IOUG
independent oracle users group

*For the Complete Technology & Database Professional*

# ENTERPRISES ADVANCE INTO THE CLOUD:
## 2011 IOUG CLOUD COMPUTING SURVEY

By Joseph McKendrick, Research Analyst
Produced by Unisphere Research, a Division of Information Today, Inc.
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## EXECUTIVE SUMMARY

An August 2011 survey of 257 IT and data managers and professionals finds more organizations are embracing both private and public cloud computing. The latest survey finds 37% of respondents now have private cloud computing efforts underway within their enterprises, up from 29% in a similar survey conducted in August 2010.

This is also the case with public cloud deployments as well. Twenty-one percent of respondents now use public cloud services in a meaningful way, up from 14% in the previous year. The survey also finds more organizations are replacing their existing systems with outside cloud services, and using outside cloud services for new applications as well.

The role of IT departments and management committees in managing private and public cloud efforts has increased over the past year as well, reflecting the increasing centralization of cloud efforts within enterprises. IT executives, in particular, are increasingly taking on a leadership role in identifying and managing both internal and external cloud resources for their enterprises.

**Key highlights of the survey's findings include the following:**

- Both private and public cloud adoption are up—30% of respondents report having limited-to-large-scale private clouds, up from 24% only a year ago. Another 25% are either piloting or considering private cloud projects. Public cloud services are also being adopted by more than one out of five respondents.
- Cloud services are carrying larger workloads within organizations. A large segment of respondents, 37%, report that they now use or offer between 1 and 10 services through a private cloud. A large segment of organizations adopting public cloud services have replaced applications offered by their own IT departments.
- Information technology departments have leadership roles not only in managing and rolling out cloud services, but also in the governance process that dictates the value of these services to their businesses. Most respondents expect to achieve cost savings through cloud initiatives, along with greater availability and system response times. However, organizational—not technical—challenges are making it difficult to achieve these goals. Budgets for cloud initiatives are on the rise—more than a third seeing increased funding for private cloud initiatives over the past year, versus only 2% reporting cutbacks.

The survey was conducted in August 2011 among members of the Independent Oracle Users Group (IOUG), by Unisphere Research, a division of Information Today, Inc. in partnership with Oracle. This is the IOUG's second major survey on enterprise cloud trends.

Respondents to the survey have a variety of job roles and represent a wide range of company types and sizes. The largest segment of respondents has the title of database administrator, followed by IT manager or director. More than one-third come from very large organizations with more than 10,000 employees. But there is also a sizable contingent of small to medium-size businesses in the survey, as well. In terms of industry groups, the largest segments seen in this survey are IT services/consulting, utilities/telecommunications, education, and government agencies. (See Figures 29–31 at the end of this report.)

***Note for those comparing notes with last year's IOUG Cloud survey report:*** *In this year's survey, private cloud questions were limited to respondents with, piloting, or considering private clouds. For comparison purposes, 2010 data mentioned in this report for private clouds is filtered by respondents with, or considering such implementations, as well. This data was not filtered in the 2010 report.*

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## CLOUD ADOPTION TRENDS

**Both private and public cloud adoption are up—30% of respondents report having limited-to-large-scale private clouds, up from 24% only a year ago. Another 25% are either piloting or considering private cloud projects. Public cloud services are also being adopted by more than one out of five respondents.**

A majority of respondents, 55%, report they either have private cloud computing services in place—defined in this survey as on-demand shared services provided to internal departments or lines of business within an enterprise—or are considering or planning an implementation. This is up from 45% a year ago. There has also been significant movement in terms of actual live deployments. Close to one-third of respondents, 30%, say they have already deployed private clouds, either in large-scale production or limited use. This is up from 24% in the survey from a year ago. (See Figures 1 and 2.)

Companies are consolidating IT assets into "cloud"-like shared pools of resources across multiple applications, various departments and divisions, and even to outside partners. These "private clouds" offer the same flexibility and incremental cost advantages to end users as public clouds, but are delivered from internal providers, such as IT departments or a dedicated subsidiary. Private clouds are also seen as a way to consolidate the technology silos that have sprung up across many of today's organizations. In most cases, these private cloud-based services are built and maintained by corporate IT departments.

In addition, more than one-fifth of respondents are using "public" cloud services from outside providers. The ability to tap into such services on an on-demand basis provides businesses the ability to launch or expand projects or initiatives with minimal up-front investment. A total of 21% of respondents report that their companies currently use the services of public cloud-based service providers. (See Figure 3.)

Overall, there is greater adoption of private clouds compared to public clouds (37% vs. 21%), but the growth rate in public clouds exceeds that of private clouds (50% vs. 28%).

Where do "private" clouds leave off and "public" clouds begin? One respondent sees public cloud offerings as key stepping stone to moving to more hybrid or private cloud approaches. First, he advises, "don't use the term 'cloud'—it's just marketspeak for a well-designed network." Then if there is sufficient budget, "try a public service first, and create a pilot development project with virtualization of the various pieces, all the way through to implementation at that service. If the results are favorable, then continue with that service and negotiate capacity and other applications there." The respondent also says that another option is to "redesign or rebuild your own network and server configurations. Get help from your hardware and software vendors and/or consultants if you don't have the staff. Make sure your people are trained throughout this process."

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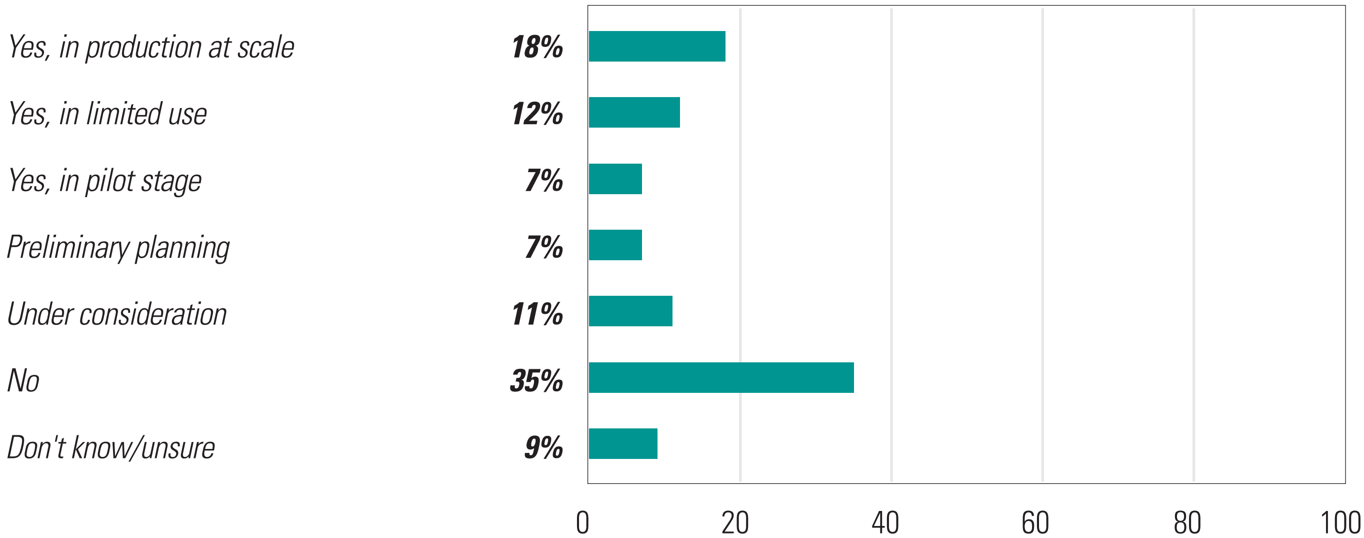
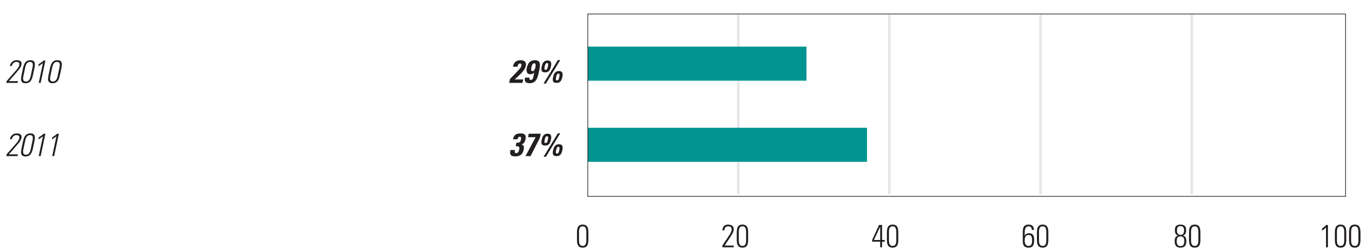
## Figure 1: Provide or Use Internal or Private ‘Clouds’?

