THE NEW DATA MANAGEMENT LANDSCAPE : 2018 IOUG SPECIAL REPORT ON DATA MANAGEMENT TRENDS

By Joseph McKendrick, Research Analyst
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EXECUTIVE SUMMARY

It's well known that many enterprises are turning to cloud for a range of functions and capabilities, not to mention potential cost savings. But the impact on data management itself is profound, and is already starting to be felt. Data managers and professionals indicate they are taking on more advisory and business-centric roles as more administrative functions are handled by cloud providers. At the same time, enterprises need to be proactive in monitoring and understanding how their information is being managed in the cloud.

In December 2017, Unisphere Research fielded a study among the members of the Independent Oracle Users Group to examine the key challenges, priorities, and solutions associated with cloud computing. This study, sponsored by Oracle, includes the views and experiences of 229 IT decision makers, representing a broad sample of company types and sizes.

More than half are from enterprises with at least 5,000 employees. Industries heavily represented in our survey include technology, financial services, government and healthcare. A demographic overview is available at the end of the report.

The survey found that cloud computing is changing the mission and purpose of data management. Within a few years, most data management functions will be in the cloud, in one way or another.

The key findings of the study include the following:

- Cloud is creating an important shift in data managers' responsibilities and career prospects. A majority expect to spend a significant amount of time in the cloud in the near future. Cloud adoption also means managers will be relieved of many of the more heads-down technical tasks associated with database management—freeing them to work more closely with the business, assuming the role of advisor, teacher and evangelist. At the same time, the onus remains on enterprises to assure the security and availability of their data assets.

- The cloud is now the new normal for managing and analyzing data. Starting with dev/test databases, data managers expect to see most of their activity taking place in the cloud within a few years. Most Oracle Database environments are connected, in one way or another, to the cloud.

- The "killer app" for cloud is providing administrative support, as well as a place to back up data and assure business continuity. Data managers appreciate the almost unlimited scalability cloud services offer. Still, there are certain applications that may never make it to the cloud.

- What keeps data managers awake at night about their cloud arrangements? Security, privacy and potentially runaway costs are the most top of mind. Public cloud arrangements are fluid, and two in five have already terminated or scaled back services from a provider, for a myriad of reasons.

On the following pages are the detailed results and analysis of this effort.

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CHANGING ROLES

Cloud is creating an important shift in data managers' responsibilities and career prospects. A majority expect to spend a significant amount of time in the cloud in the near future. Cloud adoption also means managers will be relieved of many of the more heads-down technical tasks associated with database management—freeing them to work more closely with the business, assuming the role of advisor, teacher and evangelist. At the same time, the onus remains on enterprises to assure the security and availability of their data assets.

Not only are data and database resources going to the cloud, but staff time as well. While only 14 percent of data professionals report their own time now involves working with cloud-based resources, this percentage will more than triple over the next 24 months. By that time, 54 percent project, they will be spending a significant share of their time working directly with the cloud. (See Figure 1.)

Cloud is changing respondents' or colleagues' roles within their enterprises. A majority, 55 percent, see such changes occurring to some extent. Some changes may involve moving away from heads-down administrative or coding work to higher-level tasks. For example, corporate management is likely to look to data managers for advice and expertise on technology choices from the cloud. (See Figure 2.)

Accordingly, a number of administrative roles are being reduced or de-emphasized as a result of the increasing cloudification of data environments, the survey shows. Perhaps the greatest changes are occurring with functions related to storing and retrieving secondary data sites. Among the database tasks being reduced or eliminated for respondents and their colleagues as a direct result of moving functions to the cloud, backup/restore leads at 39 percent, followed by disaster planning and business continuity, cited by 34 percent. Another 29 percent note that cloud is eliminating the need to worry about keeping software up to date, since this is all automatic within the cloud. (See Figure 3.)

As mentioned, the rise of cloud infrastructures are shifting the roles of data managers from technical to business-focused activities. Among the tasks being increased for respondents and their colleagues as a direct result of moving functions to the cloud include direct consulting to business executives (cited by 40 percent) and overseeing data architecture (35 percent). In addition, the rise of cloudification means a greater emphasis—and more possibilities—for activities around data analytics, which means greater engagement with initiatives such as predictive analytics, artificial intelligence and machine learning. (See Figure 4.)

While cloud means a reduction in straightforward administrative tasks for many enterprises, it doesn't necessarily means the keys are being handed over to a third party. In most cases, cited by close to three-fourths, respondents expect their own IT departments to oversee or even provide cloud services. About 37 percent also will be turning some functions over to cloud providers, and 24 percent say it's likely to take the form of service providers or outsourcers. (See Figure 5.)

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Figure 1: Percent of Data Managers Spending Significant Portion of Time Working with Cloud-Based Resources, Today and in Two Years (More than 25% of Daily Activities)

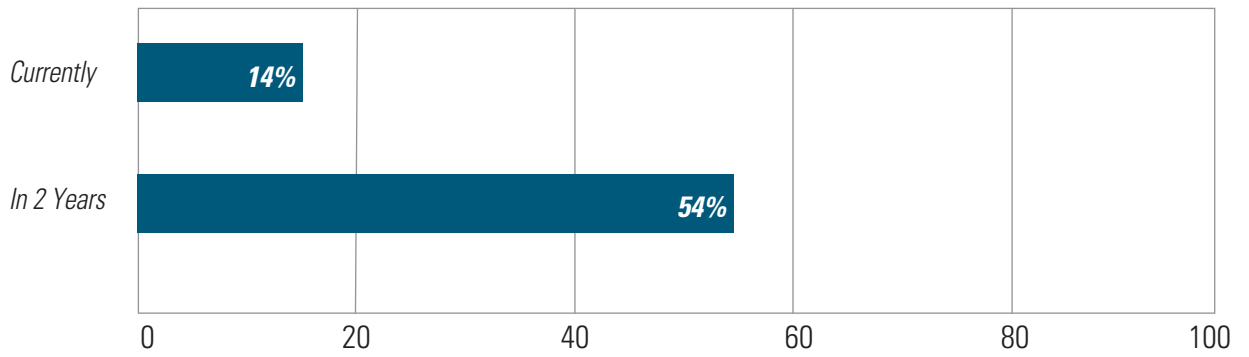

Figure 2: Is Cloud Changing Roles Within Enterprise?

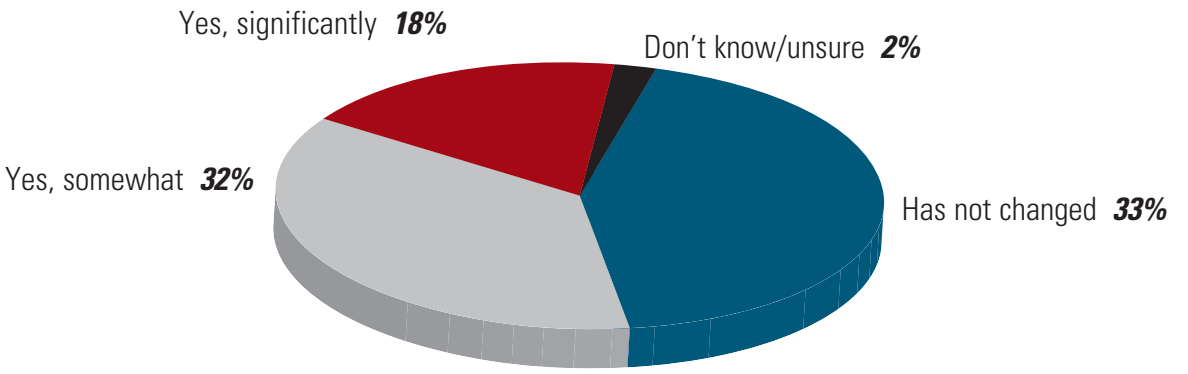

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Figure 3: Database Tasks Reduced or Eliminated as a Direct Result of Moving Functions to the Cloud

