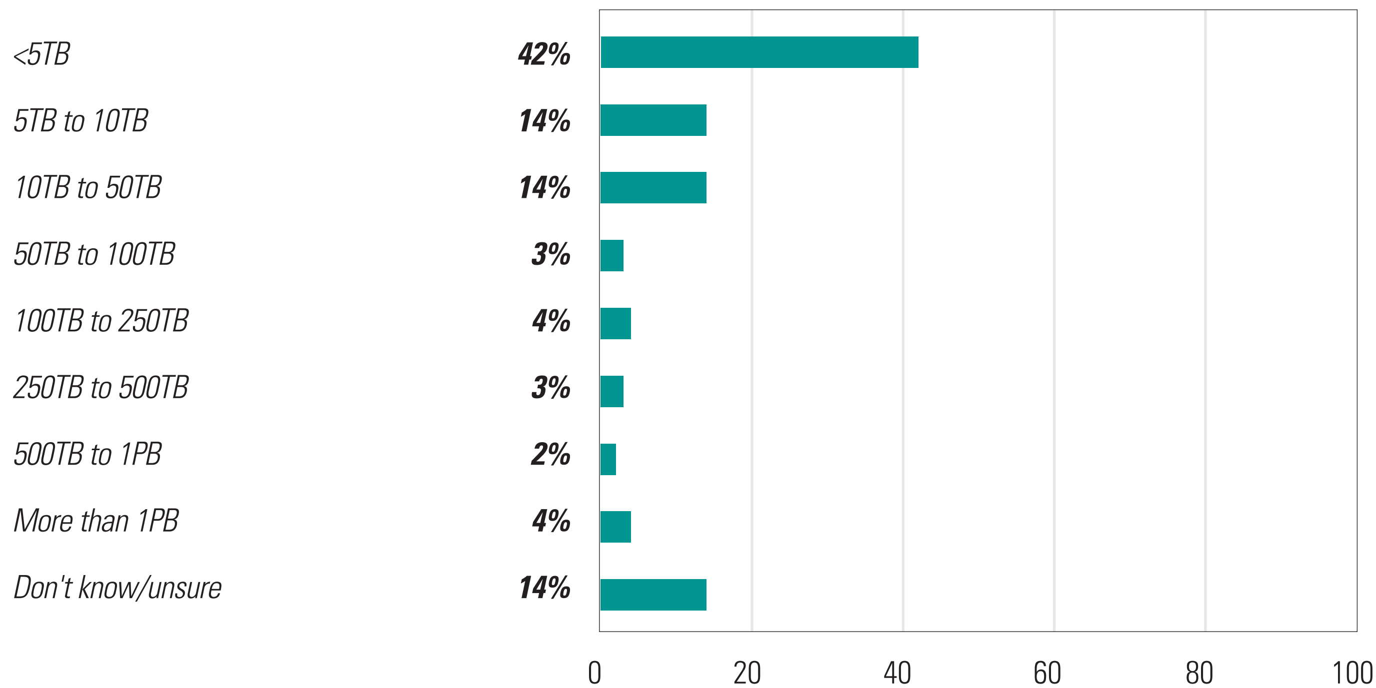
Part of the growth of data within many organizations is unstructured data—including documents, emails, social media messages, graphics and video files. About half of respondents intend to increase their analysis of unstructured or schema-less data by a "moderate" to "significant" amount in the next 5 years. (See Figure 17.)

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 10: Total Amount of Data Warehouse Data

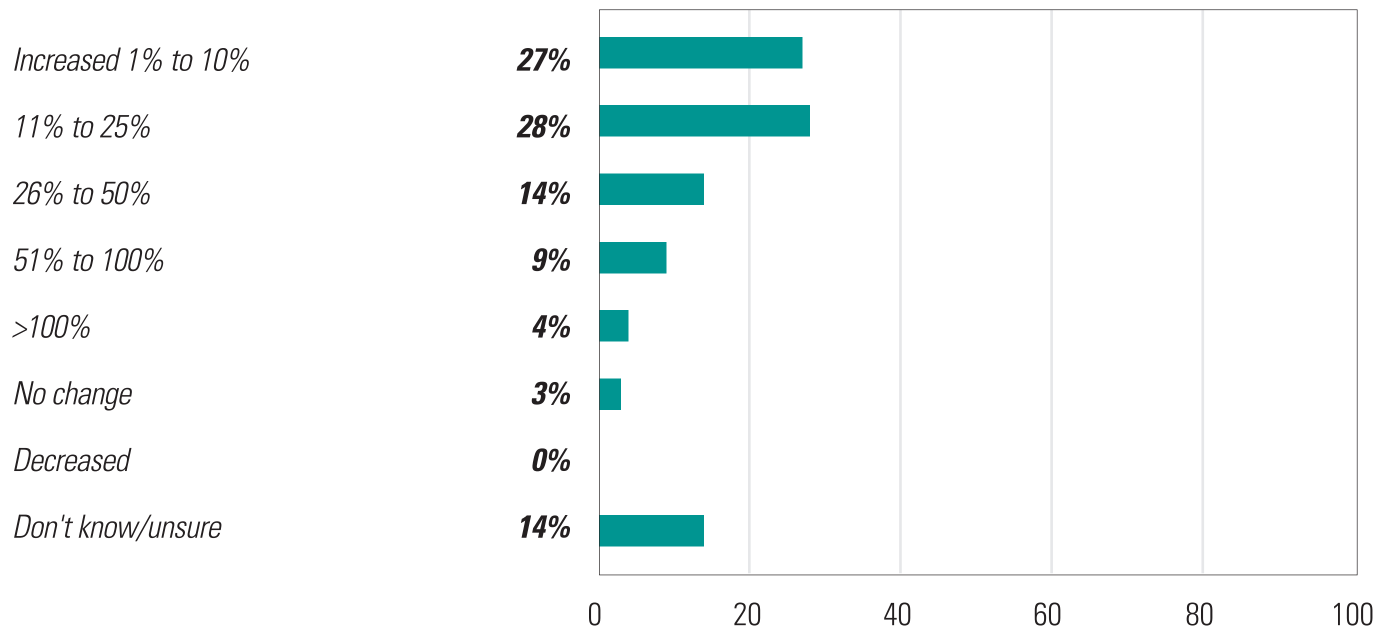



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 11: Change in Data Levels in Data Warehouses Over Past Year




## Figure 12: Total Amount of Data Warehouse Data—By Company Size (Based on Total Number of Employees)

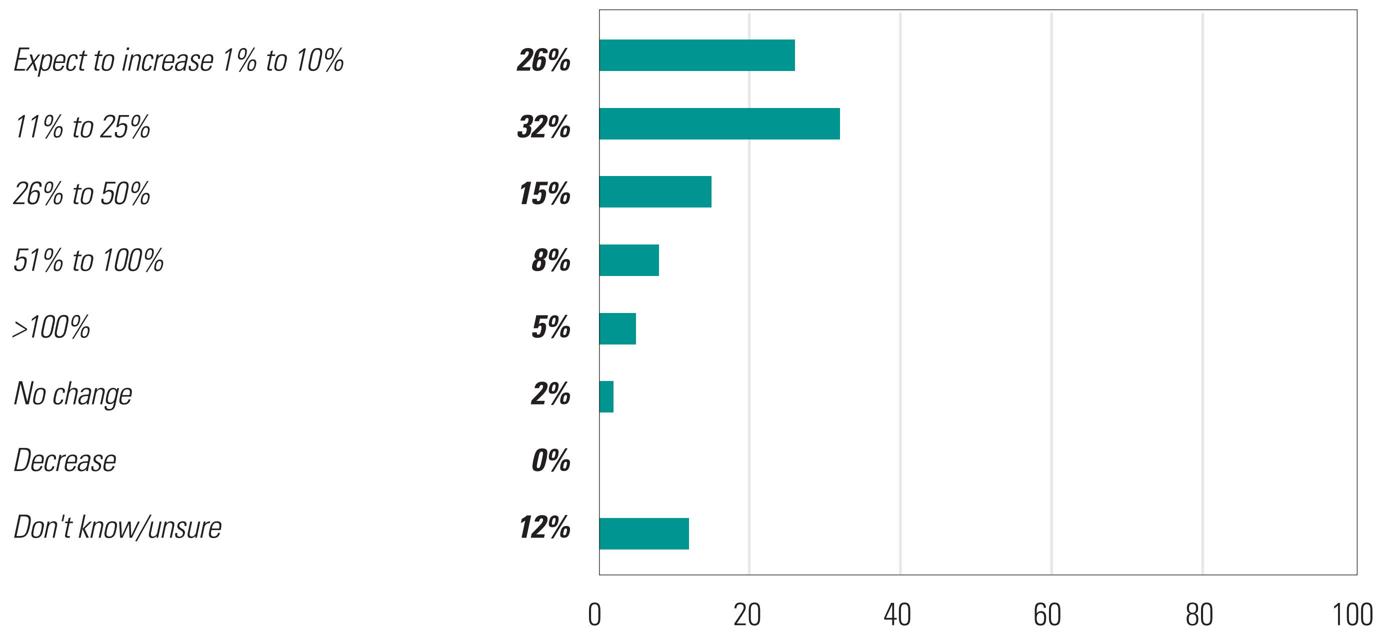
| | 1 to 500 | 501 to 5,000 | 5,000+ |
|---|---|---|---|
| <10TB | **69%** | **57%** | **46%** |
| 10TB to 100TB | **14%** | **17%** | **17%** |
| 100TB to 1PB | **3%** | **7%** | **15%** |
| More than 1PB | **2%** | **3%** | **7%** |
| Don't know/unsure | **11%** | **15%** | **13%** |