*(Defined as on-demand shared services provided to internal departments or lines of business within an enterprise)*




## Figure 2: Companies With Active Private Clouds

*(In production, limited use, or pilot stage—2010 to 2011)*

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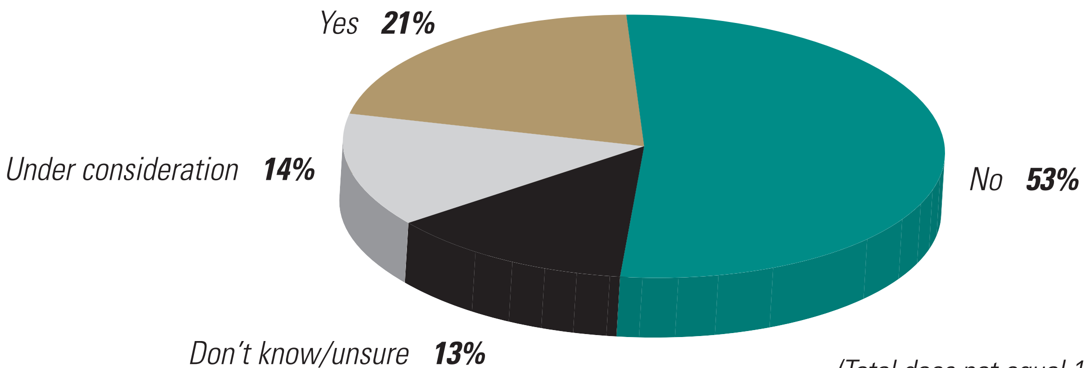
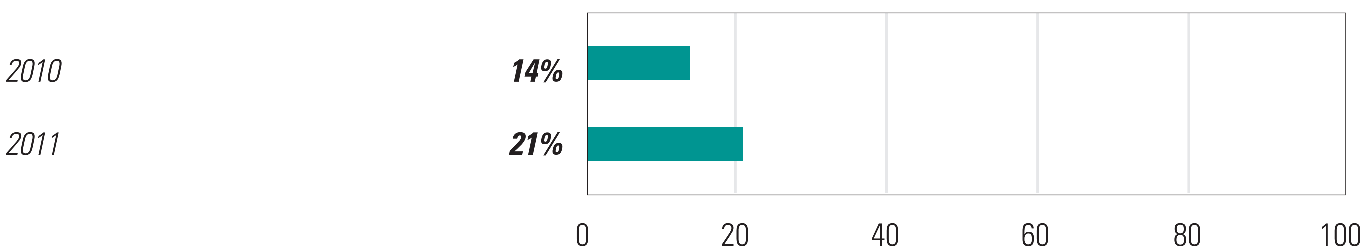
## Figure 3: Use Public SaaS/IaaS or Cloud Providers?




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

## Figure 4: Companies Using Public Clouds—2010 to 2011

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## CLOUD VALUE POINTS

**Cloud services are carrying larger workloads within organizations. A large segment of respondents, 37%, report that they now use or offer between 1 and 10 services through a private cloud. A large segment of organizations adopting public cloud services have replaced applications offered by their own IT departments.**

The survey found that there are many private and public cloud use-cases (as shown in Figure 5):

- Clouds are being used for new applications more often than extensions to existing applications.
- Clouds are often used for development and testing, as well as for production systems
- Clouds are being used for enterprise-class applications more often than departmental applications, which may be surprising to some
- Clouds applications are most often used by employees rather than by customers, suppliers or partners
- Clouds are being used for applications with dynamic or fluctuating workloads as well as stable workloads. Interestingly, it seems that “elastic scalability” is not always an important driver for organizations to use clouds.
- Clouds are being used by long-lived applications (defined as more than one year life expectancy for purposes of this survey) as well as temporary applications (defined as less than one year life expectancy). Again, it is interesting that it is not always the case that the ability to return unused resources to a shared pool is an important driver for clouds.

The number of workloads being deployed on clouds is growing. By next year at this time, 41% of respondents expect to see a significant portion of their IT assets supported in private clouds (more than 10% of workloads), almost double the current level. One out of 10 respondents also predict that a majority of their IT operations will be on private clouds within the coming year. (See Figure 6.)

Home-grown or customized applications have vaulted to the top of the list in terms of the types of applications companies are running on private cloud services. At least 29% of respondents say they are running these applications on private clouds, up from 23% a year ago. This may present one of the most effective use cases for alternatives to the homogeneous applications offered through public cloud channels. There is also a greater level of support for departmental or line-of-business applications, rising from 13% of private cloud deployment sites a year ago to 27%. (See Figures 7 and 8.)

Email, collaboration, and communication top the list of applications respondents’ companies subscribe to from public cloud providers. Marketing and sales-related applications are next on the list, followed by human resources-related apps. (See Figure 9.)

What type of cloud platform and infrastructure cloud services are respondents’ companies using? The largest segment of IT managers (25%) indicate they are employing application server platform as a service. Another 15% seek online, on-demand storage services, and a similar number are now accessing online, on-demand databases. (See Figure 10.)

There are several key types of private platform and infrastructure (PaaS and IaaS) cloud services being provided by corporate IT departments to their internal customers. More than 40% of respondents say their cloud is based on application server platform as a service. Another 36% report their databases are being offered through private cloud infrastructure. There has been a notable increase in deployments of application servers as the foundation of private clouds over the past year. However, fewer companies see storage as a private cloud offering. (See Figure 11.)

There are situations in which respondents’ companies opted to deploy certain services via a private cloud versus public cloud, the survey finds. Security and privacy concerns top the list, cited by more than 60% of respondents. This is up from 54% voicing such concerns in last year's survey. Also on the rise as a reason to maintain cloud services in house are concerns about regulatory

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compliance—up from 19% in last year's survey to 29% today. Many companies are required to keep close tabs on their data. For example, the European Union requires that data storage for EU-based entities take place within the boundaries of EU countries.

Decreasing over the past year are concerns about costs (dropping from 35% to 27%) and quality of service (from 34% to 26%). These may still be issues for those using public cloud services, but they don't bear as much weight in decisions to go with private clouds. (See Figure 12.)

In a large segment of companies employing public cloud services, these services have replaced services or applications offered by respondents' companies own IT departments. Thirty-eight percent report that some to most internal applications have been replaced by cloud services at their organizations. (See Figure 13.)

One respondent cautioned that managers really need to do their homework when assessing whether to move critical applications into the cloud. "Consider what the disaster recovery strategy is for a cloud-based service," he advised. "Perform a full cost analysis of the public cloud-based service versus private service and non-cloud-based service." The respondent also recommends that those considering cloud "perform an enterprise-wide discovery and cost analysis of application/server candidates that could be leveraged in a cloud-based environment."

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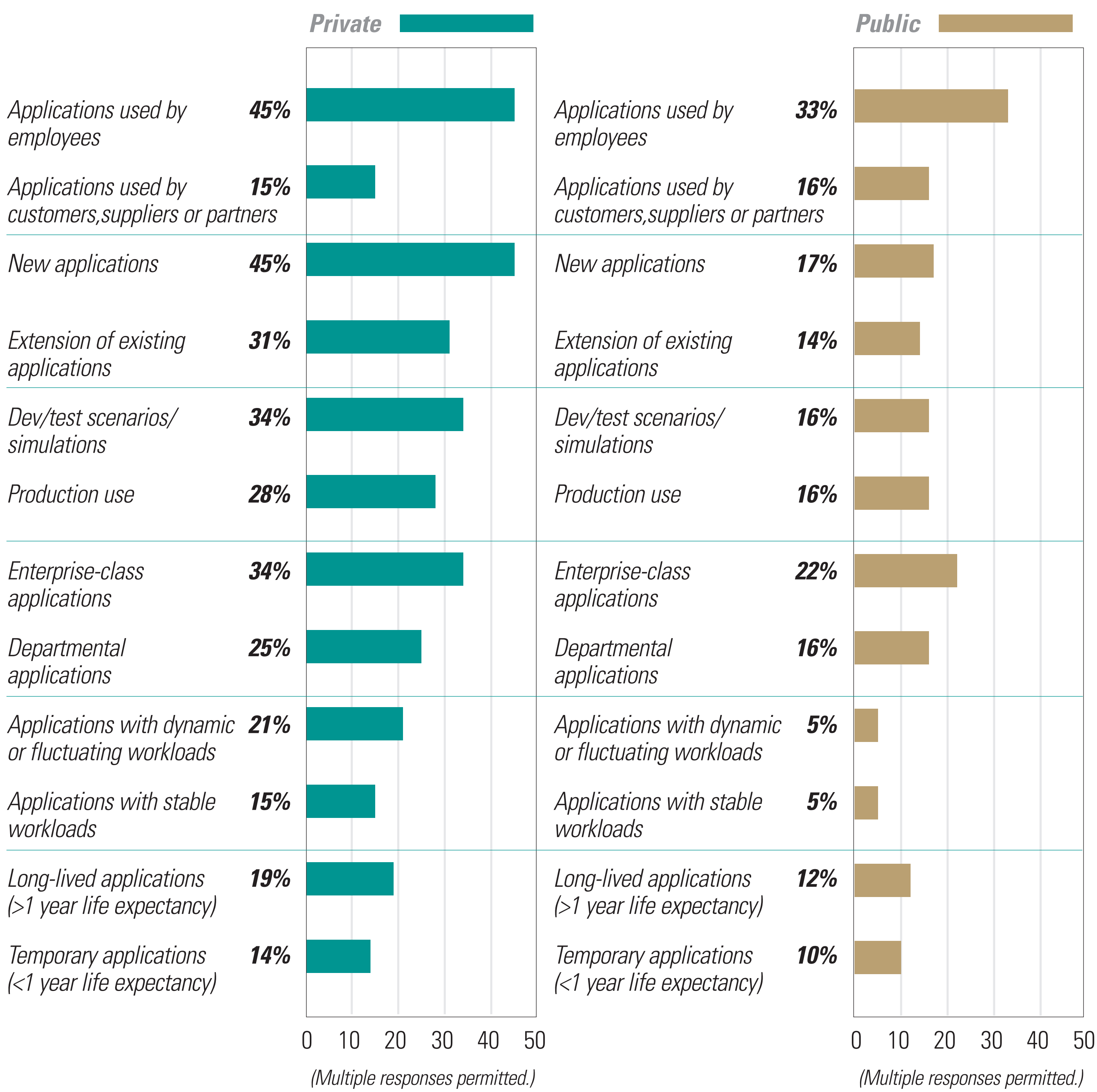
## Figure 5: Primary or Initial Use Cases for Private Clouds

*(Among companies employing or considering clouds)*

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## Figure 6: Percentage of IT Workload Processing Handled by Private Clouds

*(Among companies employing or considering private clouds)*

| | Now | By next year |
|---|---|---|
| None | **25%** | **9%** |
| 1% to 10% | **31%** | **26%** |
| 11% to 50% | **17%** | **31%** |
| More than 50% | **4%** | **10%** |
| Don't know/unsure | **23%** | **24%** |