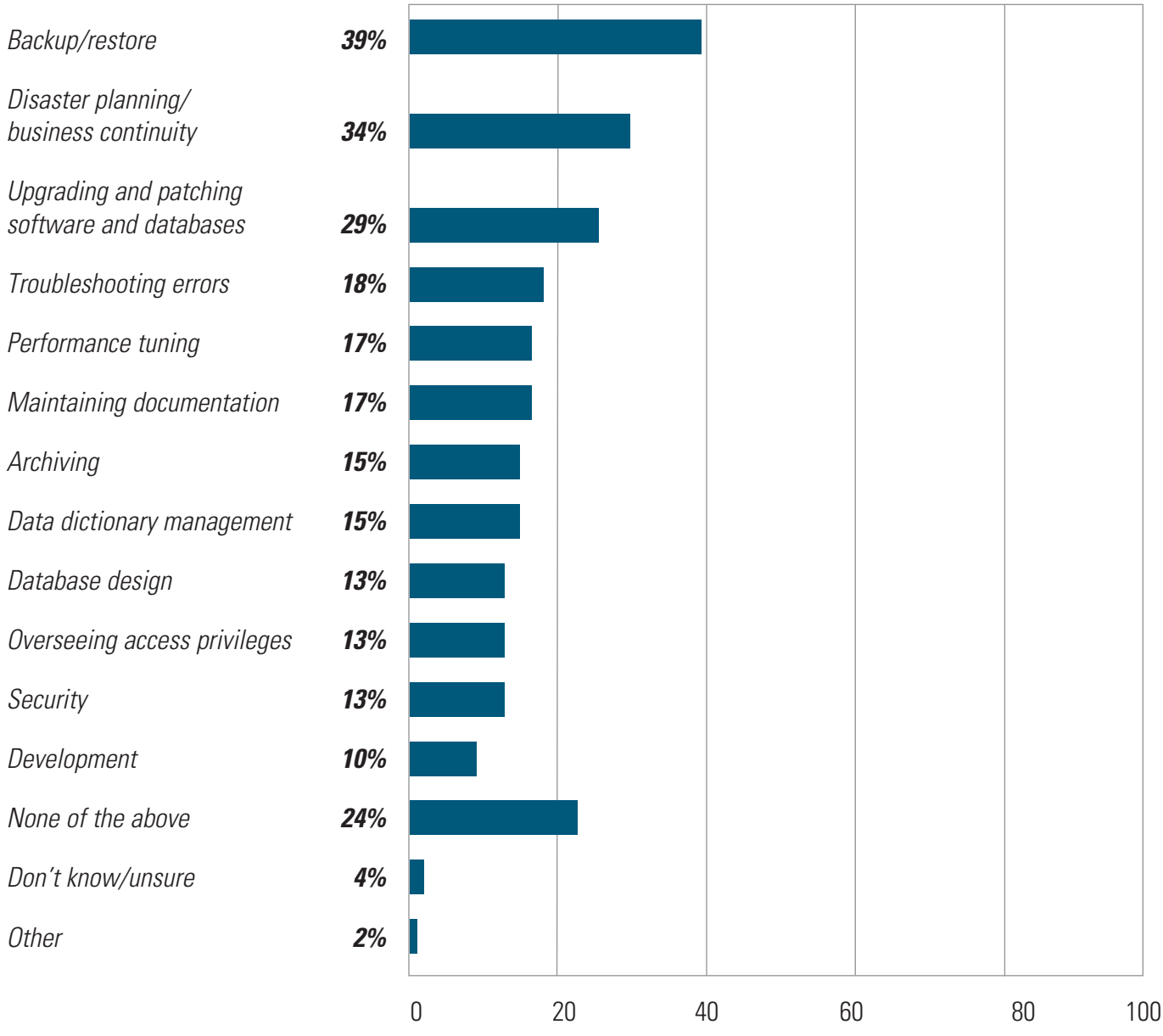

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Figure 4: Tasks Increased As a Direct Result of Moving Functions to the Cloud

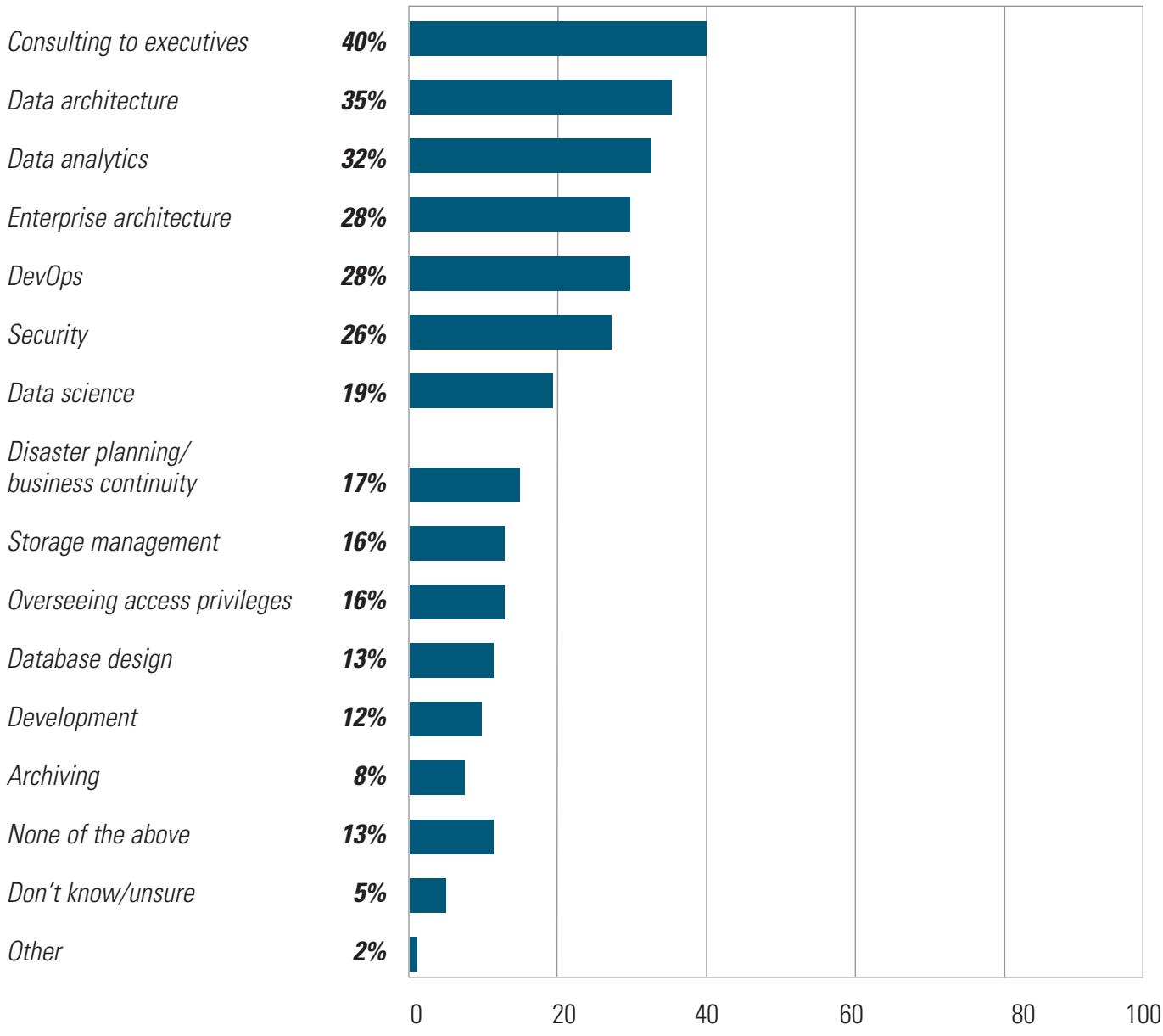

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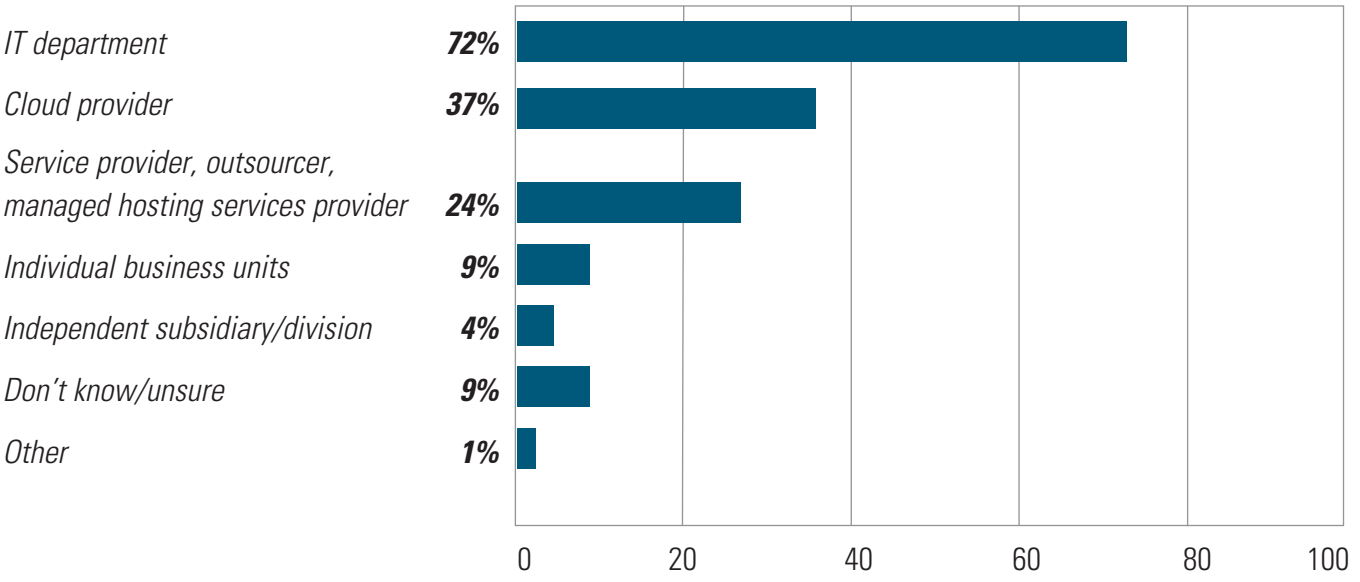
Figure 5: Who Manages and Provides Cloud Services?



Multiple responses allowed

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CLOUD IS THE FUTURE

The cloud is now the new normal for managing and analyzing data. Starting with dev/test databases, data managers expect to see most of their activity taking place in the cloud within a few years. Most Oracle Database environments are connected, in one way or another, to the cloud.

By a wide margin, data professionals see the future of database management driven by the cloud. Seventy-nine percent expect on-premises databases to be linked to cloud within the next two years, while another 70% foresee using cloud-based databases. (See Figure 6.) The percentage of enterprise core workloads (databases, applications) supported in the cloud will increase significantly over the next 24 months. Currently, 31% report that a majority of their workloads are cloud-borne, a percentage that will increase to 51% in two years. (See Figure 7.)

A majority of data professionals report that their Oracle databases are now cloud ready. When asked what parts of enterprise data environments are now accessible through cloud-based interfaces, a majority, 57 percent, said Oracle databases are now accessible via the cloud. (See Figure 8.)

Many types of database workloads are being moved or will soon be moved to the cloud, versus staying on premises. Most prevalent is dev/test databases, in which development or QA teams will be able to quickly and cheaply spin up cloud instances to build and test their database applications, without taxing or touching their main production systems. (See Figure 9.)

To a great extent, organizations have adopted cloud computing (private, hybrid or public) to develop and/or manage enterprise applications and data. A sizeable segment, 41%, report at least some, if not most, of their mission-critical applications or dev/test environments are run within cloud settings. (See Figure 10.)

Hybrid cloud is the arrangement of choice. Many organizations are most likely to be working with combined public and private cloud arrangements for their applications and systems. A majority, 54%, report they are working with hybrid cloud environments, while 40 percent report they also have private cloud settings. (See Figure 11.)