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

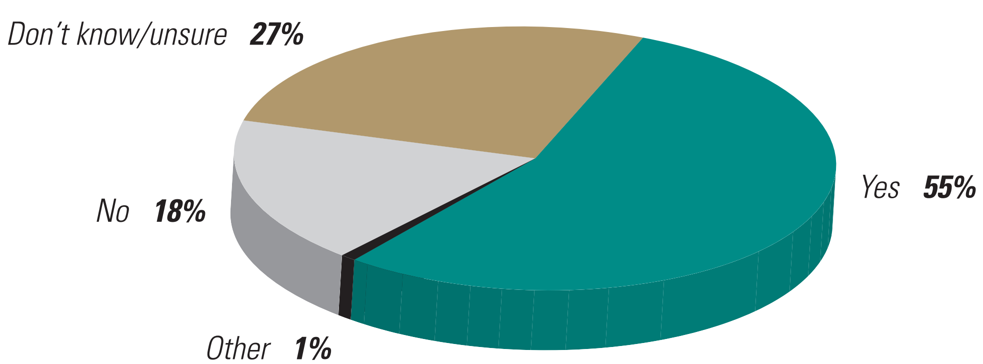
*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 13: Change in Data Warehouse Data Levels Over Year Ahead




## Figure 14: Current Environment Scalable to Big Data in the Future?



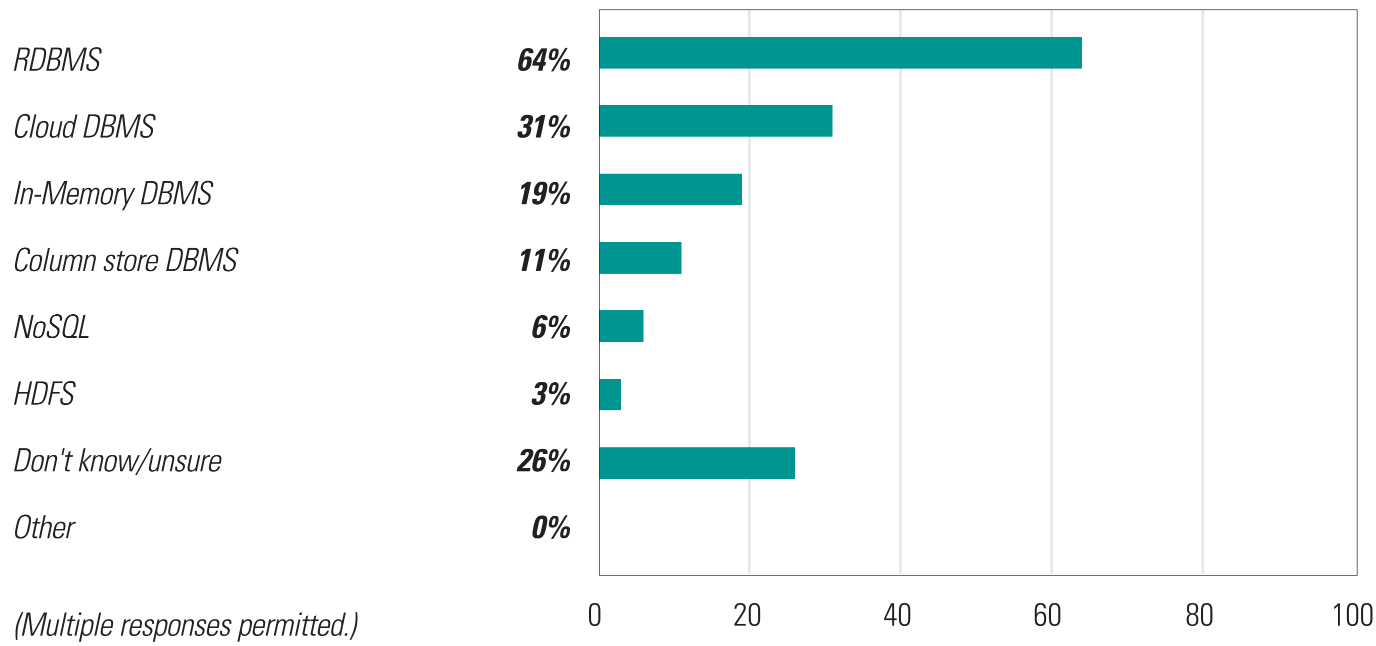

(Total does not equal 100% due to rounding.)

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 15: Data Warehousing Technology Plans Over Next 5 Years



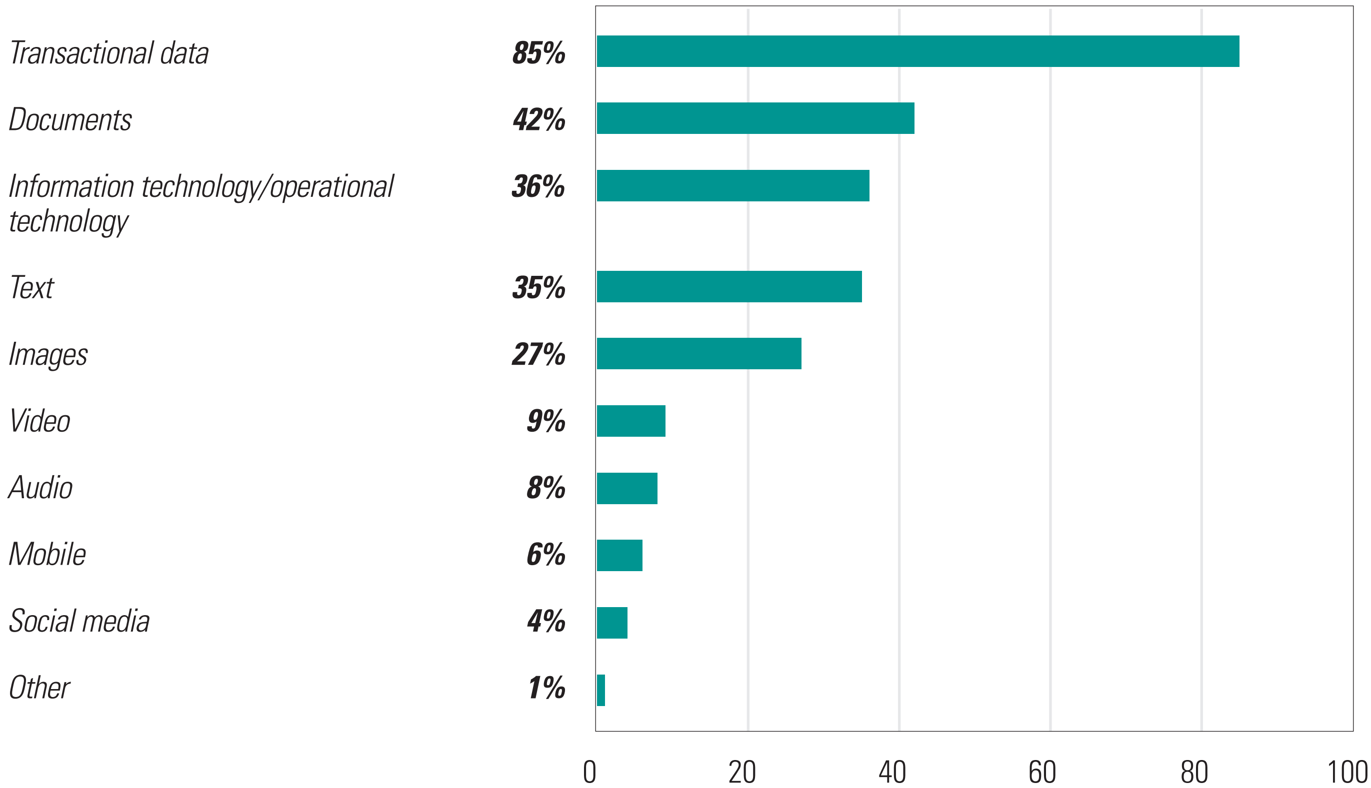

*(Multiple responses permitted.)*

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

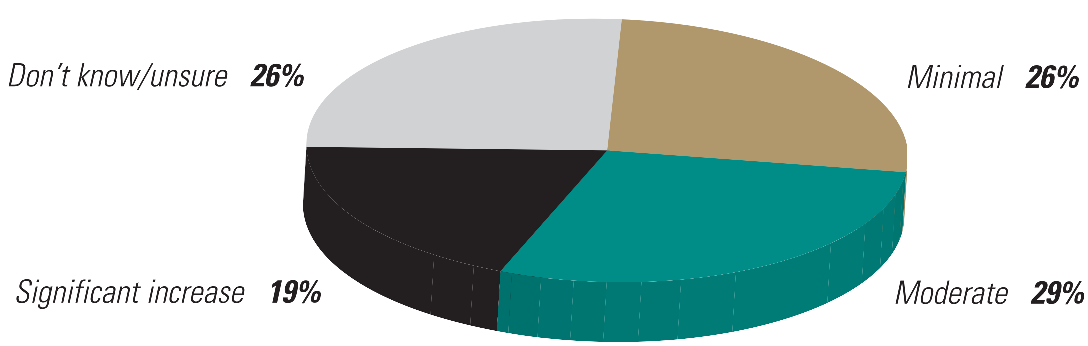
*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 16: Data Types in Data Warehouses