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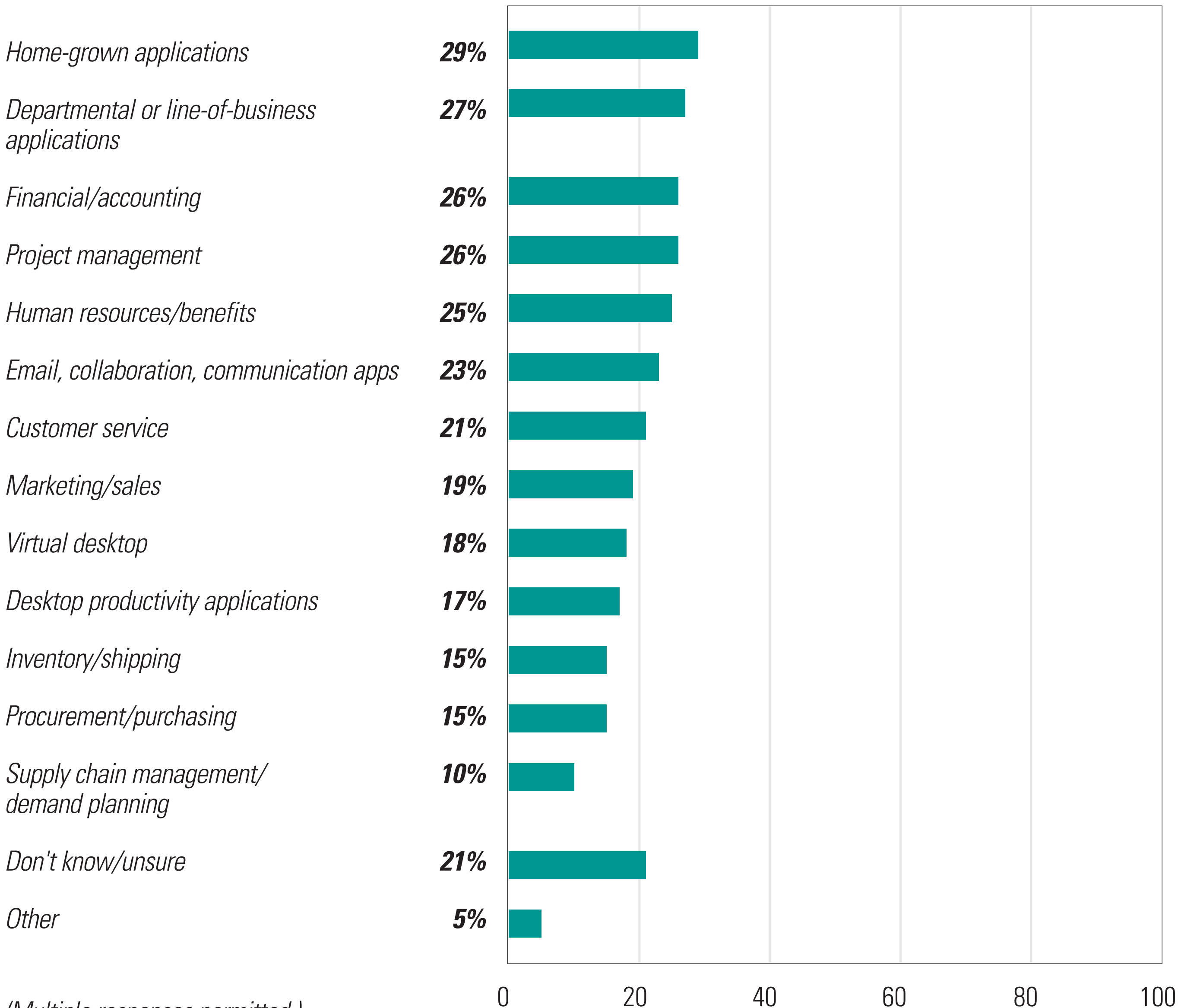
## Figure 7: Private Cloud Applications Adopted

*(Among companies employing or considering private clouds)*




*(Multiple responses permitted.)*

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## Figure 8: Top Seven Private Cloud Applications—2010 to 2011

*(Among companies employing or considering private clouds)*

| | 2010 | 2011 |
|---|---|---|
| *Home-grown applications* | ***23%*** | ***29%*** |
| *Departmental/line of business* | ***13%*** | ***27%*** |
| *Financial/accounting* | ***28%*** | ***26%*** |
| *HR/benefits* | ***26%*** | ***25%*** |
| *Email/collaboration* | ***28%*** | ***23%*** |
| *Customer service* | ***20%*** | ***21%*** |
| *Marketing/sales* | ***12%*** | ***19%*** |

*(Multiple responses permitted.)*

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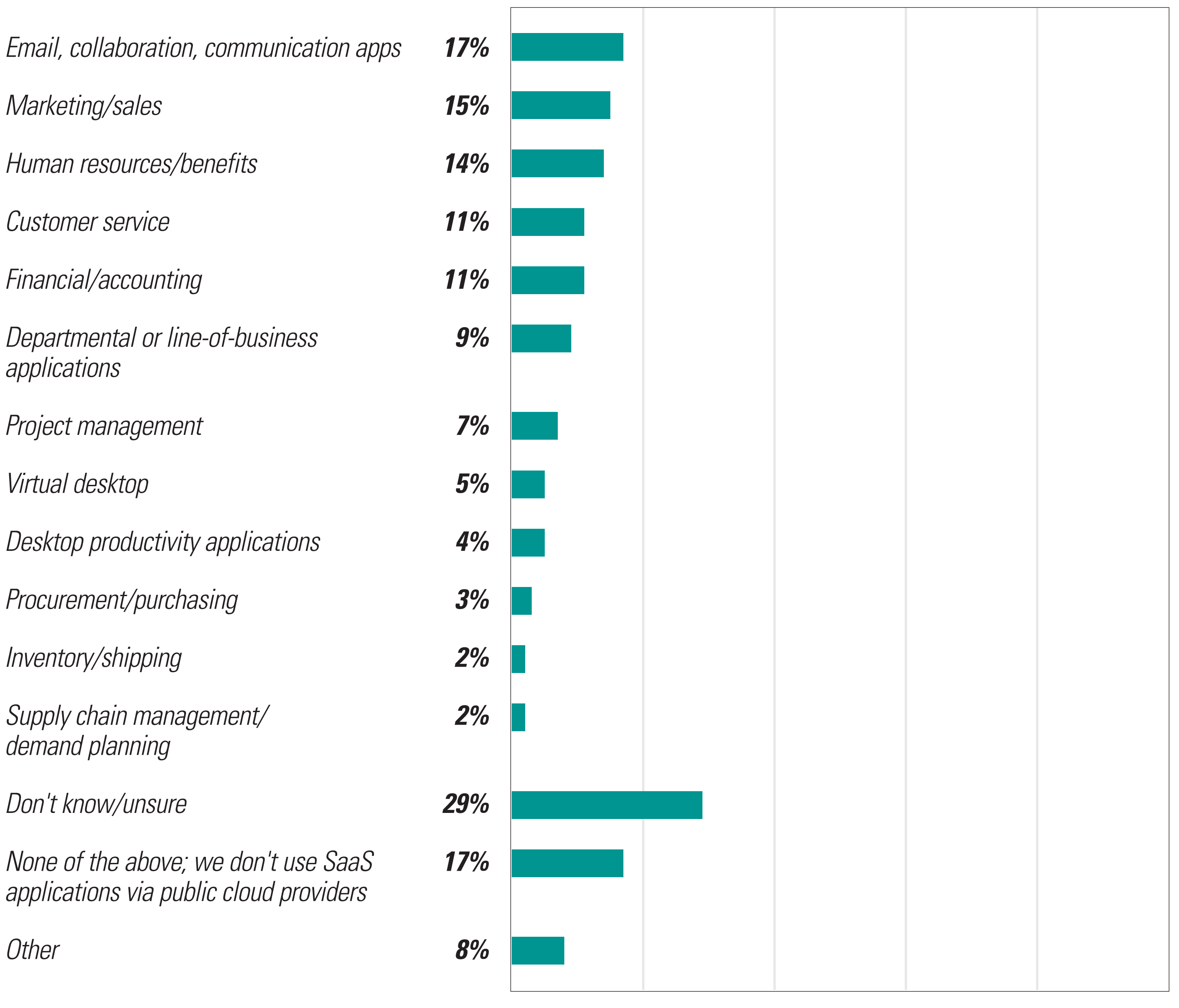
## Figure 9: Public Cloud Services Adopted

*(Among companies employing or considering public clouds)*




*(Multiple responses permitted.)*

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## Figure 10: Platform and Infrastructure (PaaS and IaaS) Cloud Services

*(Among companies employing or considering private or public clouds)*

| | Private | Public |
|---|---|---|
| **PaaS:** | | |
| Application server platform as a service | 41% | 25% |
| Database platform as a service | 36% | 14% |
| Identity as a service | 9% | 8% |
| **IaaS:** | | |
| Compute as a service | 13% | 10% |
| Storage as a service | 22% | 15% |
| Software development and test as a service | 15% | 4% |
| None | 19% | 23% |
| Don't know/unsure | 26% | 35% |
| Other | 2% | 3% |

*(Multiple responses permitted.)*

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## Figure 11: Top Three Private PaaS and IaaS Services—from 2010 to 2011

| *(Multiple responses permitted.)* | 2010 | 2011 |
|---|---|---|
| *Application server platform as a service* | **36%** | **41%** |
| *Database platform as a service* | **35%** | **36%** |
| *Storage as a service* | **30%** | **22%** |

## Figure 12: Reasons for Selecting Private Clouds Versus Public Clouds

| *(Among companies employing or considering private clouds)* | 2010 | 2011 |
|---|---|---|
| *Security and privacy concerns* | **54%** | **61%** |
| *Services already existed internally* | **31%** | **42%** |
| *Regulatory compliance concerns* | **19%** | **29%** |
| *Long-term cost* | **35%** | **27%** |
| *Quality of service concerns* | **34%** | **26%** |
| *Difficulty to integrate with in-house systems* | **17%** | **13%** |
| *Difficulty to customize* | **16%** | **12%** |
| *Concern about lock-in and ability to switch* | **10%** | **10%** |
| *Other* | **6%** | **10%** |

*(Multiple responses permitted.)*

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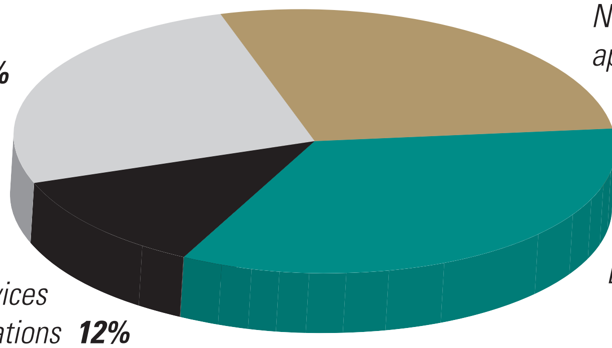
## Figure 13: Public SaaS/IaaS or Cloud Services Replaced Internal IT Applications?