In recent years, there has been a notable shift in perceptions about cloud security—many business and IT leaders now see cloud providers as being able to offer greater levels of security than within their own data centers. The most important quality data professionals seek from the cloud is data security, followed by provisioning of business continuity and disaster recovery capabilities. (See Figure 12.)

There are a myriad of reasons why enterprises are now attracted to cloud. Cost control is the main reason, cited by 54 percent. Another 41 percent, however, see the ability to access new types of applications. More than one-third are engaged in efforts to move their legacy applications into cloud environments. (See Figure 13.)

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Figure 6: Data Managers' Expectations for Managing Databases Within, Or Link To, Public Cloud Environments within the Next 2 Years

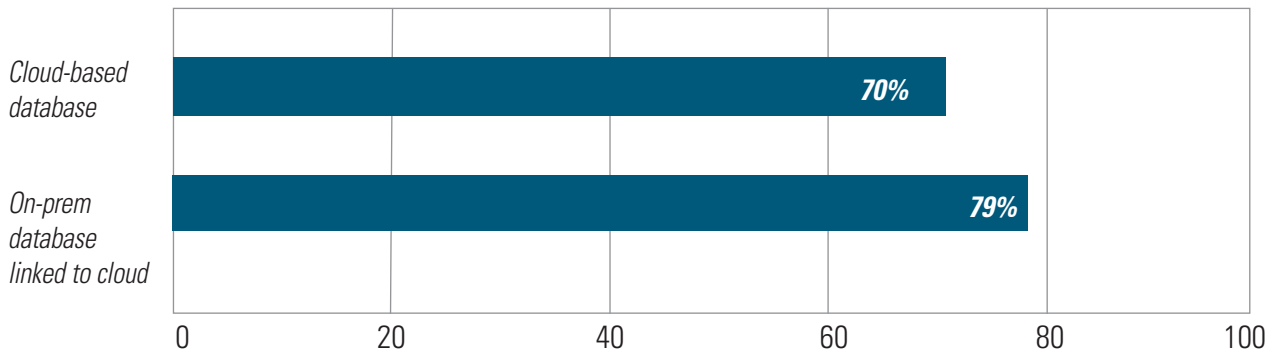

Figure 7: Enterprises with Significant Percentage of Core Workloads (Databases, Applications) Supported In the Cloud, Now and Within 2 Years (Significant percentage = >25%)

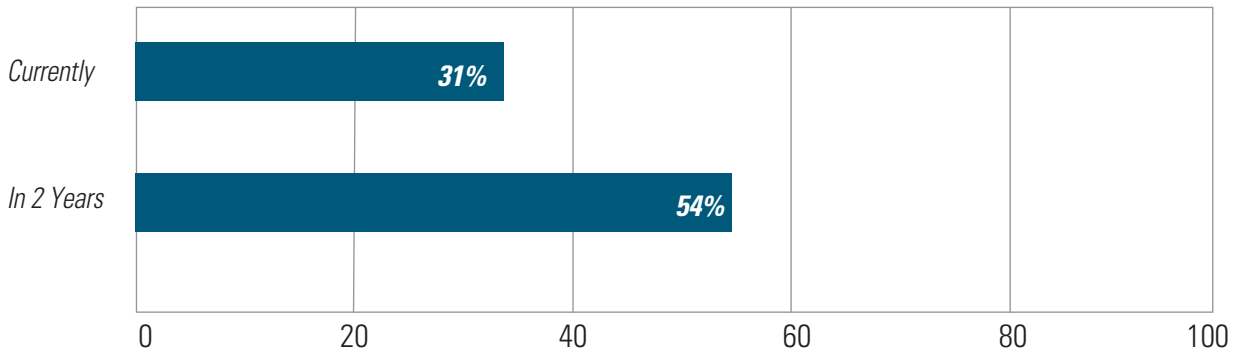

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Figure 8: Parts of Data Environments Now Accessible Through Cloud-Based Interfaces

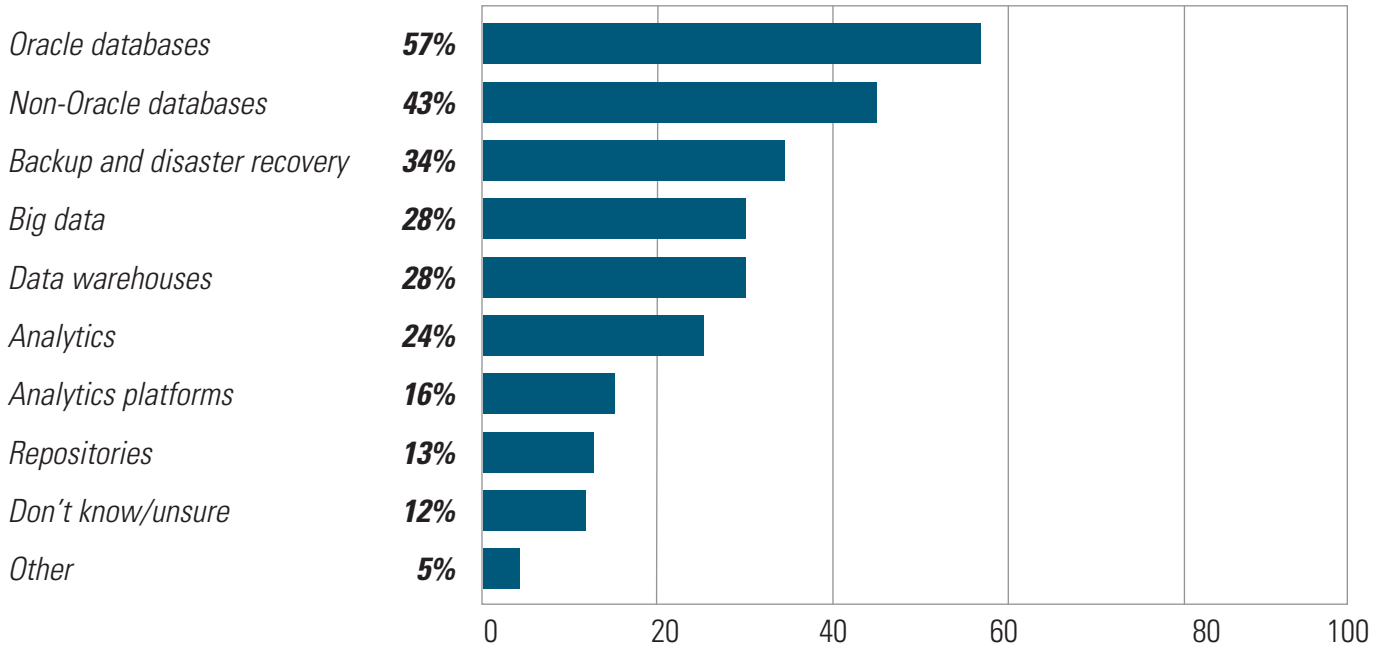

Figure 9: Types of Database Workloads Being Moved To the Cloud, Versus Staying On Premises

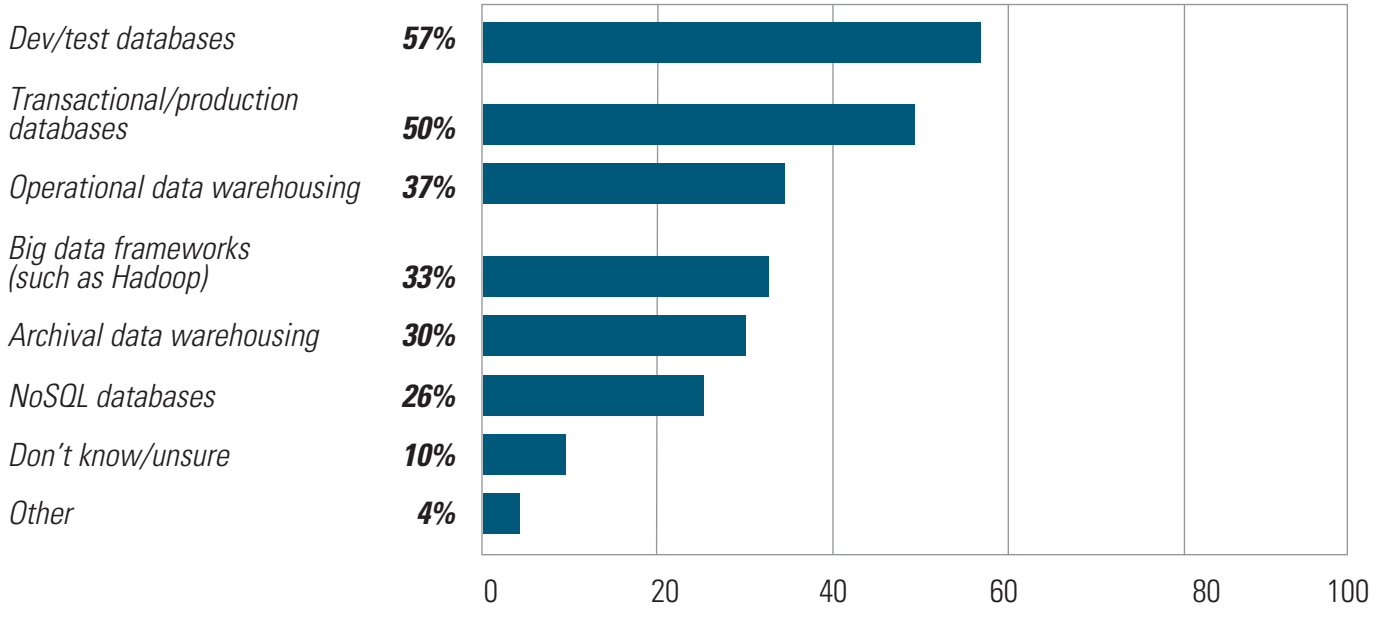

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Figure 10: Extent of Cloud Computing (Private, Hybrid or Public) Adoption to Develop and/or Manage Enterprise Applications and Data