## Figure 17: Increase in Unstructured/Schema-less Data Analysis in Next 5 Years




***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## NEW DATA WAREHOUSE DIRECTIONS

**While companies are conservative in their plans for data warehouse upgrades, there is considerable movement toward implementation of ready-to-run solutions. Respondents expect to see numerous benefits from upcoming implementation efforts, including better performance and greater insights for decision makers. While data warehouse systems tend to run separately from production environments, close to 40% of respondents expect to see more convergence, as data warehouses become more closely embedded with the rest of their infrastructure.**

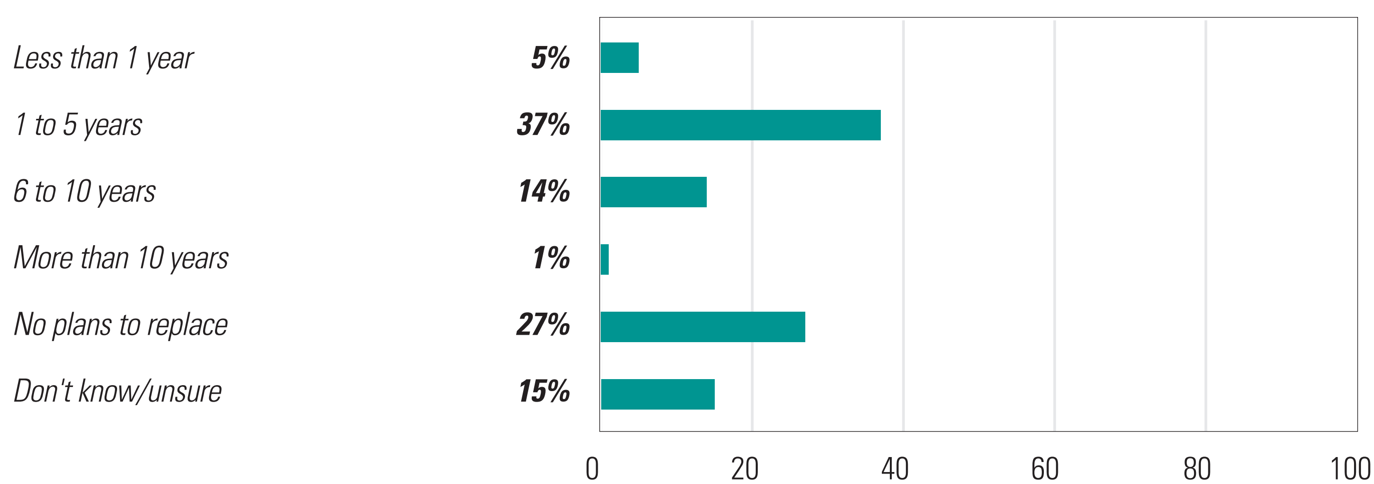
The market for traditional data warehouse acquisition or replacement is in flux, with respondents' plans either static on one end to rapidly shifting at the other. Forty-two percent either have no plans to replace their current system, or don't know what their plans are in the next 5 years. (See Figure 18.) However, another 42% of respondents are looking to replace their current data warehousing platform within the next five years to address the growing need to compete on analytics and manage larger and larger data stores.

Respondents are also divided between three key strategies moving forward with regard to traditional data warehouse platforms: deploying database machines or appliances, implementing software as a service, or using cloud data warehouse offerings. Data warehouse appliances and other self-contained systems rank right up with traditional enterprise data warehouses as systems of choice going forward, the survey finds. Thirty-seven percent indicate they will be deploying appliances—up from 27% that currently have appliances, reported earlier in this report. Another 30% of respondents are looking to cloud-based approaches to their data warehousing needs. (See Figure 19.)

Respondents expect a range of business and technical benefits resulting from their data warehouse implementations. From a business perspective, close to half expect improved internal operations, lower costs, greater insights for decision makers, and a better ability to meet reporting or compliance mandates. Technically, 66% of respondents anticipate better performance, and a majority expect enhanced scalability. (See Figures 20 and 21.)

In an age of efficiency and cost cutting, many organizations are looking at ways to consolidate their data center operations. One way to do this is to consolidate online transaction processing (OLTP) and analysis (OLAP) applications onto a single platform. In fact, many respondents are already doing this, with 40% of respondents claiming that some, if not all, instances of OLTP and OLAP can be found on the same server. (See Figure 22.) In addition, 37% will consider consolidating OLTP and OLAP applications on the same server in the future. (See Figure 23.)

## Figure 18: Timeline for Data Warehousing Platform Replacement

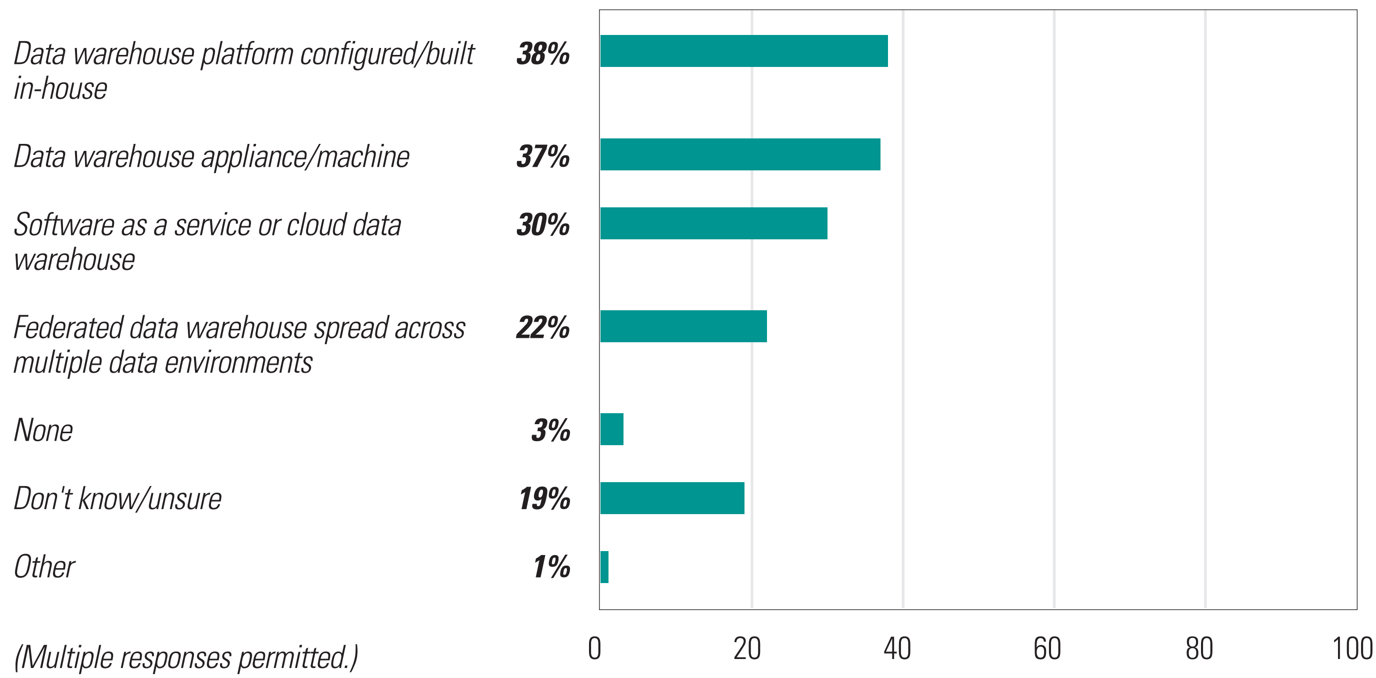



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 19: Preferred Data Warehouse Platform Going Forward