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

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## MANAGEMENT AND GOVERNANCE

**Information technology departments have leadership roles not only in managing and rolling out cloud services, but also in the governance process that dictates the value of these services to their businesses. Most respondents expect to achieve cost savings through cloud initiatives, along with greater availability and system response times. However, organizational—not technical—challenges are making it difficult to achieve these goals. Budgets for cloud initiatives are on the rise—more than a third seeing increased funding for private cloud initiatives over the past year, versus only 2% reporting cutbacks.**

Information technology departments have taken on a prominent role in both private and public cloud management. The survey finds that 72% of respondents say their IT departments are in charge of providing and managing private cloud services—an uptick from 69% a year ago. Overall, over the past year there has been a shift away from having individual business units or subsidiaries managing private clouds and toward either IT departments or specialized third-party firms. (See Figures 14 and 15.)

Increasingly, IT is more involved in public cloud deployments as well. While IT may not be actually building or running some applications in a hands-on way, IT managers are clearly taking more of a leadership role in identifying and managing business technology resources available to the enterprise. Sixty-seven percent say IT either recommends or has a say in public cloud service deployments. In 37% of the cases, IT has final, absolute say over what services are brought into the enterprise from outside providers. (See Figure 16.)

Information technology departments are also seeing greater responsibilities with private cloud governance—which encompasses determining which services are best suited for the business requirements at hand. At this time, 66% of respondents with or planning private cloud implementations report that their IT department determines what private cloud services to deploy and how they are governed. This is up from 58% reporting such a role for IT in last year's survey. There is also an increased role for cross-departmental or corporate committees as well. A total of 31% report that these committees have a say over private cloud governance, more than double the percentage from a year ago. There is also an increasing reliance on special business units or subsidiaries created to oversee organizations' private clouds. Twenty-two percent of companies have turned over governance to a cloud subsidiary, up from 16% a year ago. (See Figures 17 and 18.)

Thirty-seven percent of respondents with or planning private cloud activity at their companies report they have some kind of chargeback method for business users that access enterprise cloud services. In most cases (cited by 16%), charges are based on metering, similar to the way they may pay to an outside cloud provider—user organizations are charged based on fixed rates and measured, actual usage of IT resources. (See Figure 19.)

Where does the money to fund private cloud services come from? Half of the respondents report that money for centralized services comes from a central fund—either corporate (26%) or central IT (24%). Another 14% report that funding comes out of the budgets of individual user departments. Another 44% say there either is no funding, or they are not aware if there is. (See Figure 20.)

There are numerous business benefits companies expect to see from private cloud adoption, but cost savings tops the list. Among the respondents with or planning private cloud efforts, 63% anticipate they will be able to save costs through consolidation to achieve higher asset utilization. A majority, 54% also expect costs savings through operational efficiency. The ability to eliminate duplication, and increase speed to market are also important considerations cited by respondents. These benefits point to opportunities to reallocate limited IT resources to more strategic projects of business value versus systems maintenance. (See Figure 21.)

There are also technical benefits many companies expect to see from private cloud adoption. A majority, 52%, hope to achieve better availability in their systems. A similar number also look for greater scalability. Half also seek faster response to dynamic workloads. (See Figure 22.)

There are also a number of benefits for organizations using public PaaS, IaaS, or cloud services. The feature that garners the greatest interest from respondents (45%) is the fact that public cloud solutions offer rapid-start opportunities. Another 43% like the fact that public cloud solutions reduce or eliminate the need for data center systems, hardware and accompanying administration. A similar number respond to the ability to scale applications on demand. (See Figure 23.) Interestingly, these

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qualities map closely to the benefits seen from private cloud environments as well, as shown in the previous section of this report.

The jury is still out on whether companies are actually seeing benefits as a result of adopting public cloud services. A majority of those that use public SaaS, IaaS, or cloud services, 61%, report that they haven't seen results yet or are unsure. (See Figure 24.)

What are the challenges of building and using private clouds? Organizational—not technical—issues stand in the way. The largest set of respondents, 43%, say they are wrestling with issues around gaining cross-organization support or participation. This is up from 34% in last year's survey. As noted throughout this survey, there is evidence that IT departments are taking on a greater role in managing cloud implementations. Another challenge on the rise is creating the business case and funding model, rising from 32% to 38%. (See Figures 25 and 26.)

There are also a number of challenges respondents have with the use public services by members of their companies. Security ranks paramount, cited by close to eight out of 10 respondents (77%). A majority are also concerned about issues around quality of service, such as availability and performance (55%). Quality of service has especially come to the forefront in the months immediately prior to the fielding of this survey, with the highly publicized outage of Amazon Web Services, which provides a platform for thousands of businesses. Substantial numbers of respondents also expressed concern about the relationships they would have with SaaS or cloud vendors, fearing too much lock-in to a single solution set or platform (42%), or even the ability of the vendor to deliver capabilities in the long run, without potential disruptions either by financial setbacks or by acquisitions or mergers. (See Figure 27.)

Overall, funding for private clouds is on the rise. Thirty-five percent of respondents with or planning private clouds report increased budgets over the past year, compared to only 2% reporting declines. However, it's notable that 44% are not aware of what their organizations' cloud budgets were, suggesting a disconnect between corporate management and IT on this area, as well as the amorphous nature of private cloud implementations. (See Figure 28.)

For the most part, budgets for public services have remained the same over the past year. Twenty-five percent report no significant change in their budgets, and another 20% report growth. By contrast, only 3% have seen a decline in their budget. A majority of respondents, 52%, say they do not know what the status of their organizations' public on-demand service budgets —reflecting the decentralized nature of this phenomenon. (See Figure 28.)

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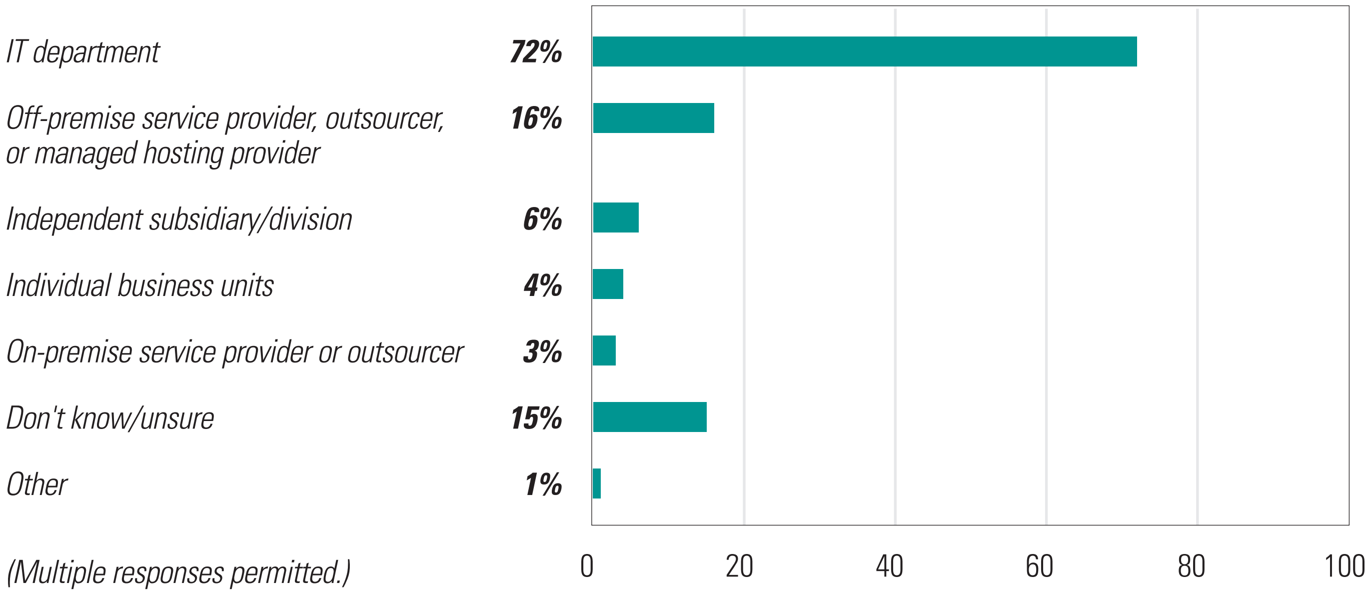
## Figure 14: Who Manages Private Cloud Services?