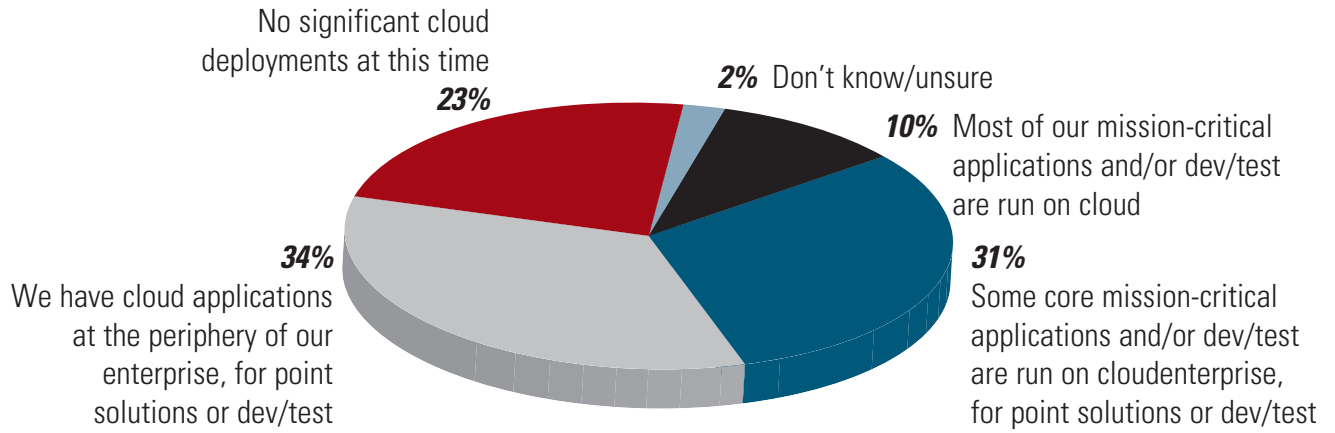

Figure 11: Types of Enterprise Clouds Employed

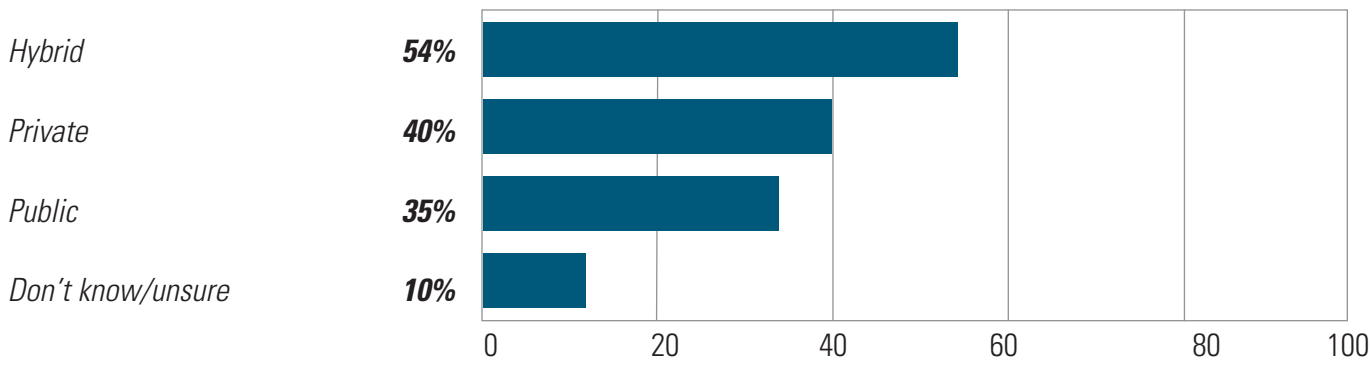

Figure 12: Most Important Qualities Sought in Cloud *(Rating 4-5 on a scale of 1-5)*

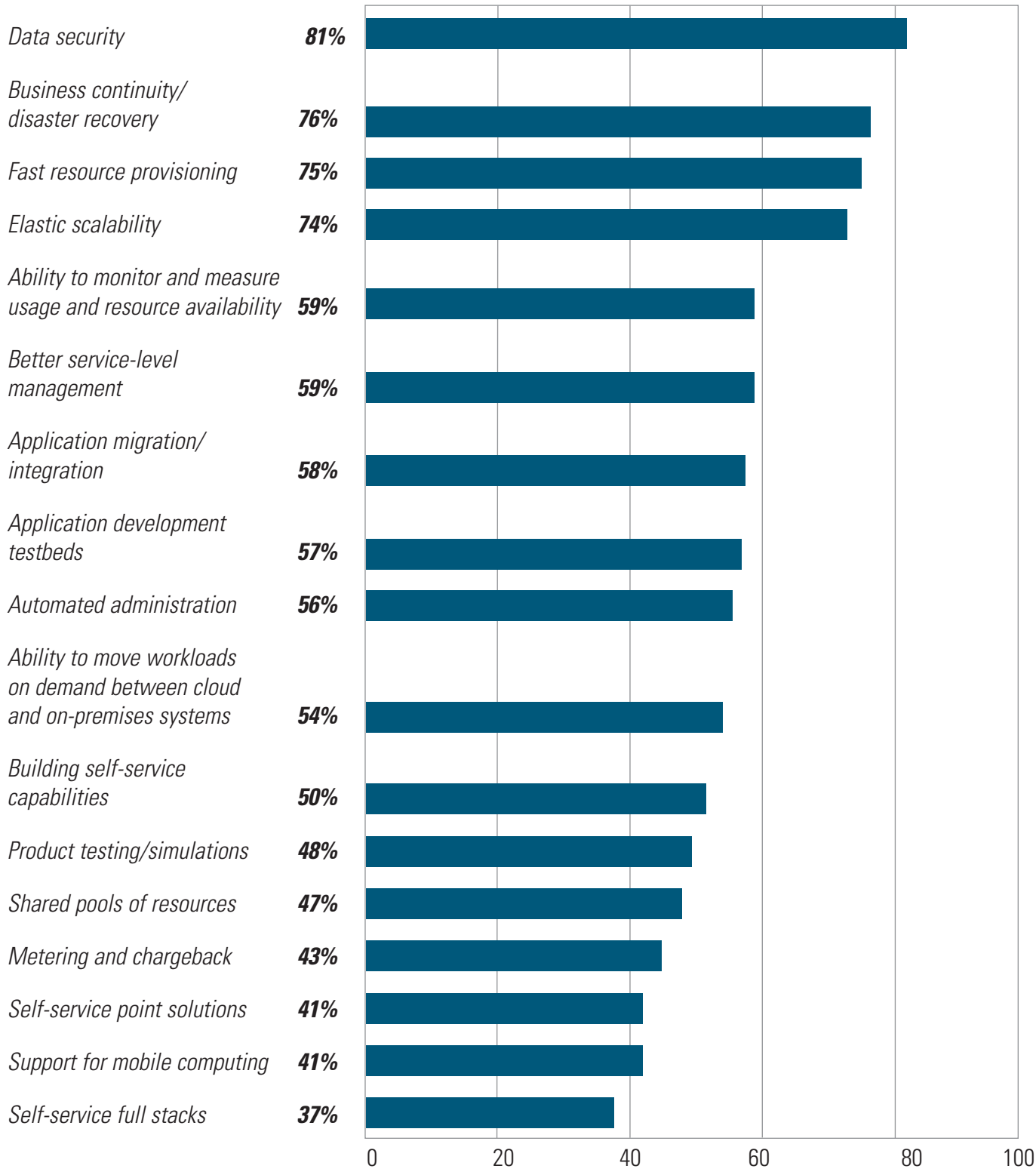

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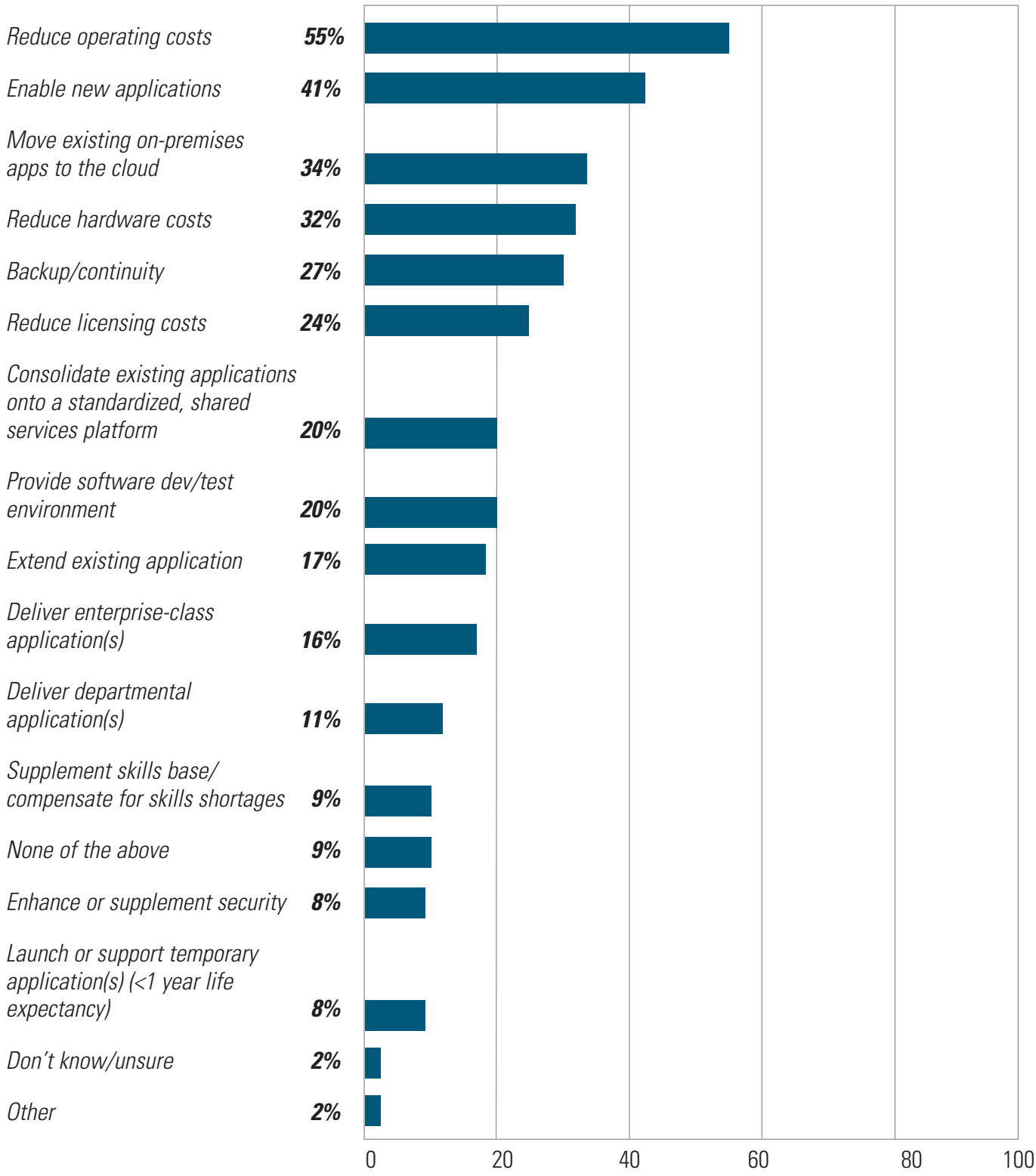
Figure 13: Reasons for Using Cloud Services