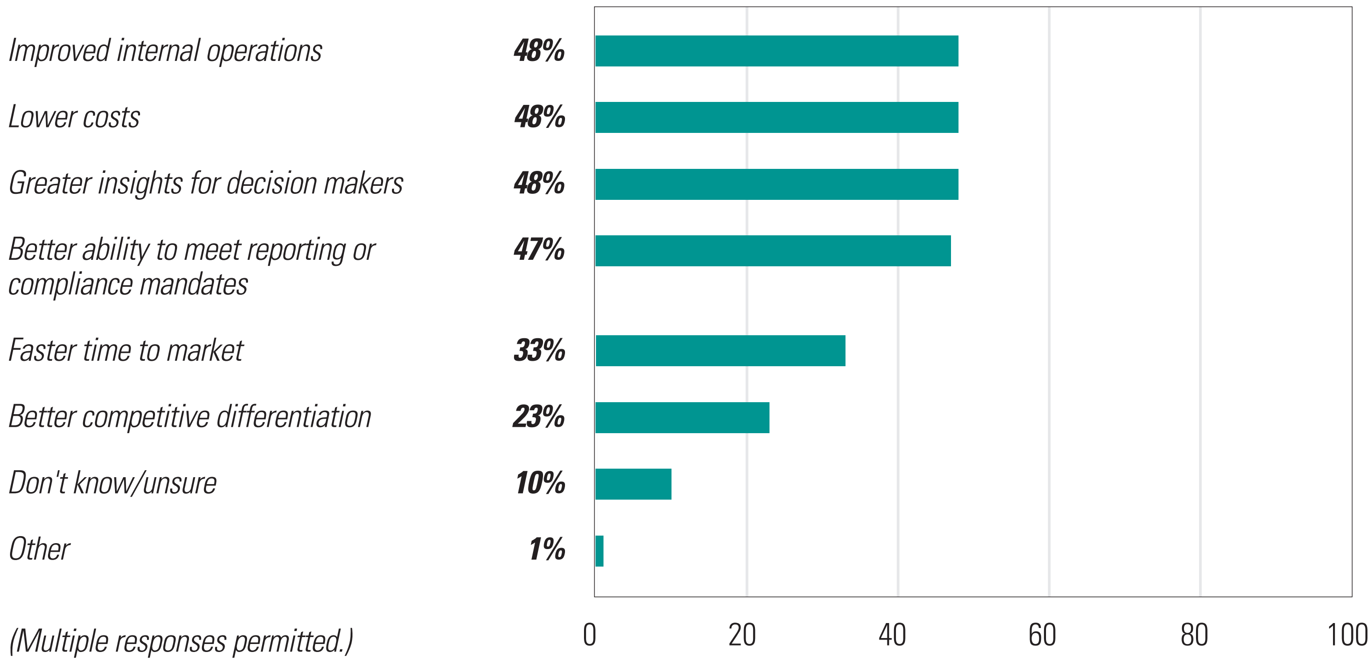



*A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 20: Expected Business Benefits from Data Warehouse Upgrade



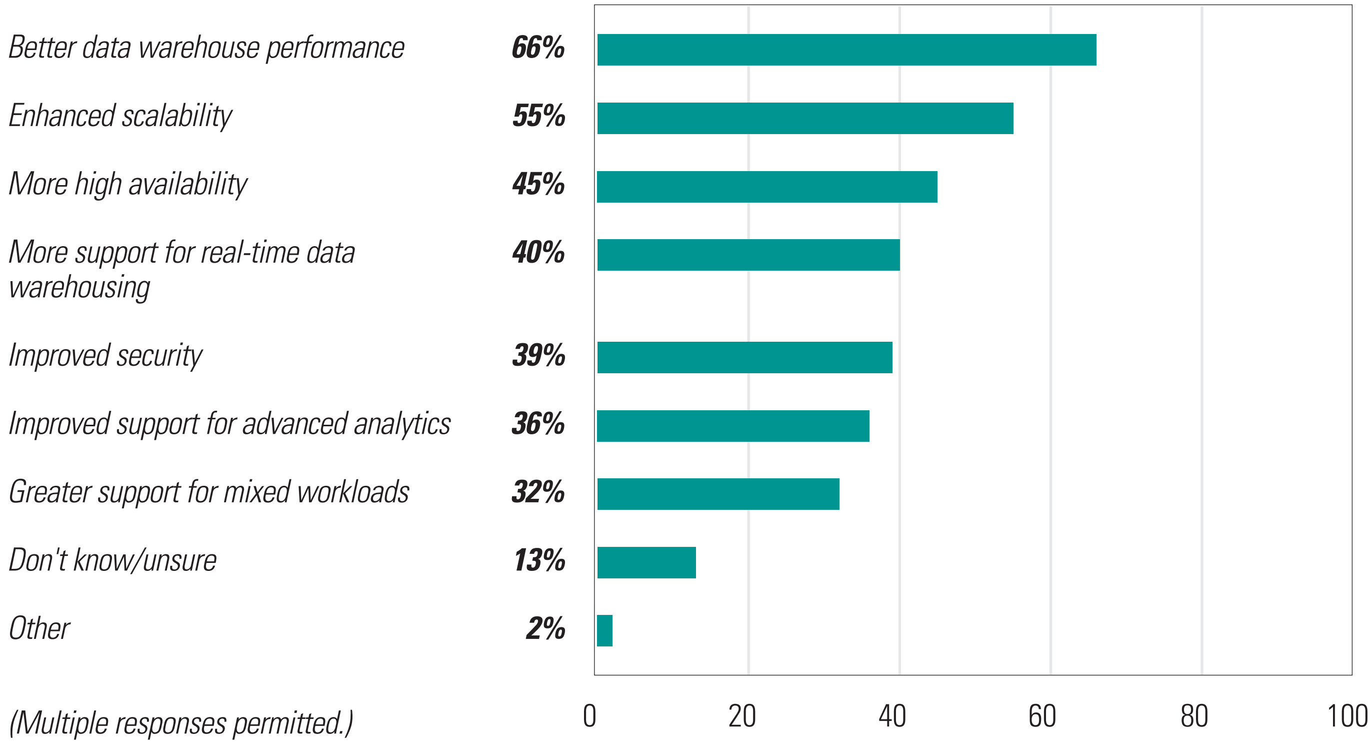

*(Multiple responses permitted.)*

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

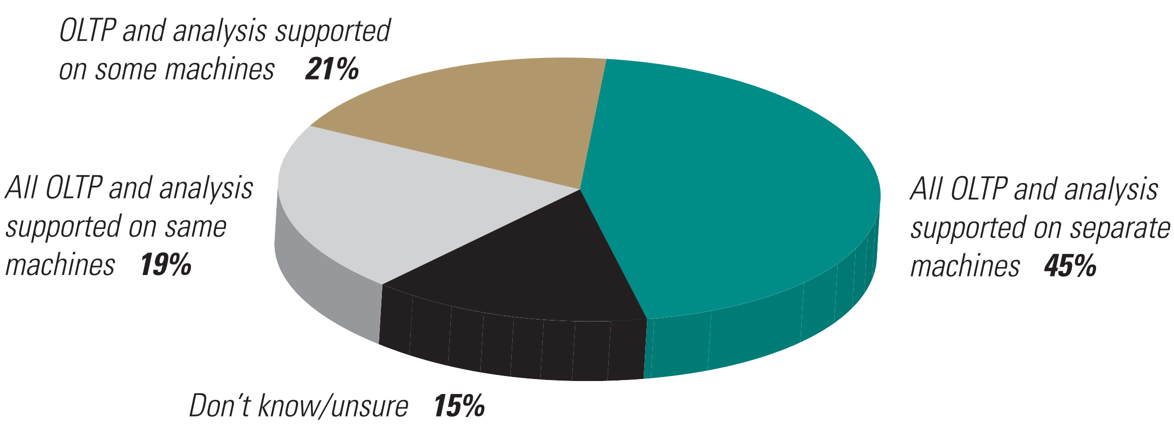
*Data collection and analysis performed with SurveyMethods.*

## Figure 21: Expected Technical Benefits from Data Warehouse Upgrade




(Multiple responses permitted.)

## Figure 22: Online Transaction Processing (OLTP) and Online Analysis Processing (OLAP) Server Deployments

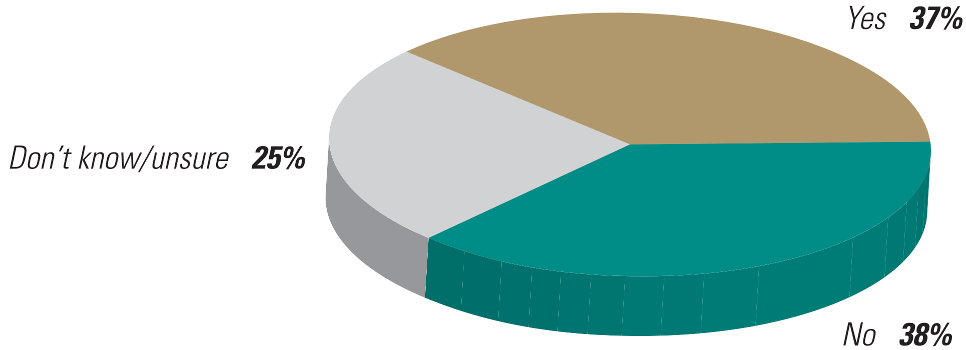



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 23: Consider Consolidating OLTP and OLAP on Same Server?




***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## MANAGEMENT ISSUES

**Thirty-three percent of respondents report that they made significant data warehouse investments in 2010–2011, but are uncertain about investments in 2012. IT and data managers are charged with day-to-day oversight of data warehouses, but business leaders make final decisions about new purchases.**

The past year has seen a spike in data warehouse budgets—but will the trend continue? Sixty-two percent of respondents report that their budgets have grown, in many cases, significantly. Thirty percent, in fact, report budgets increases exceeding 25%. (See Figure 24.) However, as of mid 2011—the time when this survey was conducted—plans for data warehouse budgets in the future were uncertain. Only 36% plan budget increases, and only a handful (3%) indicate that growth will exceed 25% over this year. (See Figure 25.)

To a large degree, database administrators are charged with managing data warehouse platforms on a day-to-day basis in most companies. Systems administrators play such a role in half the organizations surveyed. (See Figure 26.)

IT executives—including CIOs, CTOs and vice presidents—are considered the key influencers of data warehouse investments, cited by more than two-thirds of respondents. Close to half also cite database technical staff—including database and systems administrators—as having a key influencer role. (See Figure 27.)