*(Among companies employing or considering private clouds)*




*(Multiple responses permitted.)*

## Figure 15: Top Three Private Cloud Overseers for Management—2010 to 2011

| *(Among companies employing or considering private clouds)* | 2010 | 2011 |
|---|---|---|
| *IT department* | ***69%*** | ***72%*** |
| *Business subsidiaries/units* | ***13%*** | ***10%*** |
| *Third-party firm* | ***19%*** | ***12%*** |

*(Multiple responses permitted.)*

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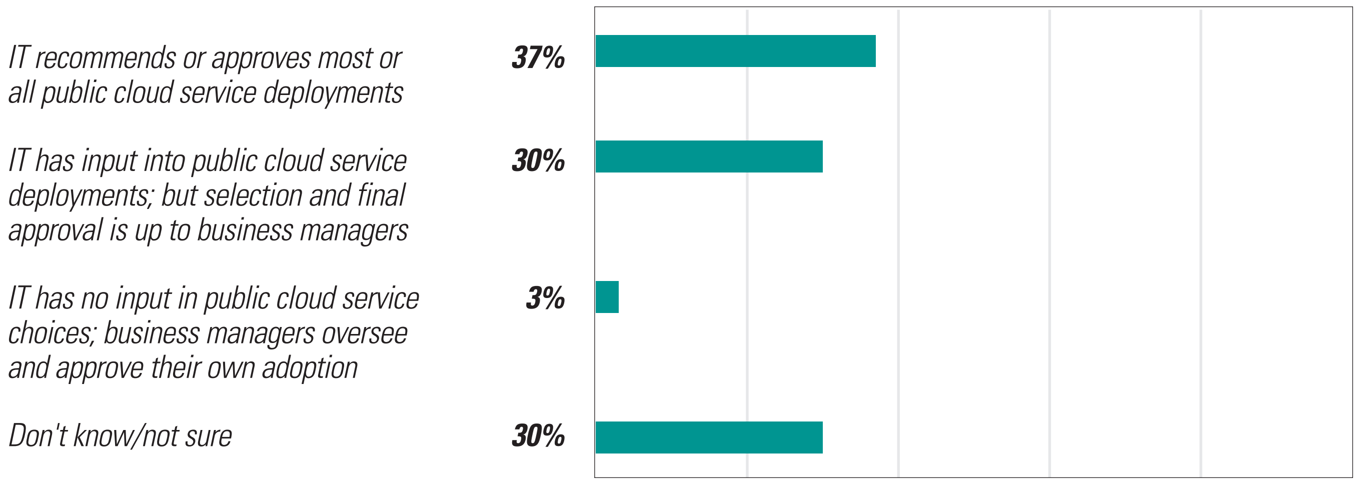
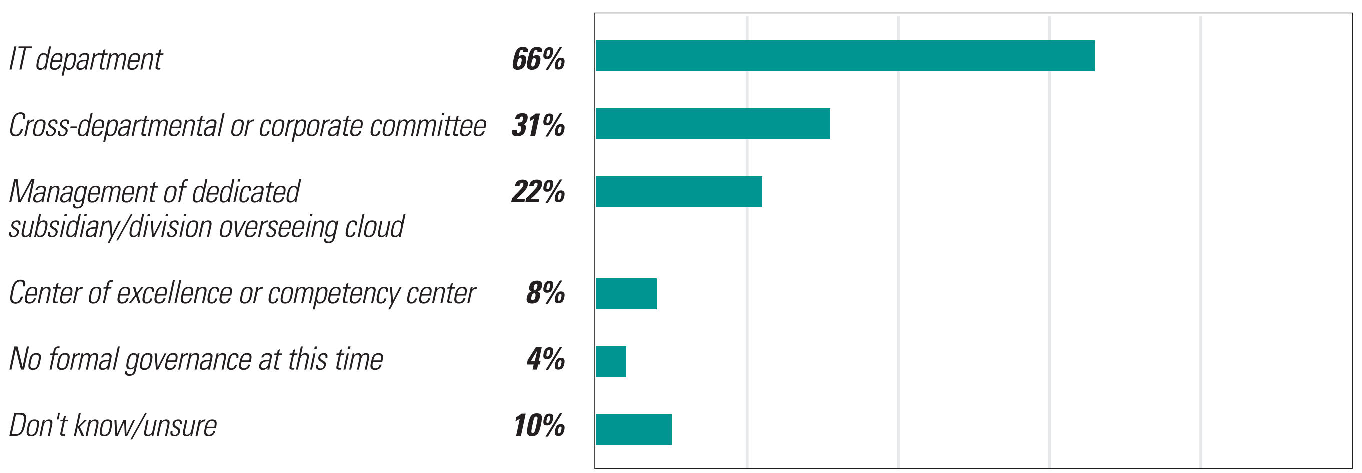
## Figure 16: IT Department Role in Public Cloud Services




*(Multiple responses permitted.)*

## Figure 17: Who Governs Private Clouds?

*(Among companies employing or considering private clouds)*




*(Multiple responses permitted.)*

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## Figure 18: Top Three Private Cloud Overseers for Governance—2010 to 2011

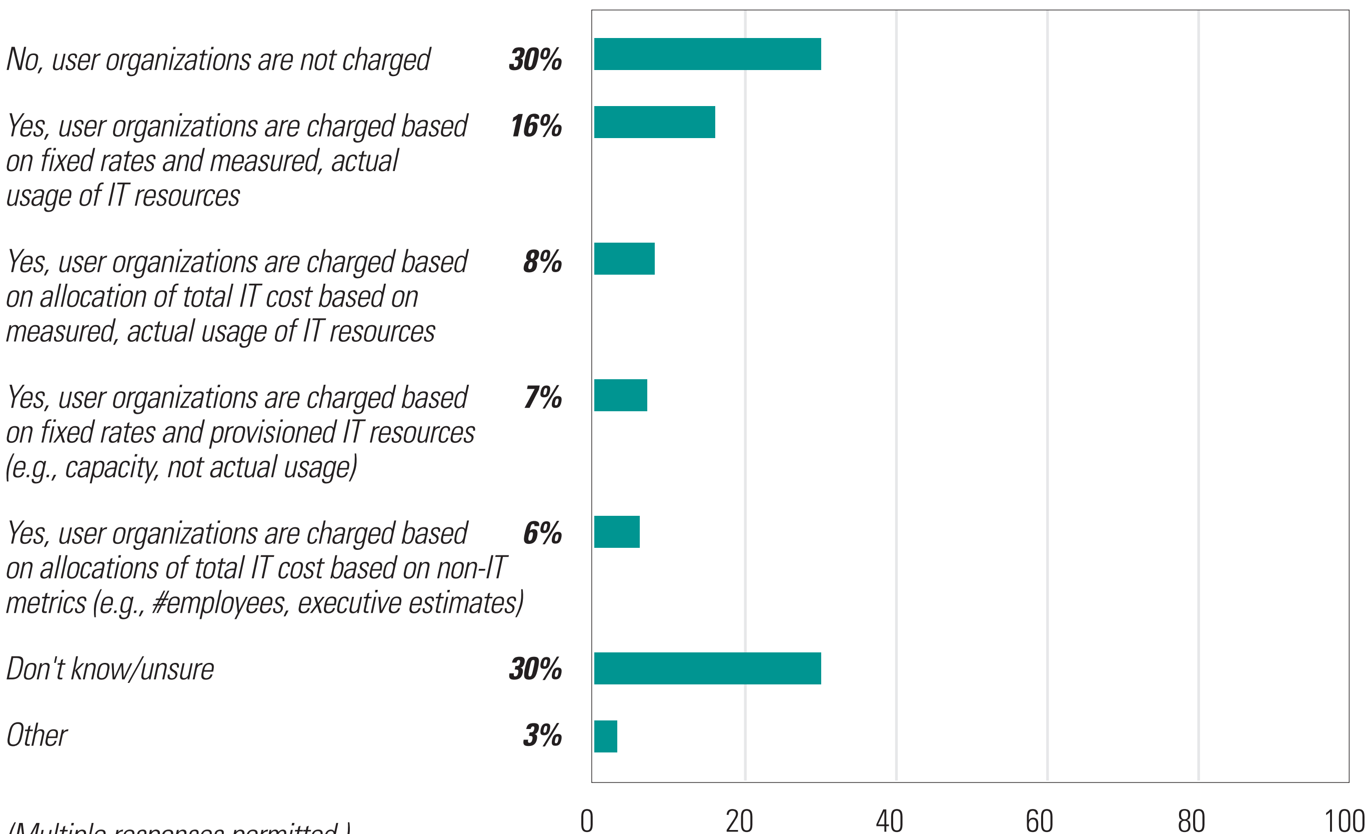
*(Among companies employing or considering private clouds)*

| | 2010 | 2011 |
|---|---|---|
| IT department | 58% | 66% |
| Governance committee | 15% | 31% |
| Dedicated cloud subsidiary | 16% | 22% |

*(Multiple responses permitted.)*

## Figure 19: Business Units Charged for Private Cloud Service Usage?

*(Among companies employing or considering private clouds)*




*(Multiple responses permitted.)*

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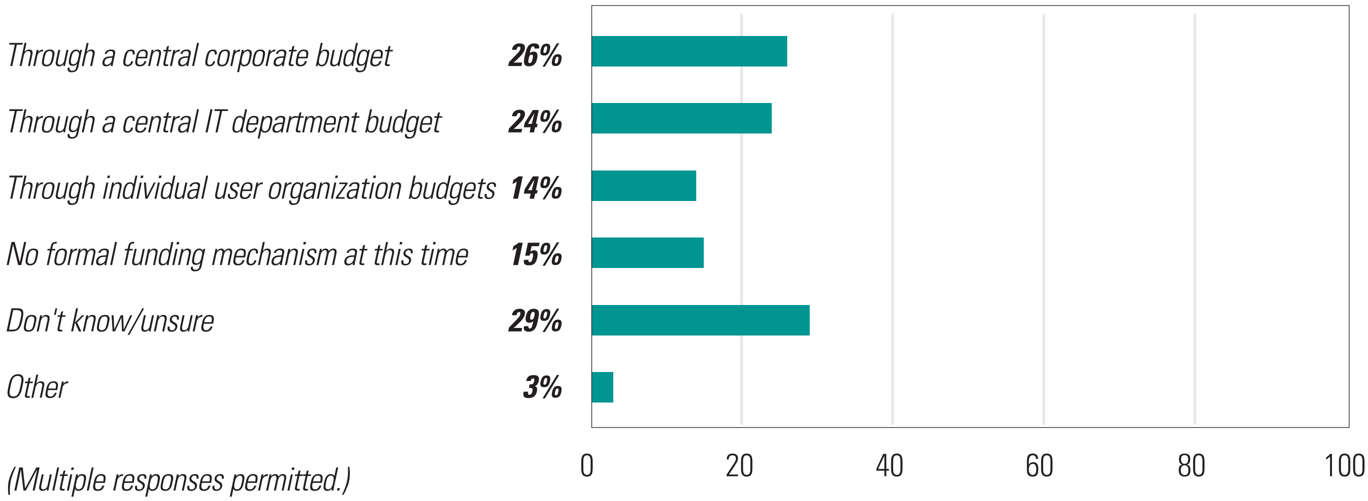
## Figure 20: How Private Cloud Services are Funded