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APPLICATIONS IN THE CLOUD

The "killer app" for cloud is providing administrative support, as well as a place to back up data and assure business continuity. Data managers appreciate the almost unlimited scalability cloud services offer. Still, there are certain applications that may never make it to the cloud.

At this time, many cloud applications or functions going to the cloud tend to be those geared to overseeing technology or application management. About half of data managers say they are using public cloud services for IT-centric services to assist in data center management—security, storage, backup and load management. A similar number are also relying on public cloud for collaboration and communication capabilities, such as email or webcasting. One-third say they have core, mission-critical applications being managed through public cloud sites. (See Figure 14.)

What do data managers find the most appealing in their public cloud arrangements? The ability to grow their datasets—and their businesses—and almost instantly being able to provision all the processing power and storage space they need, is a powerful draw. Survey respondents express the highest levels of satisfaction with the scalability their public cloud providers offer. Thirty-eight percent assign the highest rankings to this aspect of service. The ease of adding more capacity is also a source of cloud customer satisfaction, indicated by 29 percent. (See Figure 15.)

There are applications or functions that cannot be moved to a public cloud at this time. These may vary company to company, depending on their infrastructure and the way their systems are built to capture business logic and competitive differentiation. Accordingly, a sizeable segment of respondents, 43 percent, report that they are unlikely to be able to move their customized applications to a public cloud at this time. Close to one-third add specialized departmental applications to this list. (See Figure 16.)

For those organizations that have applications or functions that cannot be hosted on the public cloud, the reasons are straightforward—the data involved either is highly regulated or highly sensitive. Seven in 10 cite compliance mandates that may govern how they handle data, while a majority cite jurisdictional concerns. (See Figure 17.)

Figure 14: Types of Applications or Functions Employed Through Public Cloud Services

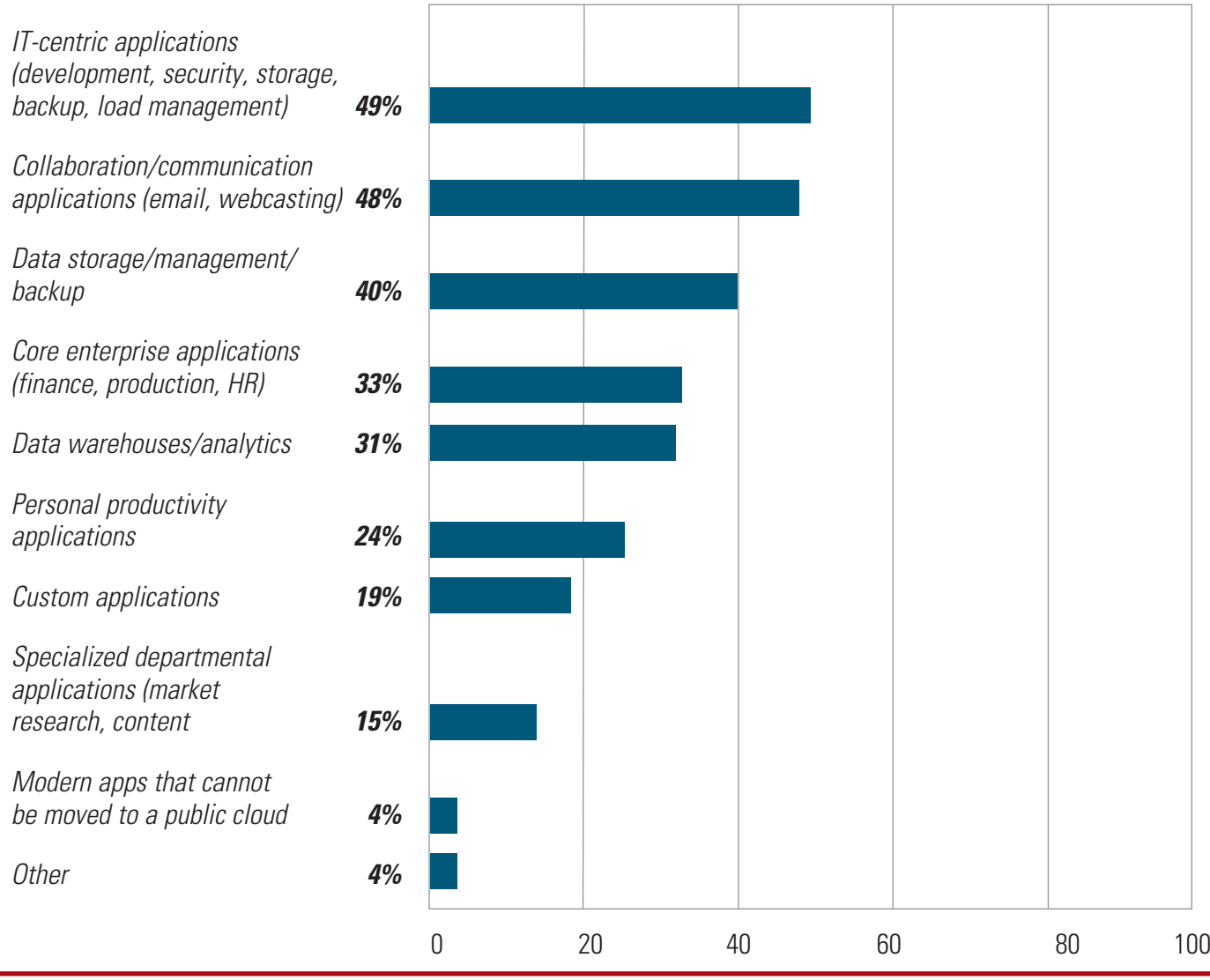

Figure 14: Reasons for Using Cloud Services

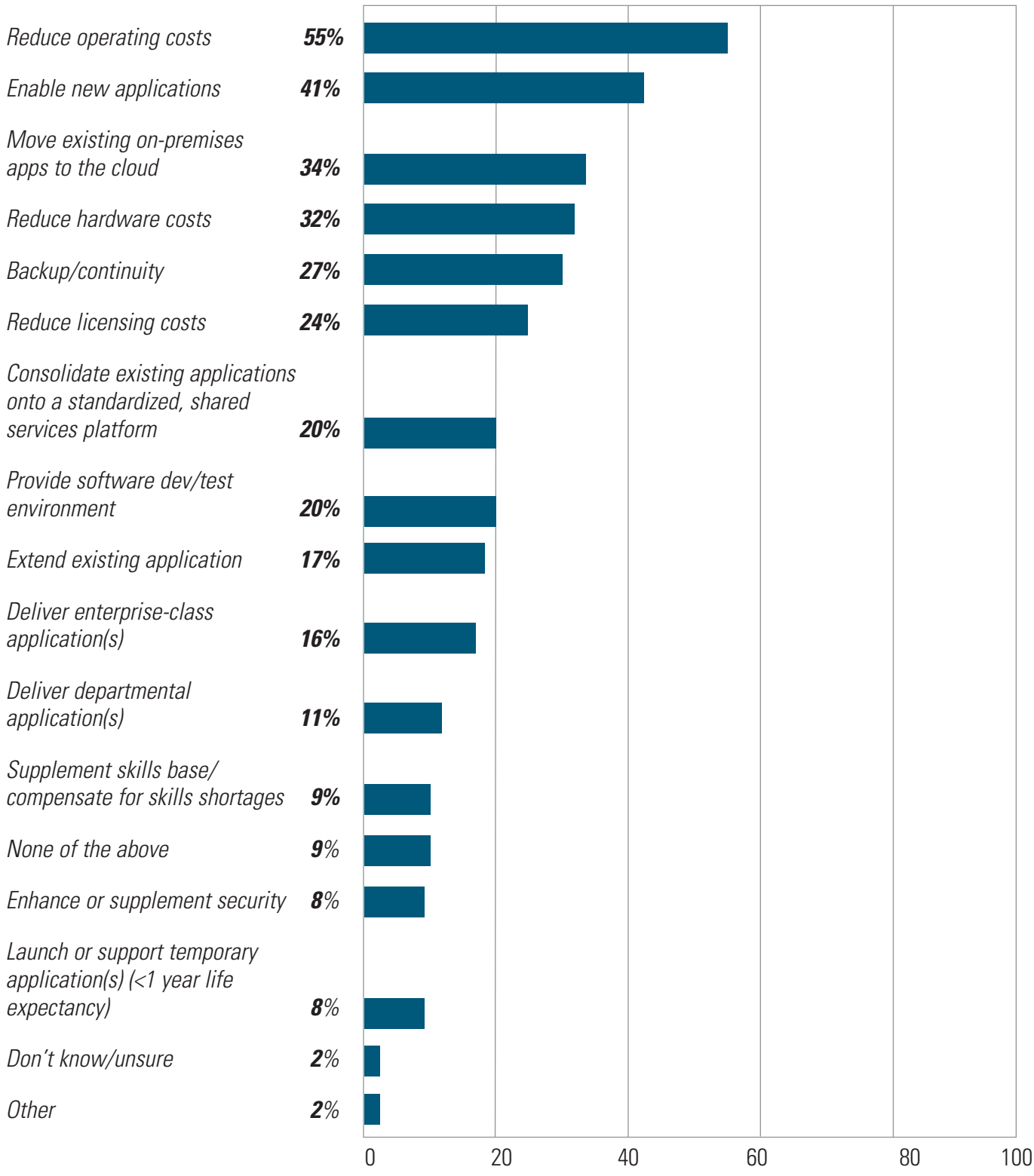

Figure 15: Most Positive Public Cloud Experiences *(Rating 9-10, highest on scale of 1-10)*