However, when it comes to final purchasing authority, business leaders take on a more prominent role. While the final decision still is in the hands of IT executives (cited by 62%), 50% also say business management have a say in the final decisions. DBAs have such authority in only 19% of companies. (See Figure 28.)

By their very nature, data warehouse environments also tend to consume large parts of IT budgets. For a large number of respondents (31%), between 6% and 25% of their capital and operational IT budgets are spent on data warehousing. (See Figure 29.)

Delegating authority over data warehousing purchasing across business lines is not without its risks. As one respondent explained, in his company, directors tend to “have different ideas on how to achieve and measure success. IT should, but doesn’t, control the technology being selected by each group and getting them to work together is not easy if at all possible.”

What do respondents see as the leading challenges with their current data warehouses? Close to half, 45%, cite concerns with performance, and a similar number worry about maintenance and administrative costs. Data integration issues also rank relatively high on the list, and close to a third are concerned about acquiring and holding onto the skills needed to run their data warehouses. (See Figure 30.)

Changes in the business at large present the greatest challenges, as one respondent points out. “Our company has been involved with several mergers this year so the biggest challenge is integrating diverse environments to allow for across company reporting.”

Still, within many sectors, costs are very much top of the list. “From where I am sitting, the issues are mainly to do with the lack of budget, since we are a government organization,” says another respondent. “As a result, there’s a lack of training and lack of decision makers' knowledge of how beneficial data warehouses are.”

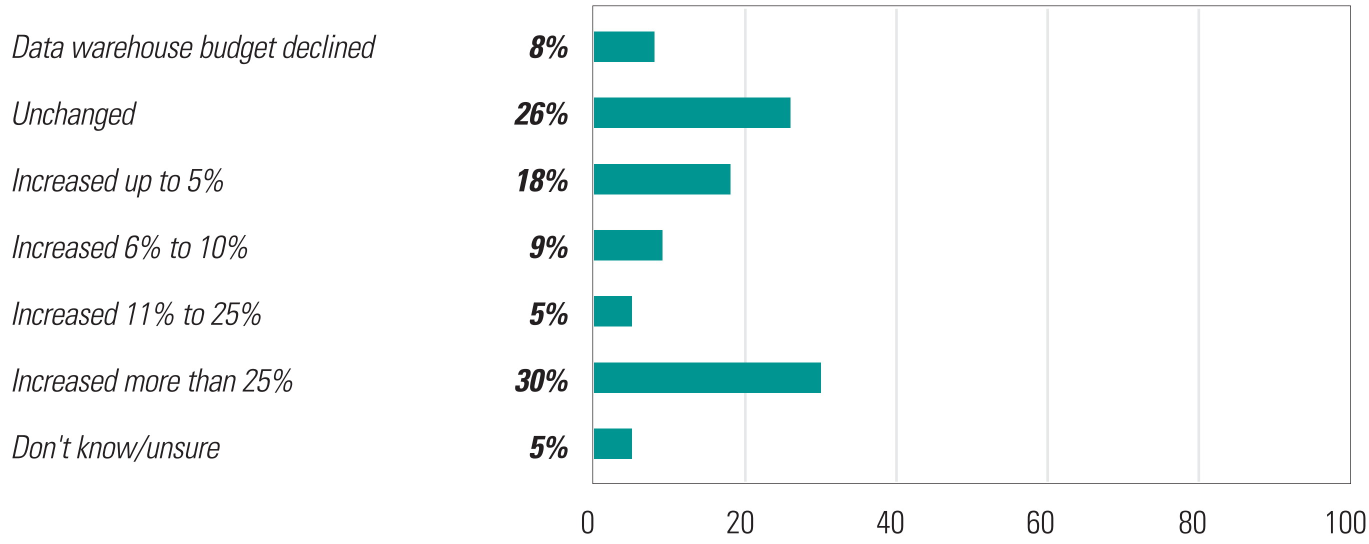
Another respondent laments that his company’s data warehouse resources are severely underutilized. This is “not because of any technology or platform limitations, but more because of people resource limitations,” he says. “We have a very small team doing BI and data warehousing, with a very high demand for their services.”

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

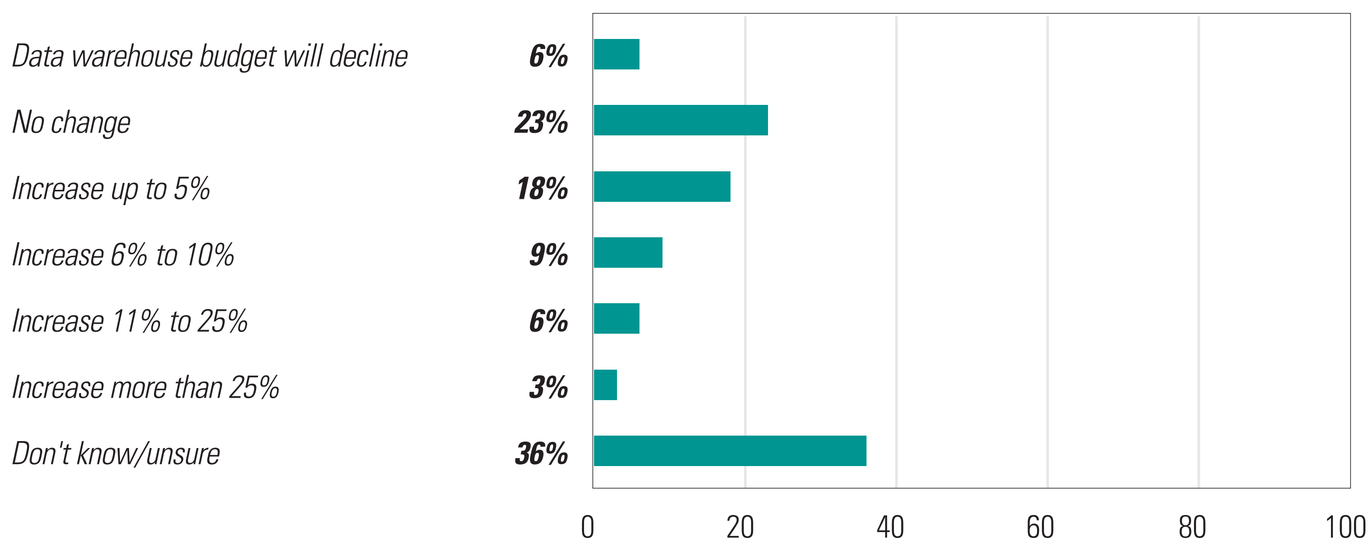
*Join the IOUG—If you’re not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 24: Changes in Data Warehouse Budgets Over Past Year




## Figure 25: Changes in Data Warehouse Budget Over Coming Year

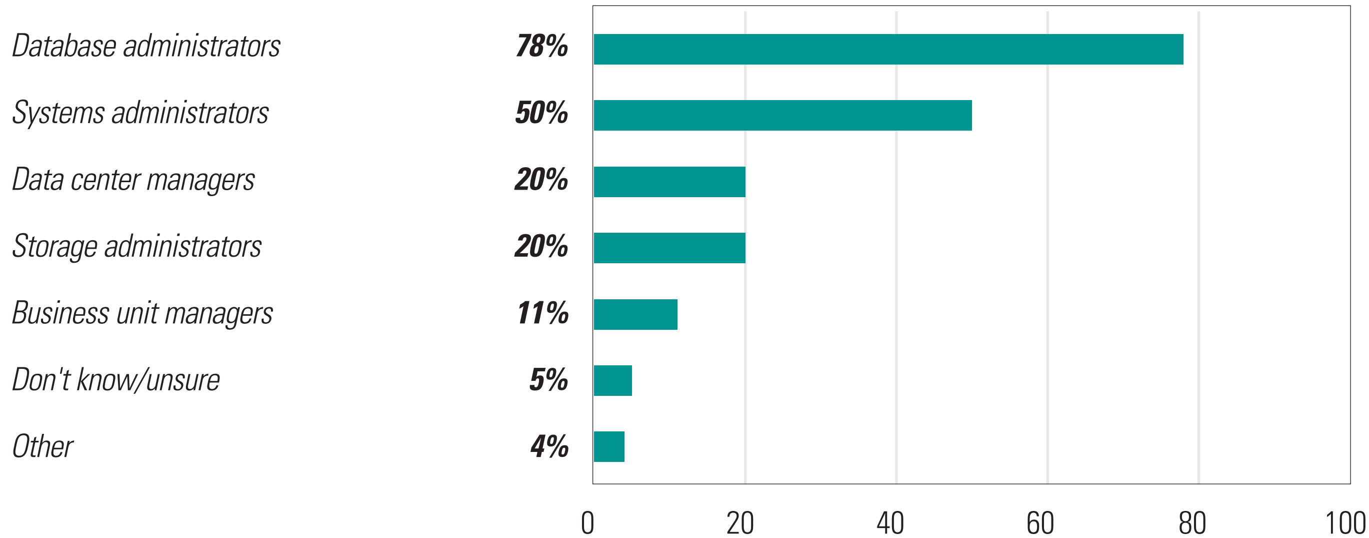



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 26: Managers of Data Warehouse Platforms on a Day-to-Day Basis