*(Among companies employing or considering private clouds)*




*(Multiple responses permitted.)*

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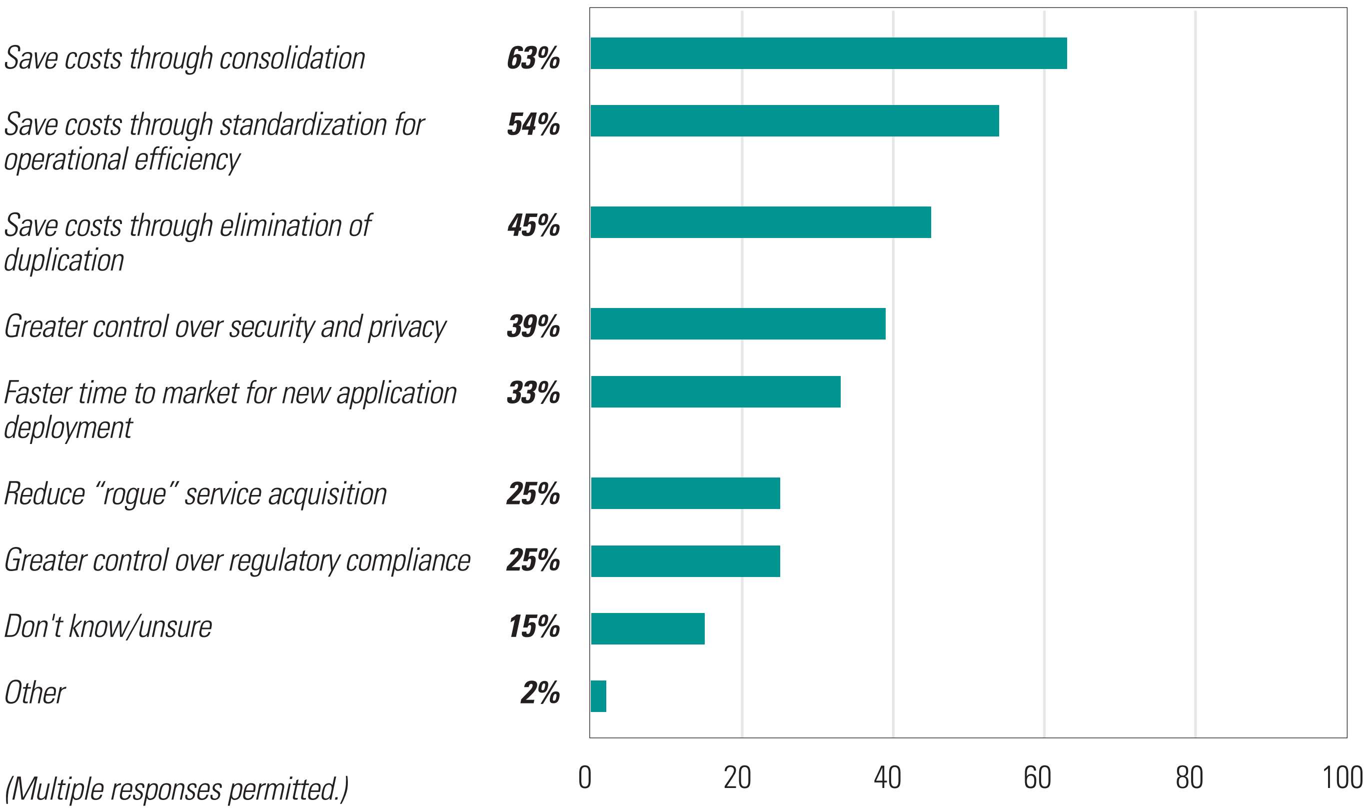
## Figure 21: Private Cloud Business Benefits

*(Among companies employing or considering private clouds)*




*(Multiple responses permitted.)*

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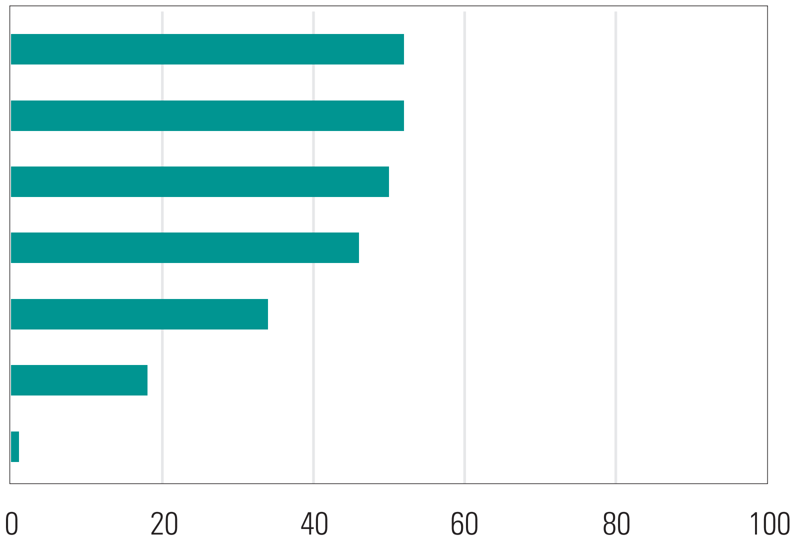
## Figure 22: Private Cloud Technical Benefits

*(Among companies employing or considering private clouds)*

| | |
|---|---|
| *Better availability* | ***52%*** |
| *Greater scalability* | ***52%*** |
| *Faster response to dynamic workloads* | ***50%*** |
| *Improved performance* | ***46%*** |
| *Better security technology* | ***34%*** |
| *Don't know/unsure* | ***18%*** |
| *Other* | ***1%*** |




*(Multiple responses permitted.)*

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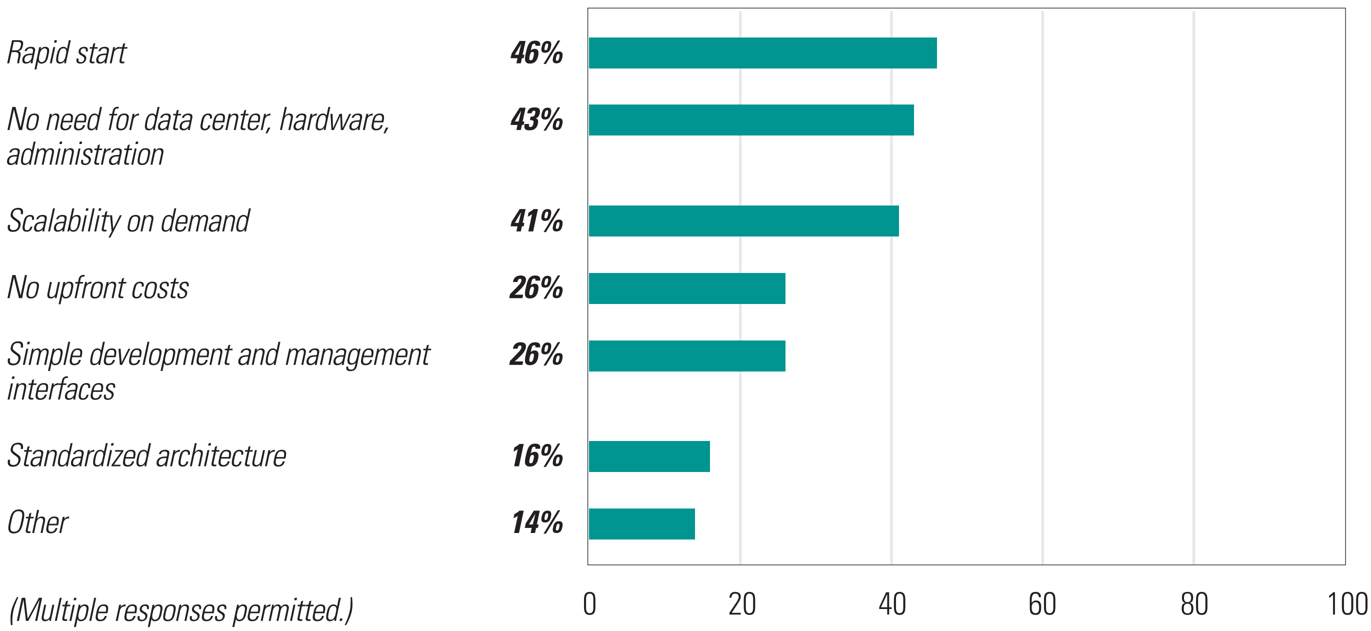
## Figure 23: Public Cloud Business Benefits

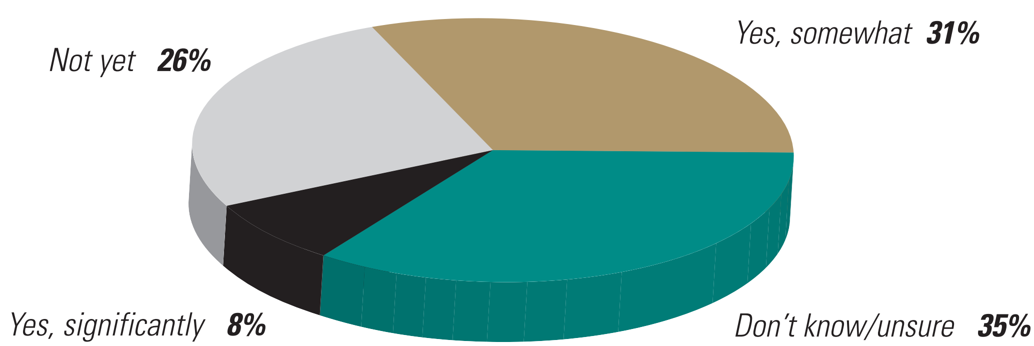
*(Among companies employing or considering public cloud services)*