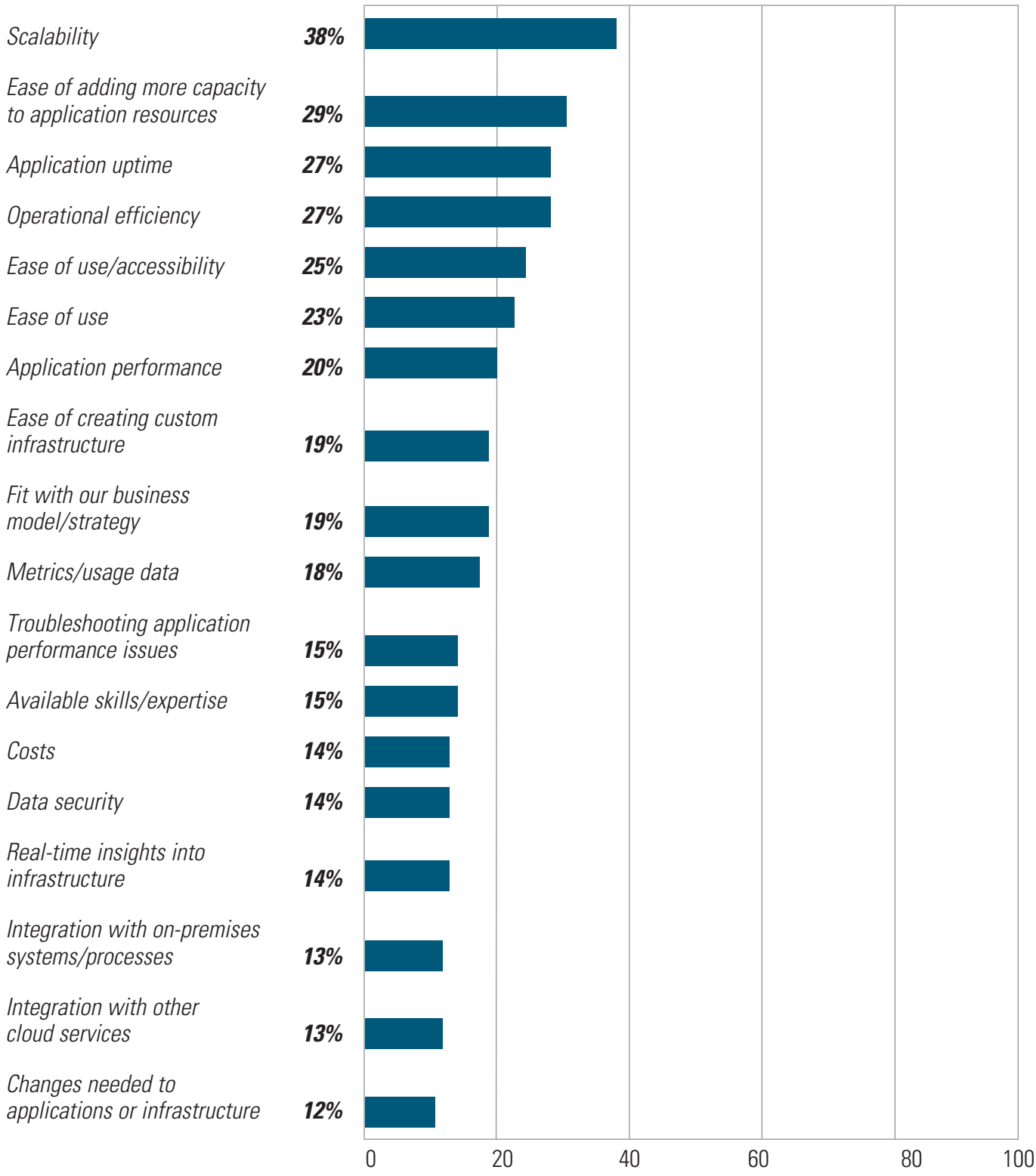

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Figure 16: Applications or Functions That Cannot Be Moved To Public Cloud at This Time