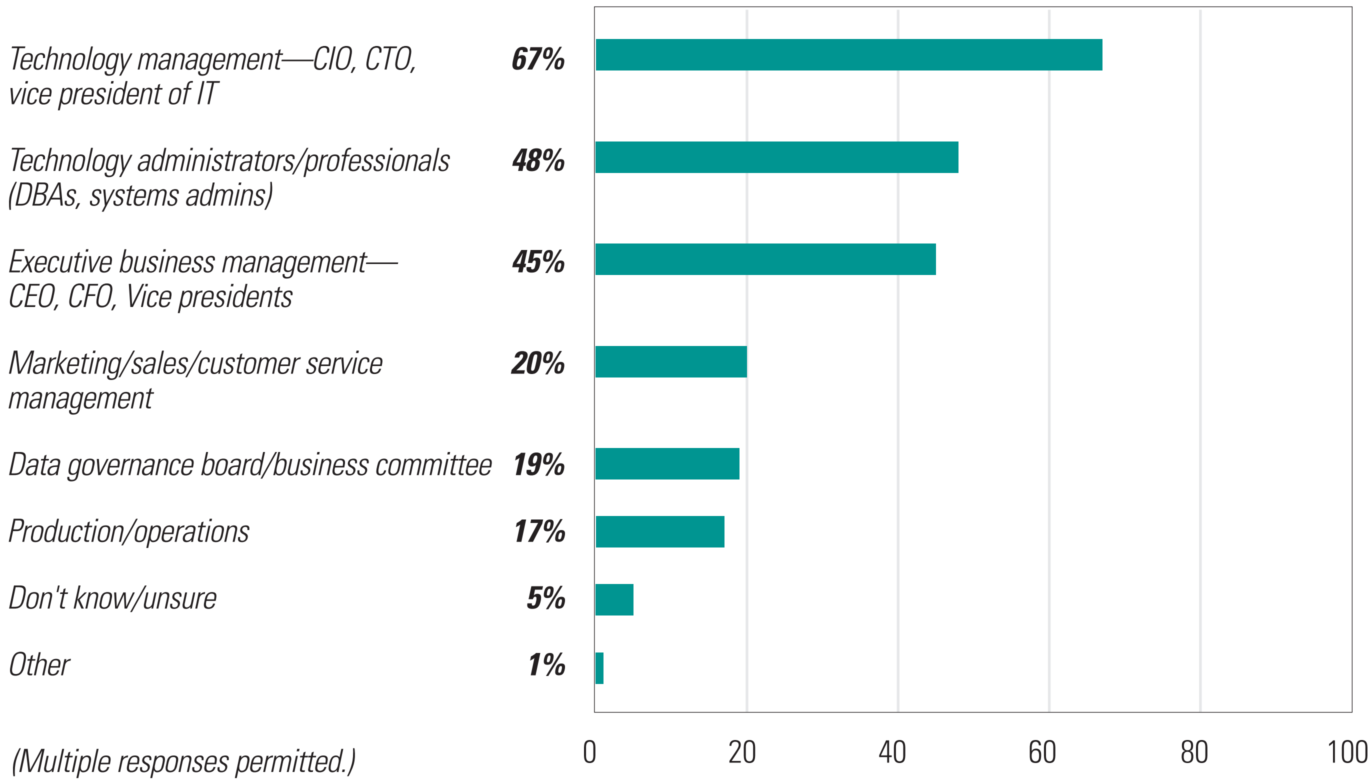



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 27: Key Influencers of Data Warehouse Investments



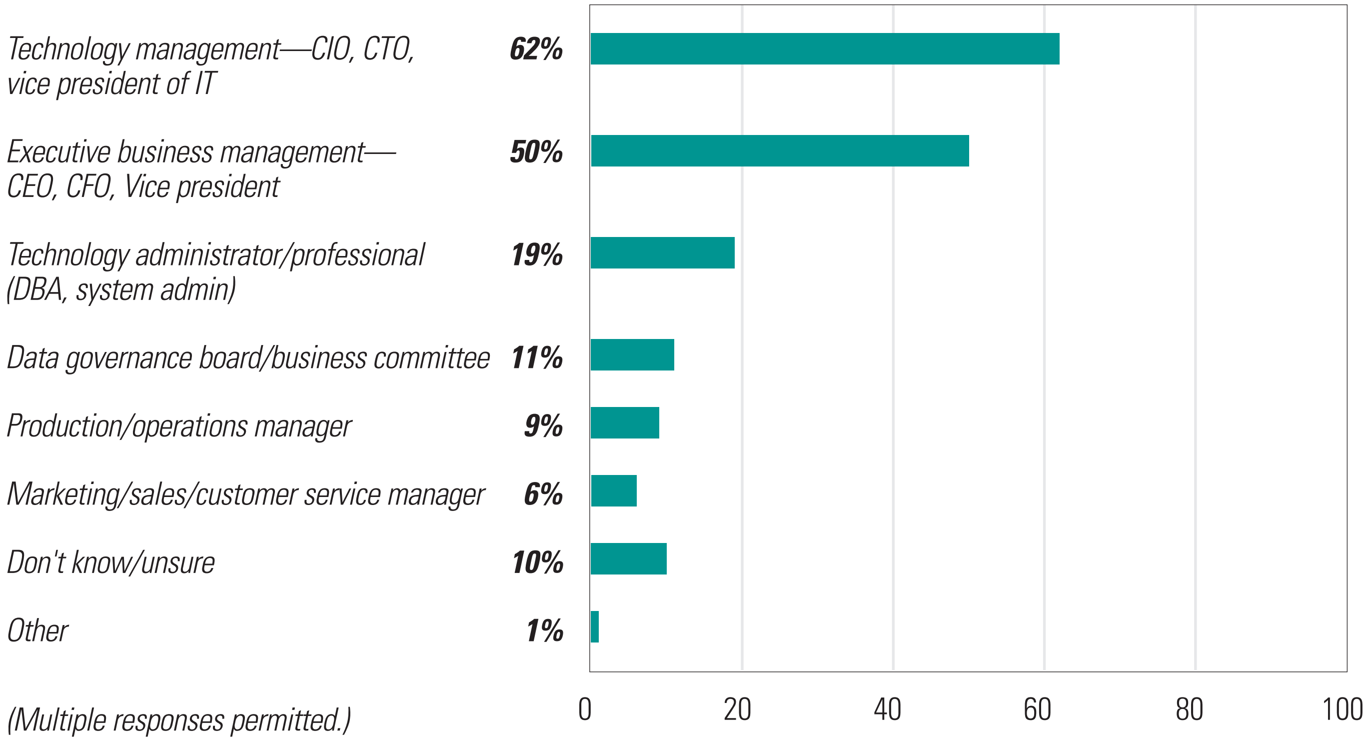

(Multiple responses permitted.)

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

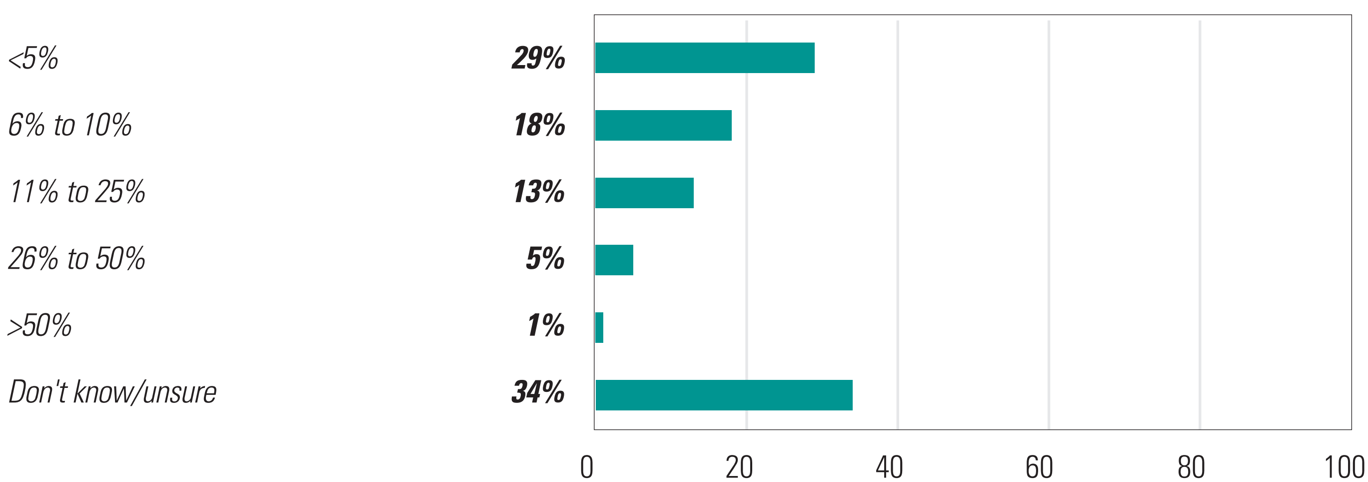
*Data collection and analysis performed with SurveyMethods.*