*(Multiple responses permitted.)*

## Figure 24: Realized Public Cloud Benefits?

*(Among companies employing or considering public cloud services)*

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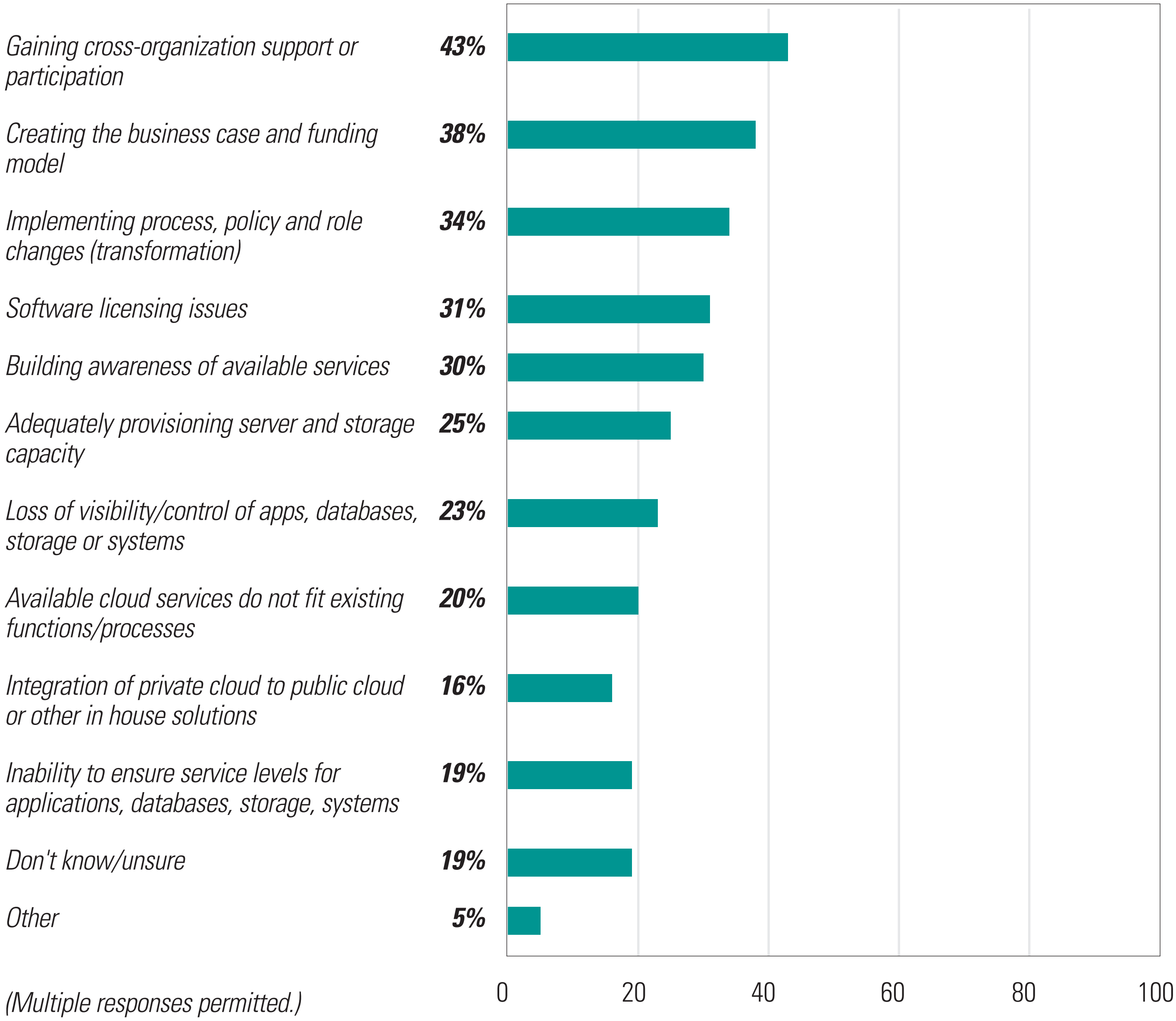
## Figure 25: Private Cloud Challenges

*(Among companies employing or considering private clouds)*

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## Figure 26: Top Five Private Cloud Challenges—2010 to 2011

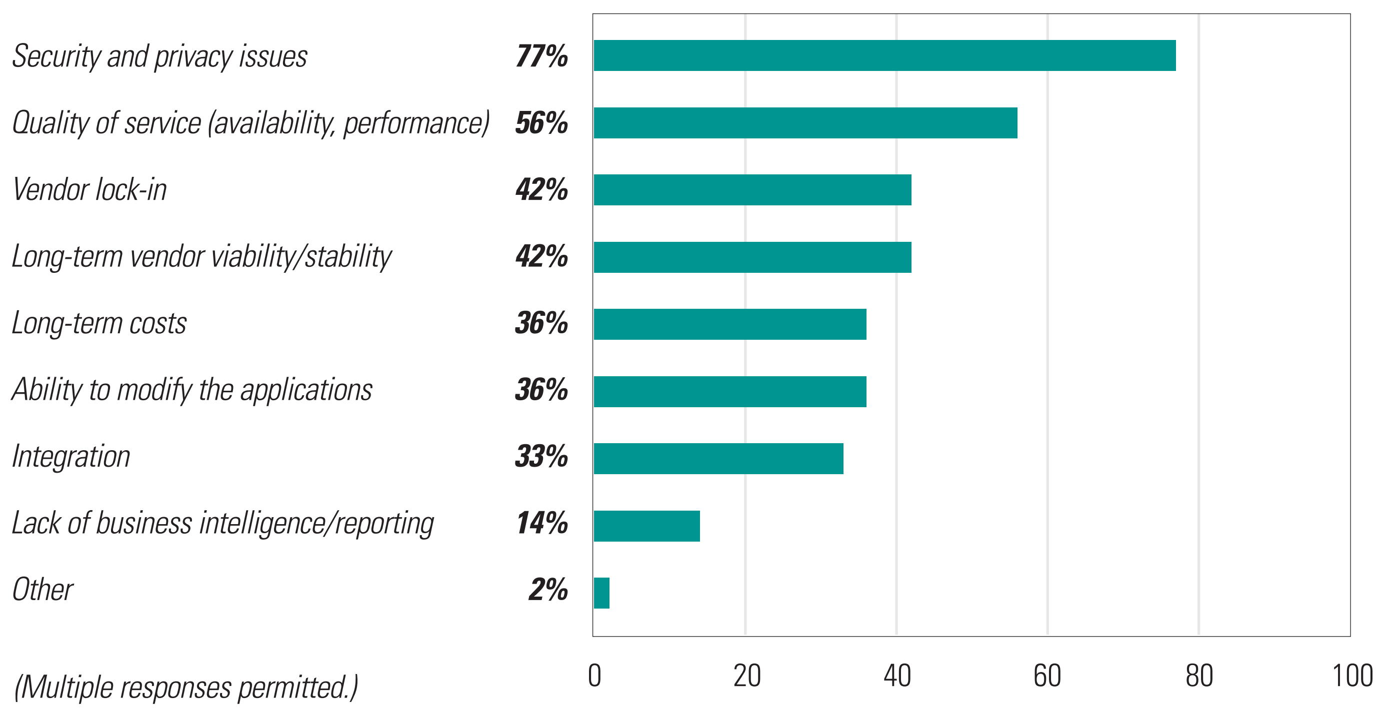
*(Among companies employing or considering private clouds)*

| | 2010 | 2011 |
|---|---|---|
| *Gaining cross-organization support or participation* | ***34%*** | ***43%*** |
| *Creating the business case and funding model* | ***32%*** | ***38%*** |
| *Building awareness of available services* | ***32%*** | ***30%*** |
| *Available cloud services do not fit existing functions/processes* | ***16%*** | ***20%*** |
| *Adequately provisioning server and storage capacity* | ***37%*** | ***25%*** |

*(Multiple responses permitted.)*

## Figure 27: Public Cloud Challenges

*(Among companies employing or considering public cloud services)*

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## Figure 28: Changes in Cloud Budgets

*(Among companies employing or considering private and public clouds deployments)*

| | Private | Public |
|---|---|---|
| Increased over last year | 35% | 20% |
| Same as last year | 19% | 25% |
| Decreased from last year | 2% | 3% |
| Don't know/unsure | 44% | 52% |

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## IOUG RECOMMENDS

Cloud computing offers enterprises opportunities for greater speed, flexibility and cost savings. Cloud computing is a transformation that is now well underway in many organizations. IOUG recommends the following approaches to adopt cloud computing:

- **Evaluate public and private cloud options for each application:** Each application has characteristics and requirements which determine whether it is suited for public clouds, private clouds, or traditional architectures. Organizations should select the best approach for each application instead of a blanket approach for all applications
- **Assess the strategic as well as tactical value of cloud services:** Cloud computing can deliver not only short-term cost savings, but also greater business agility and faster innovation. Leveraging cloud services may free up staff and resources to focus on projects or initiatives that are of higher strategic value to the business.
- **Get business buy-in and support:** Cloud solutions only deliver value if they have the support and input of the business. Build out a cloud infrastructure incrementally, starting with smaller or pilot projects that deliver quick wins that will generate enthusiasm from the rest of the business.
- **Adopt a funding model for cloud services:** Cloud service adoption may be coming out of individual departmental budgets, perhaps even on an under-the-radar basis. Private clouds are most efficient when shared across multiple departments, divisions and subsidiaries. An effective cloud strategy should be funded at the enterprise level.