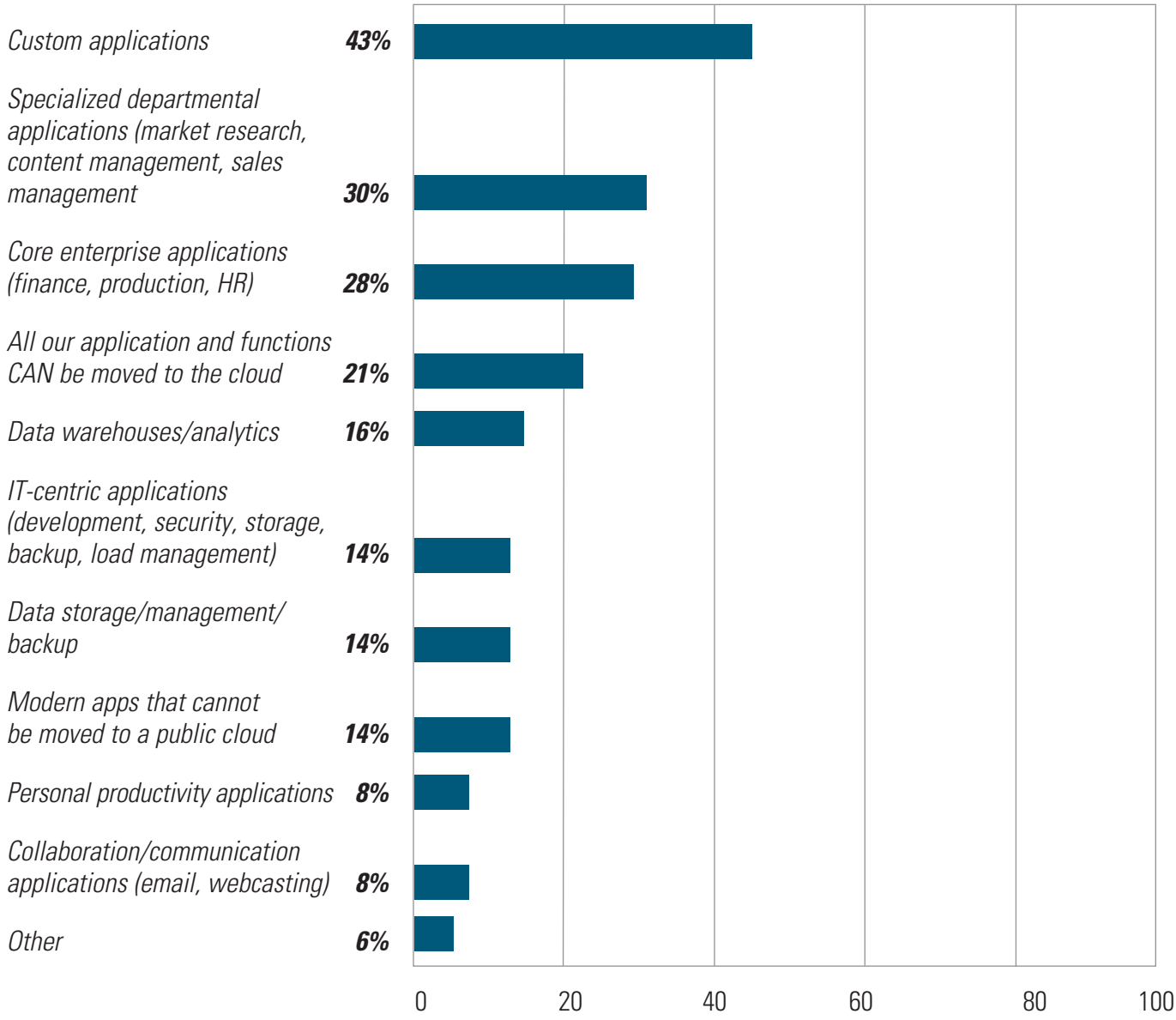

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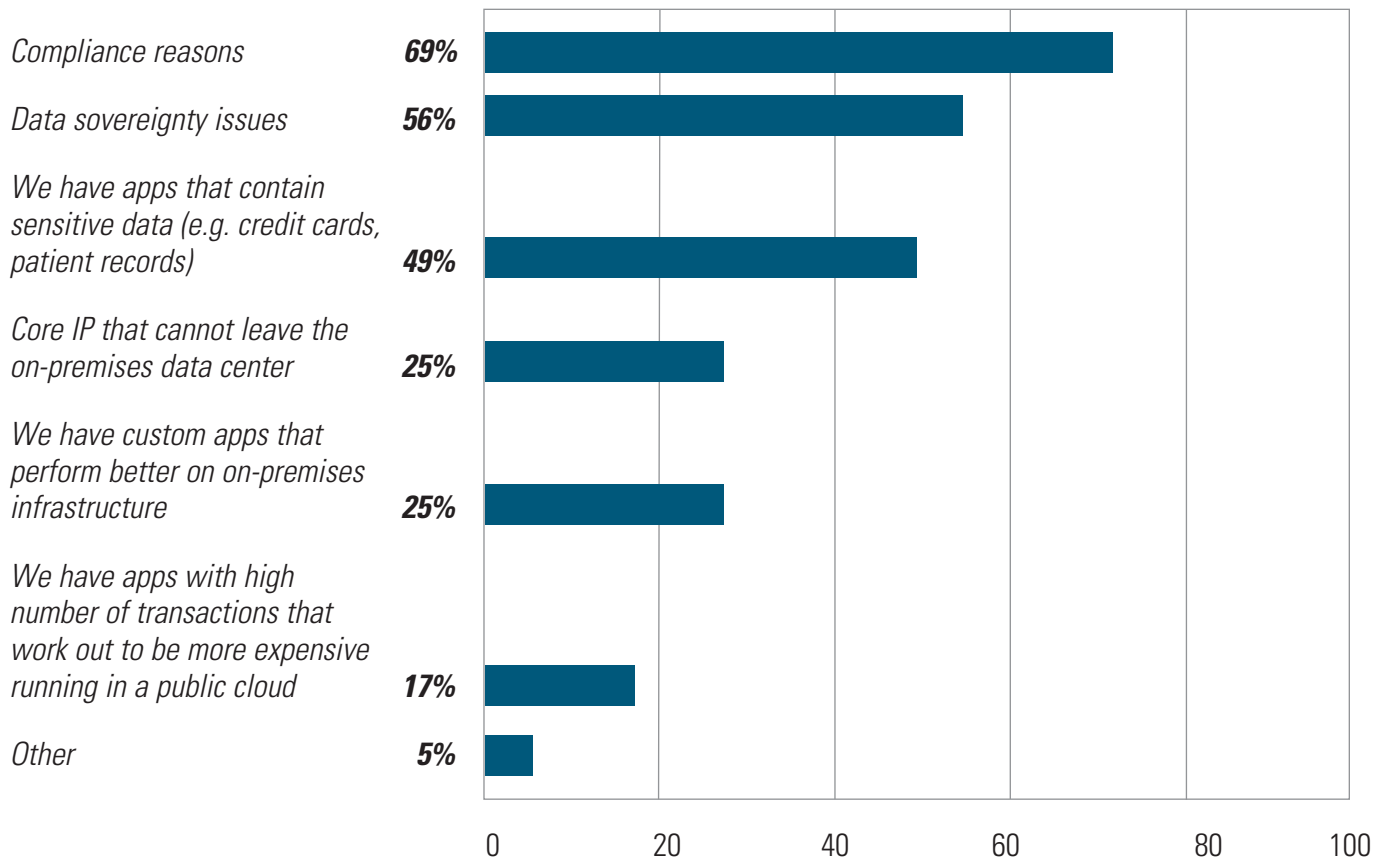
Figure 17: Reasons Applications or Functions Cannot Be Hosted On Public Cloud



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CLOUD CHALLENGES

What keeps data managers awake at night about their cloud arrangements? Security, privacy and potentially runaway costs are the most top of mind. Public cloud arrangements are fluid, and two in five have already terminated or scaled back services from a provider, for a myriad of reasons.

As shown earlier in this survey report, data security is the top quality sought in cloud engagements. While cloud providers often provide more robust and state-of-the-art security than their in-house counterparts, it's important that cloud-consuming enterprises do their due diligence and stay focused on the degree of security their partners are delivering. Just as important as data security is having control over who manages data and takes responsibility for its availability. Cloud contracts may spell out that all data is returned within 30 days, but it's often challenging to move data quickly and efficiently between cloud providers or back in-house if a cloud contract ends. Half of the data managers in this survey express concern about ultimate ownership and responsibility. Related to data security and availability is privacy concerns—keeping data safe from exposure to unwarranted parties. Four in 10 data managers put this challenge on top of their list when considering cloud computing options, along with the ability to meet regulations, which often are crafted to address privacy concerns. (See Figure 18.)

Another set of concerns, voiced by three in 10 data managers, is potential runaway costs associated with cloud. Licensing for growing user bases and added functionality can incrementally increase costs beyond what was originally budgeted for the cloud engagement. In addition, given its distributed nature, many cloud users within their departments may be subscribing to services that are no longer being used, but still are being funded through subscriptions.

Cloud engagements, by their very nature, can be highly transitory—serving a particular need and serviced through monthly subscription payments. When the need is no longer there, the subscription can be terminated. A number of data managers report they have discontinued or scaled back use of one or more public cloud services. One in five professionals report they have scaled back or terminated a public cloud service over the past 24 months. (See Figure 19.)

When enterprises have ended their public cloud arrangement, what did they replace the public cloud service(s) with? Most moved over to another cloud arrangement. About one-third pulled their applications back in house. (See Figure 20.) Typically, not a wide range of applications were involved in the transfer, the survey also shows. When asked what percentage of enterprises' applications have enterprises moved back to on-premises data center from the public cloud over the last two years, seven in ten report no applications have been moved at all. (See Figure 21.)

What prompts enterprises to discontinue or scale back use of a public cloud service? The most prevalent reason is going to another cloud provider, cited by 27 percent. Another 18 percent may be doing business internationally, and thus had to make changes to accommodate data sovereignty mandates. (See Figure 22.)

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Figure 18: Challenges Seen With Cloud Computing

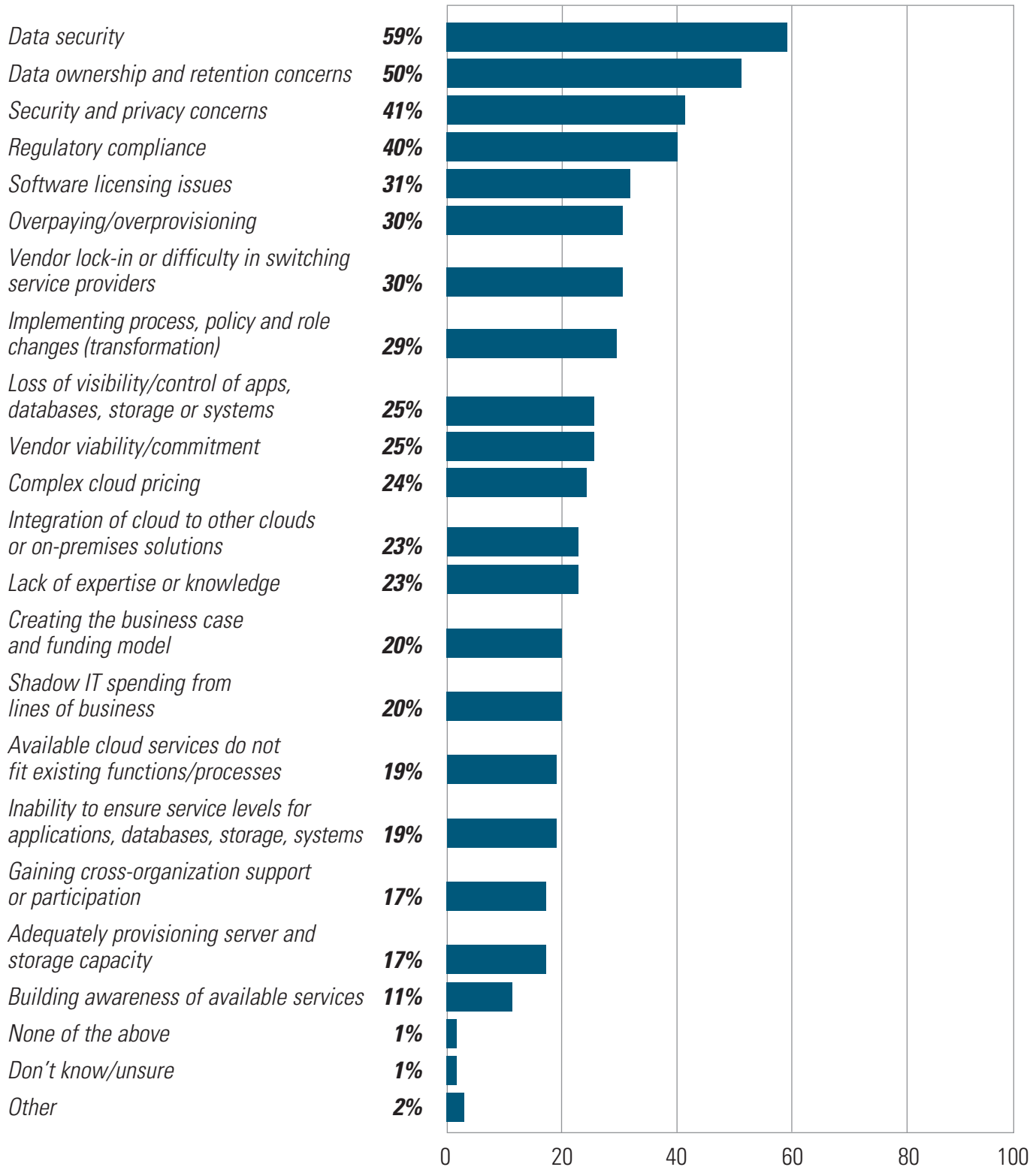

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Figure 19: Discontinued or Scaled Back Use of One or More Public Cloud Services within the Past 2 Years?