## Figure 28: Ultimate Data Warehouse Investment Decision Makers




*(Multiple responses permitted.)*

## Figure 29: Percentage of Capital and Operational IT Budget Spent on Data Warehousing

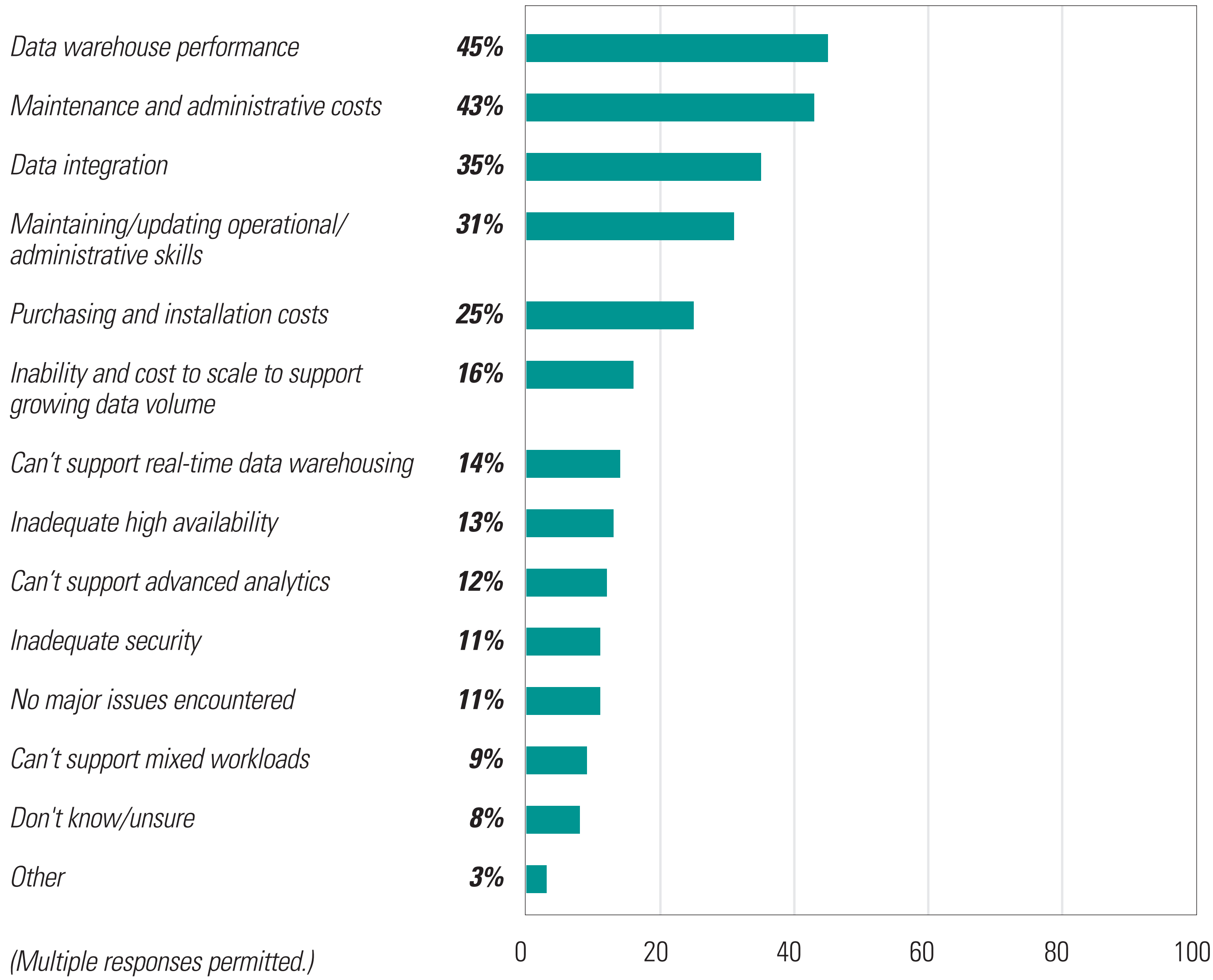



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 30: Leading Data Warehouse Challenges




*(Multiple responses permitted.)*

***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## IOUG RECOMMENDS

Data warehouses have been a part of enterprise business intelligence for some time, but a transformation is now underway in the way insights are being delivered to decision makers. This transformation is being driven by the Big Data explosion, as well as demand for real-time actionable information for decision at all levels of organizations.

IOUG recommends the following approaches to meet these burgeoning needs for accessibility in fast-growing and increasingly complex data environments:

- **Explore new data warehouse options:** New technologies and approaches are surfacing, ranging from ready-to-run database machines and appliances that can be quickly integrated into data environments to cloud-based solutions that provide expertise and support on an incremental basis.
- **Develop a strategy for cost-effectively managing unstructured data:** Much of the Big Data now entering enterprises may be managed by NoSQL databases, where unstructured analysis can take place. Enterprise relational databases can then be employed for more powerful analysis of information critical to core operations.
- **Open up data warehouse access:** Much of the analytical work associated with data warehouses and BI now go on behind the scenes. Interfaces to these environments are more user-friendly, and no longer require a Ph.D. in statistics or quantitative analysis. Decision makers across the organization —from executive suites to call centers—can gain the benefits of data warehouse implementations.
- **Encourage greater self-service capabilities:** Decision makers should be able to build their own queries as business situations demand, versus going to BI specialists or IT departments to request reports.
- **Get business buy-in and support:** Data warehousing solutions only deliver value if they have the support and input of the business. Build out a data warehouse system incrementally, starting with smaller or pilot projects that deliver quick wins that will generate enthusiasm from the rest of the business. As more business units or departments opt into the enterprise data warehouse, the costs of adding new data sources will decline.
- **Develop an integrated information management lifecycle strategy:** To maximize their usefulness, data warehouses must be incorporated in an organization's entire information management lifecycle processes. This includes integrating the data warehouse with a Master Data Management (MDM) framework, instituting enterprise-wide data governance standards, and ensuring a strategy for final retirement or archiving of data.
- **Capitalize on packaged applications:** Leverage all the work and effort of pre-packaged analytic applications and data marts by integrating them into the data warehouse environment and information management framework. These pre-packaged applications have come a long way and continue to be invested in heavily by BI vendors. These next generation analytic applications may provide additional benefits to current data warehouses, BI and analytic frameworks.

The findings from this latest IOUG member survey show that while most companies have well-established data warehouse systems, adoption is still limited within their organizations. This will soon change, as many respondents report a significant surge of data within their data warehouses in recent times, fueled not only by growing volumes of transaction data, but unstructured data, as well.

**Disclaimer:**

The foregoing recommendations are general in nature and do not apply to any individual user, organization or company. Each user's requirements, systems and capabilities are different, and it may or may not be advisable or feasible for all users to implement any or all of the recommendations listed above. Each user is responsible for making its own analysis of the advisability of implementing or adopting any of the recommendations and for actually implementing the same. Each user should consult with its own technical advisors or other applicable, qualified professional advisors before adopting or implementing any of these recommendations. IOUG shall not be liable to any person or entity arising out of any user's adoption or implementation of any of the recommendations contained herein.

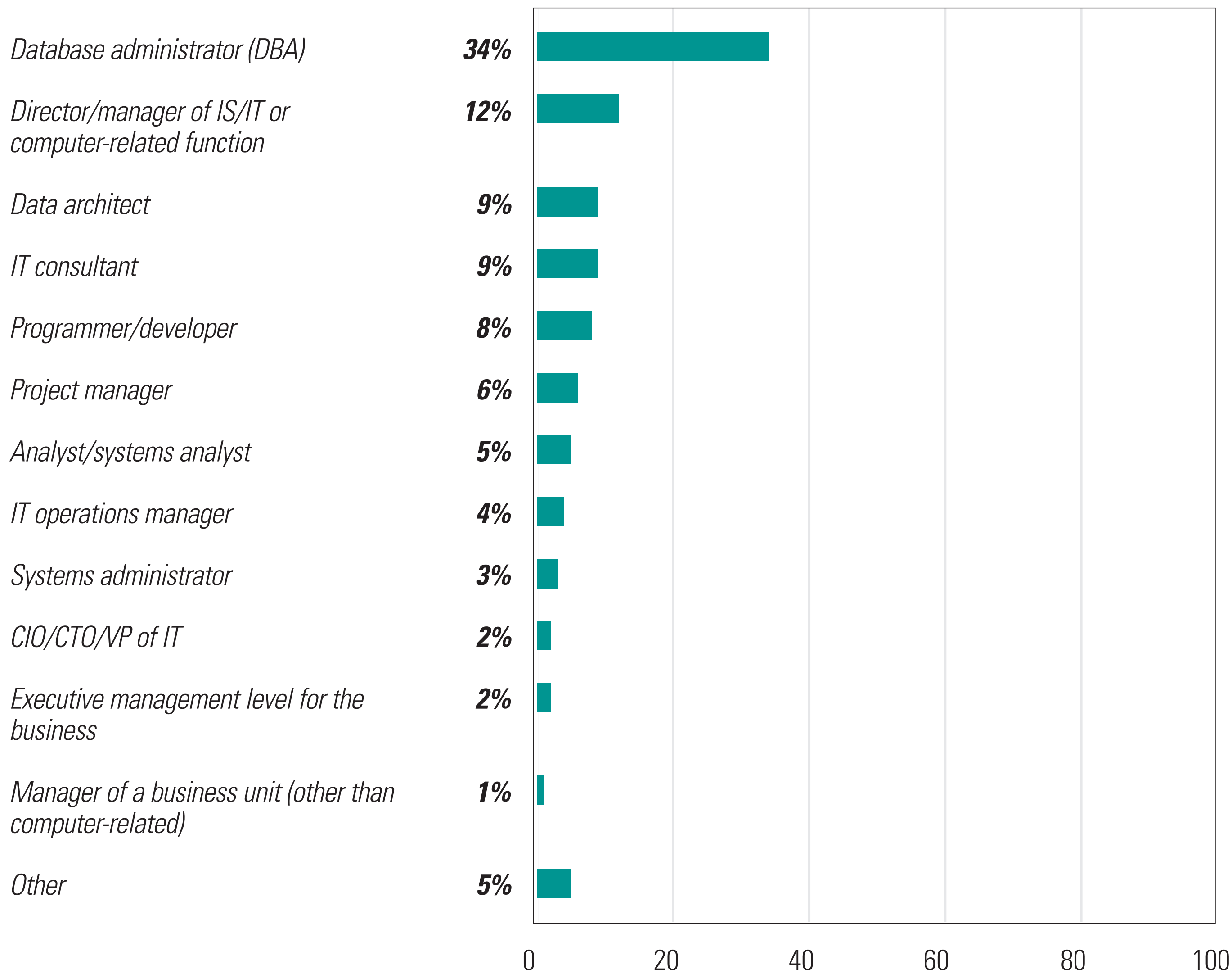
***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*