**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.

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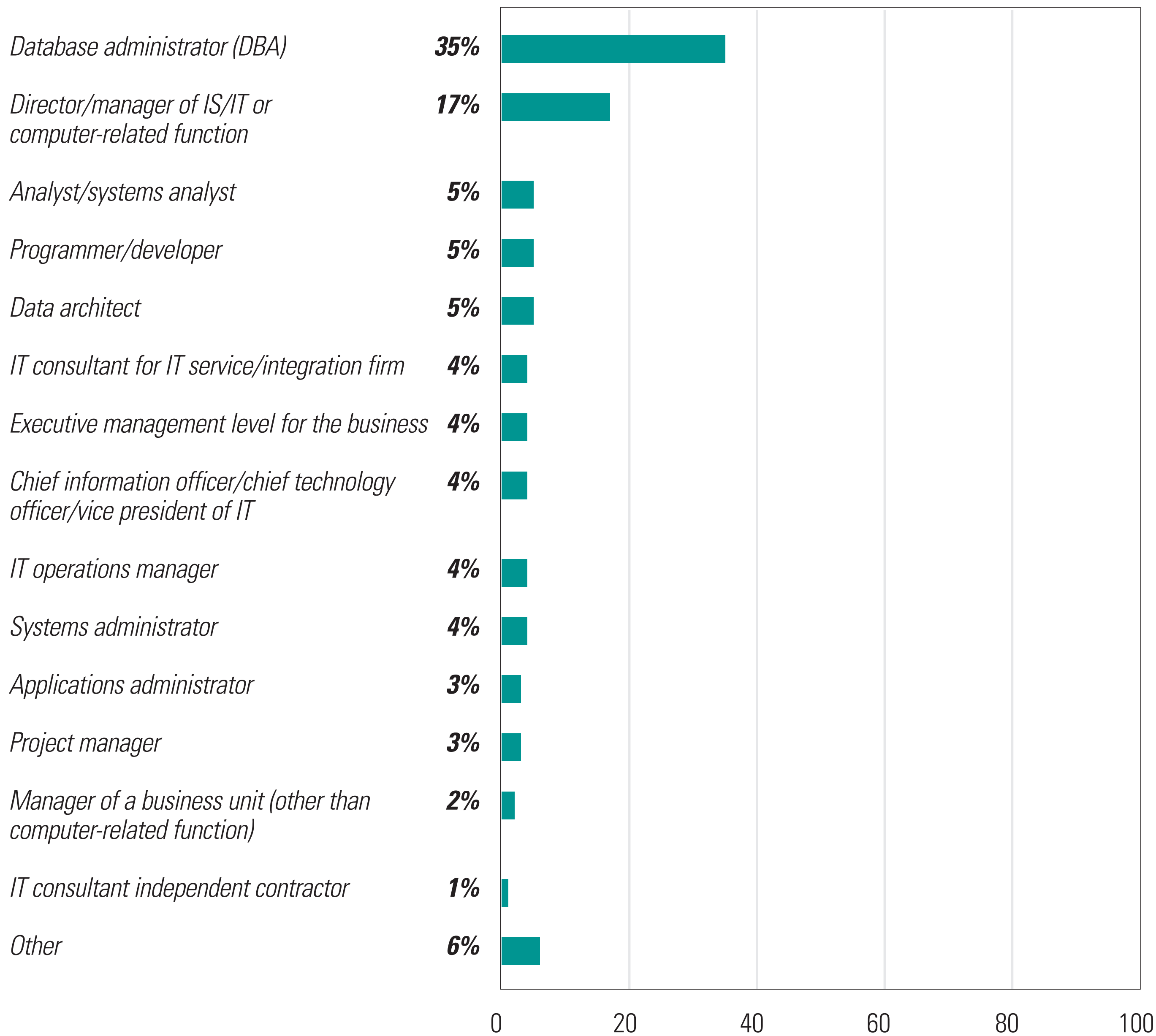
## DEMOGRAPHICS

# Figure 29: Respondents' Primary Job Titles

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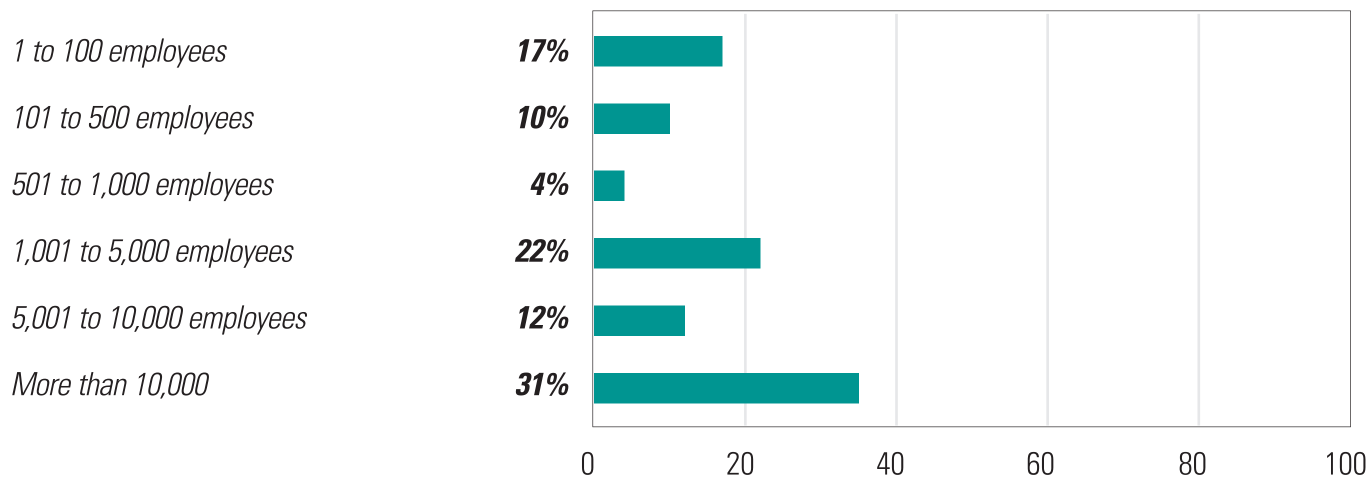
## Figure 30: Respondents' Organizations—By Number of Employees

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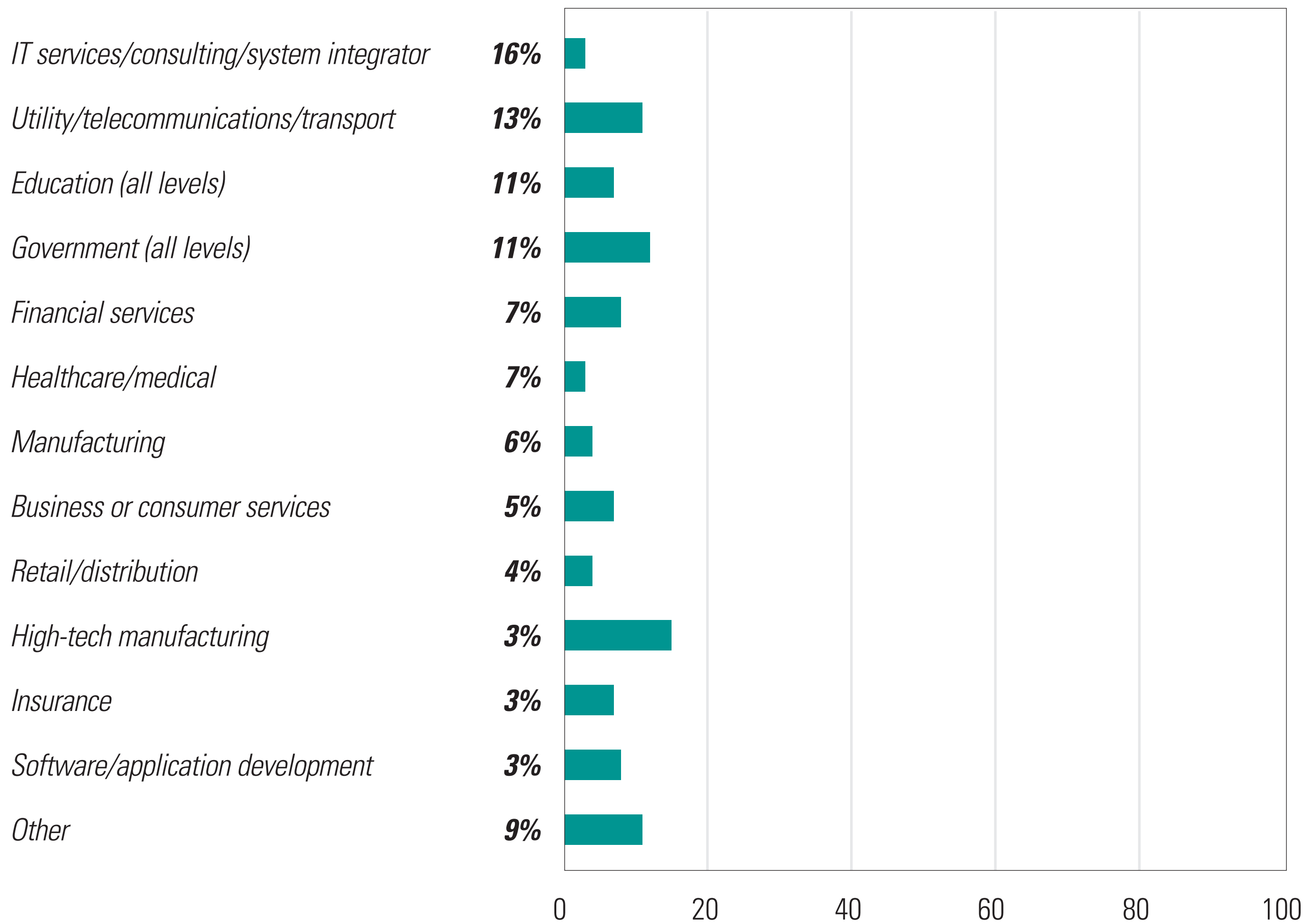
## Figure 31: Respondents' Industry Groups

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