*Data collection and analysis performed with SurveyMethods.*

**DEMOGRAPHICS**

## Figure 31: Respondents' Job Titles

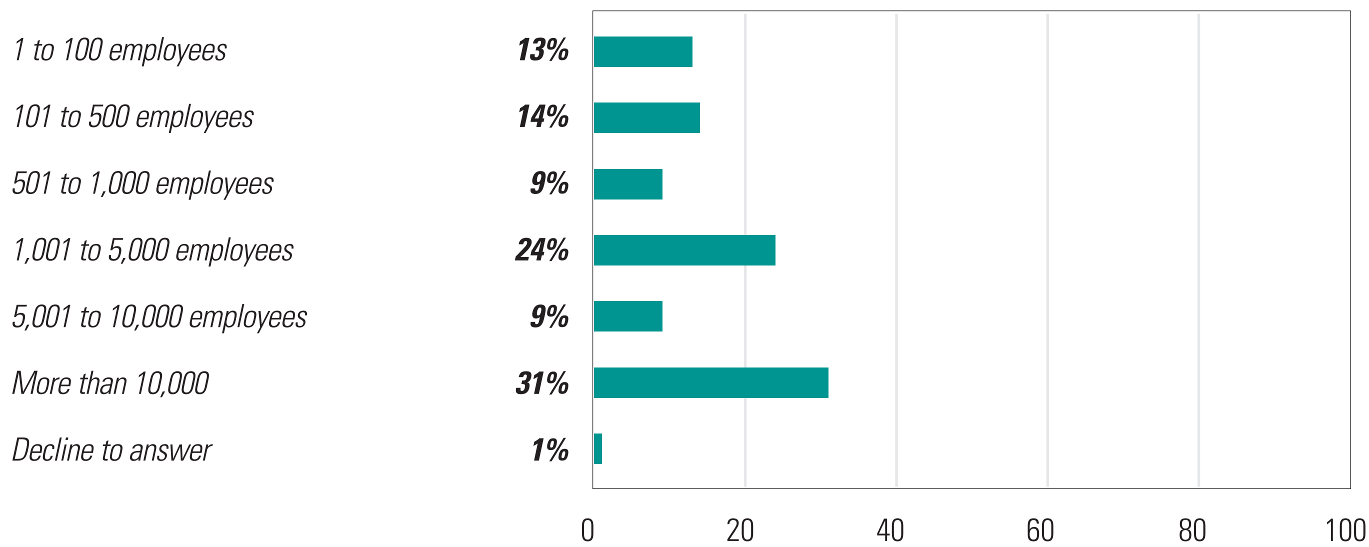



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 32: Respondents' Company Sizes—By Number of Employees

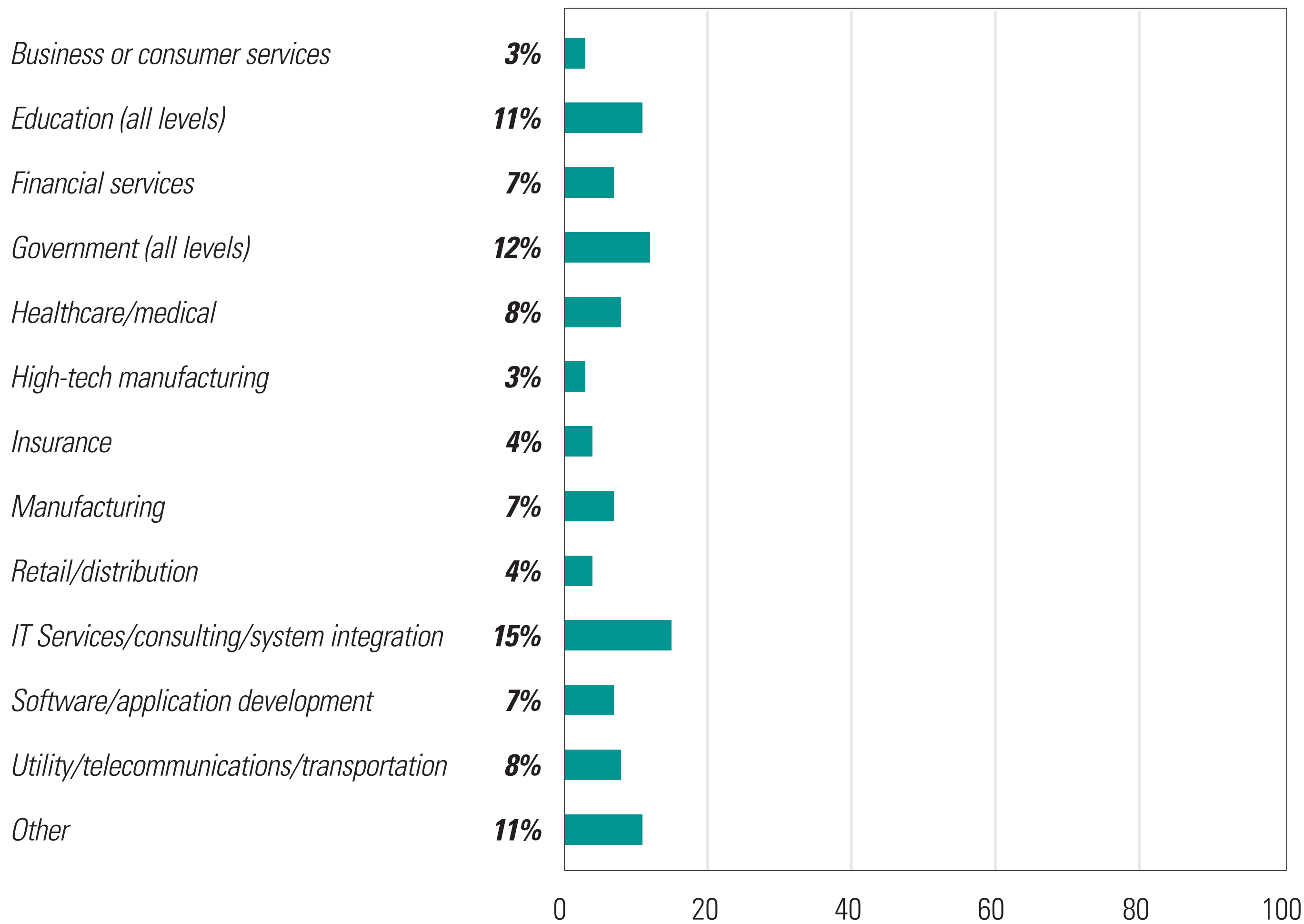



***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

## Figure 33: Respondents' Primary Industries




***A New Dimension to Data Warehousing: 2011 IOUG Data Warehousing Survey*** *was produced by Unisphere Research and sponsored by Oracle. Unisphere Research is the market research unit of Unisphere Media, a division of Information Today, Inc., publishers of* Database Trends and Applications *magazine and the* 5 Minute Briefing *newsletters. To review abstracts of our past reports, visit www.dbta.com/research. Unisphere Media, 229 Main Street, Chatham, NJ 07928. Tel: 973-665-1120, Fax: 973-665-1124, Email: Tom@dbta.com, Web: www.dbta.com.*

*Join the IOUG—If you're not already an IOUG member and would like to continue receiving key information like this, visit the IOUG at w3.ioug.org/join/today for information on how to join this dynamic user community for Oracle applications and database professionals.*

*Data collection and analysis performed with SurveyMethods.*

The **Independent Oracle Users Group (IOUG)** represents the voice of Oracle technology and database professionals, serving database administrations, developers, application and infrastructure architects, business intelligence specialists and IT management. The IOUG is dedicated to providing education and access to its membership of more than 20,000 international Oracle professionals, with special focus on: Business Intelligence, OBIEE, Data Warehousing, Analytics, Content Management, APEX, RAC, Disaster Recovery, Exadata/Exalogic, Fusion Middleware, High Availability, Linux, MySQL, SOA, Security, Storage, Virtualization Manageability, Cloud Computing and more.

IOUG empowers members to be more effective and efficient in their organizations and to simply do their job better. Unlike vendor information, consultancies, or other niche communities, the IOUG provides the professional Oracle user with qualified and vetted perspectives on technology trends, products and best practices; leading edge training and an advocacy channel back to Oracle Corporation.