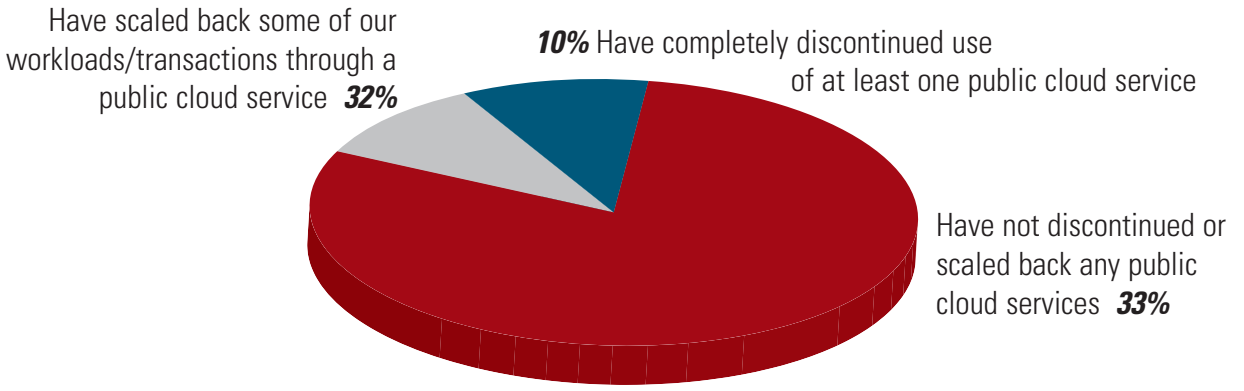


Figure 20: What Replaced Discontinued Public Cloud Service(s)

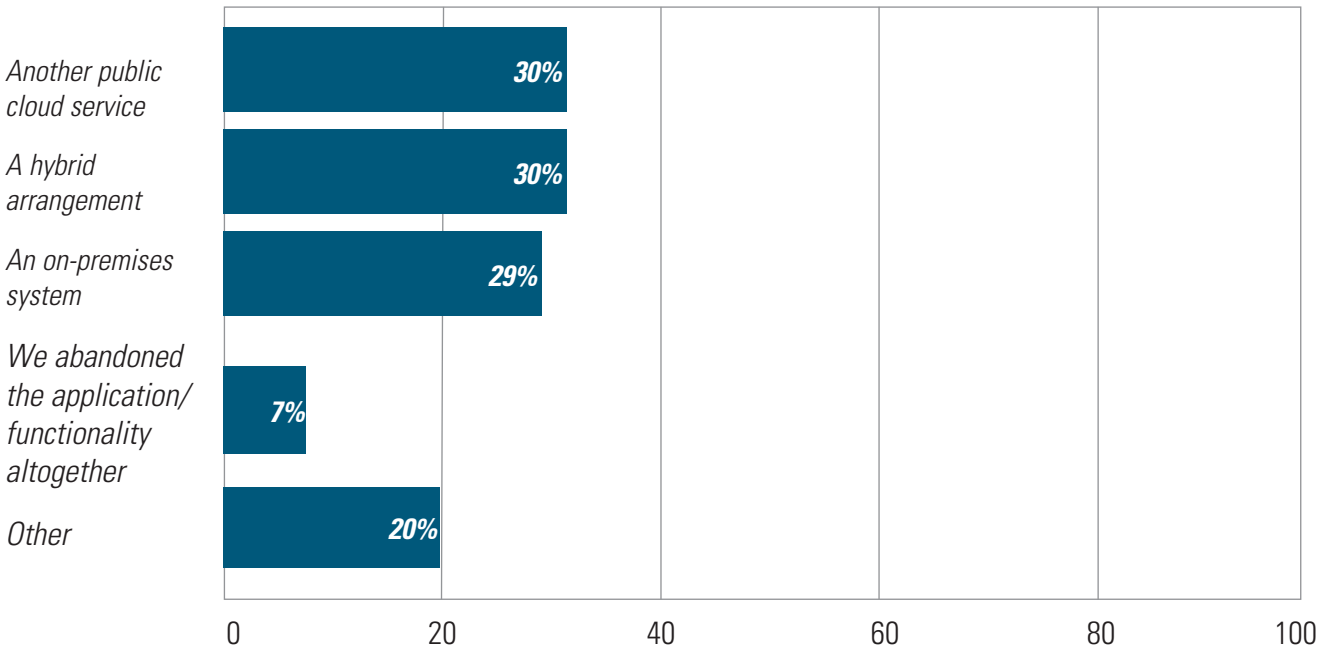


Figure 21: Percentage of Applications Moved Back To On-Premises Data Center from the Public Cloud over the Past 2 Years

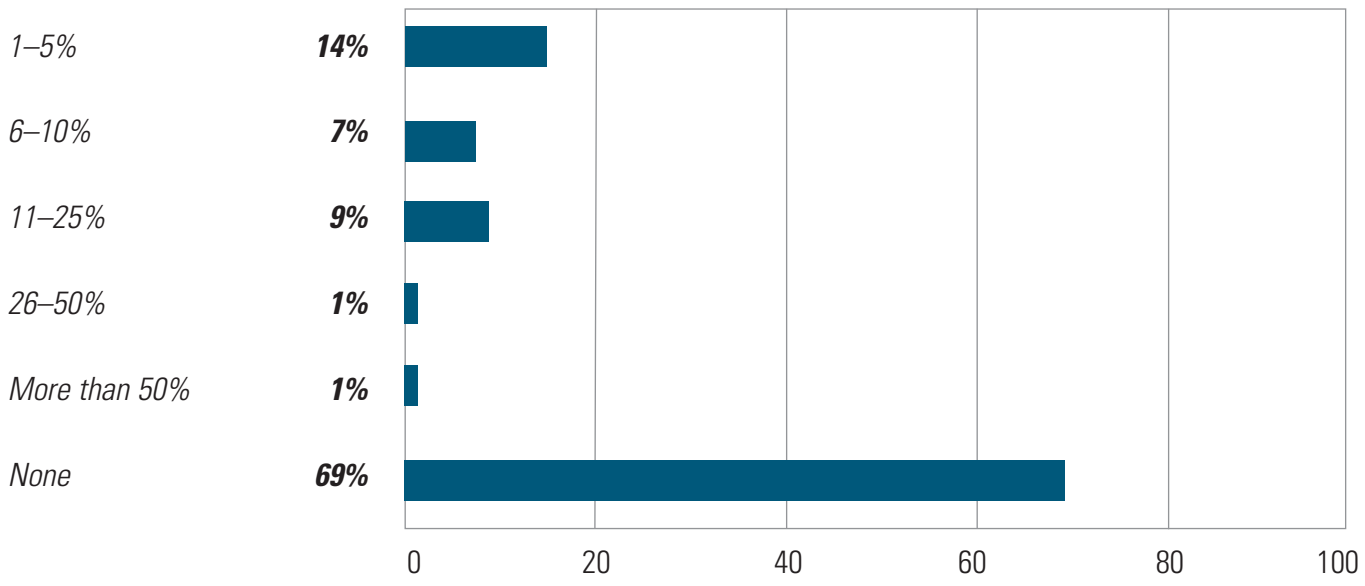
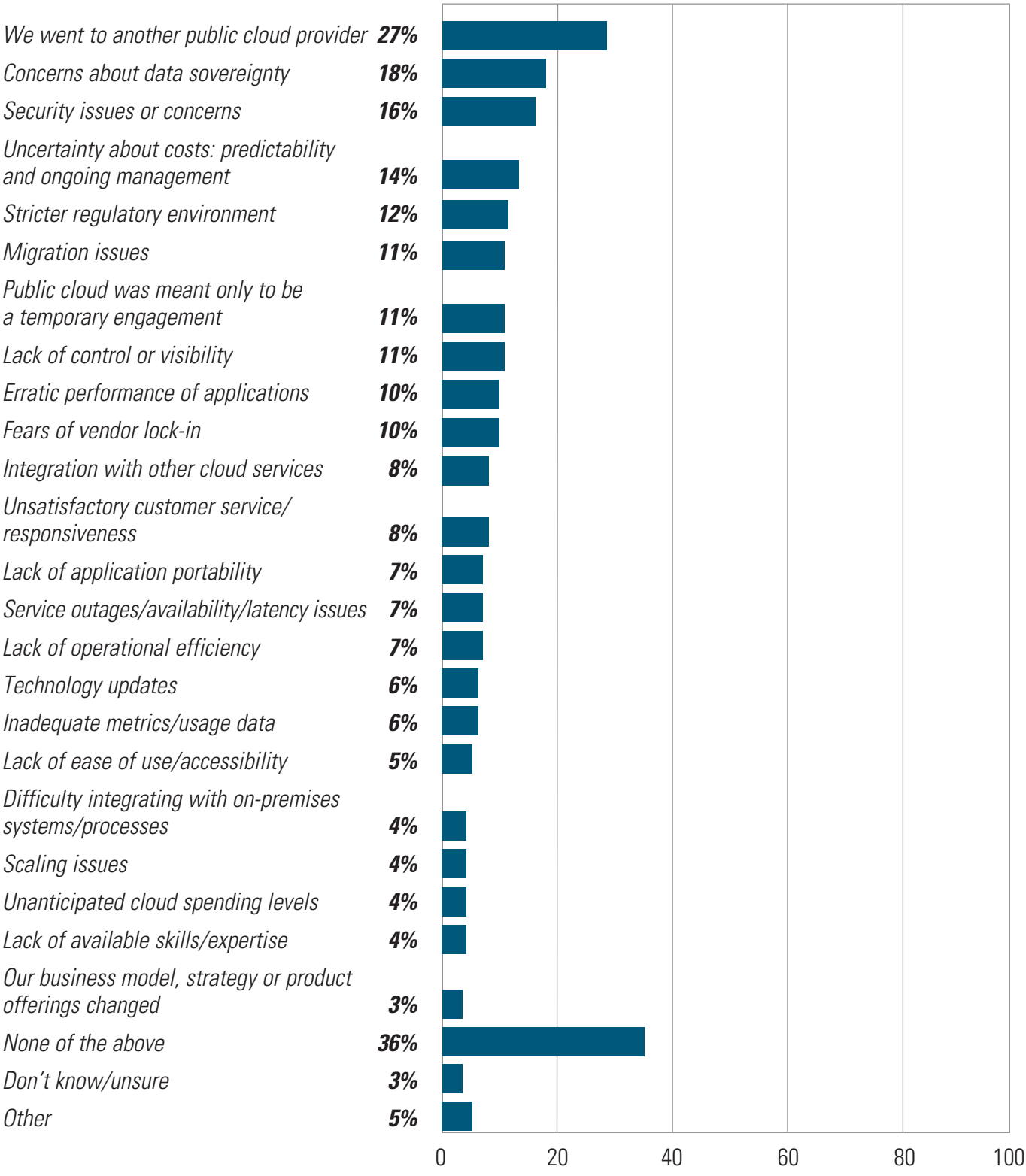


Figure 22: Reasons for Discontinuing or Scaling Back Public Cloud Service



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DEMOGRAPHICS

Figure 23: Primary Job Titles

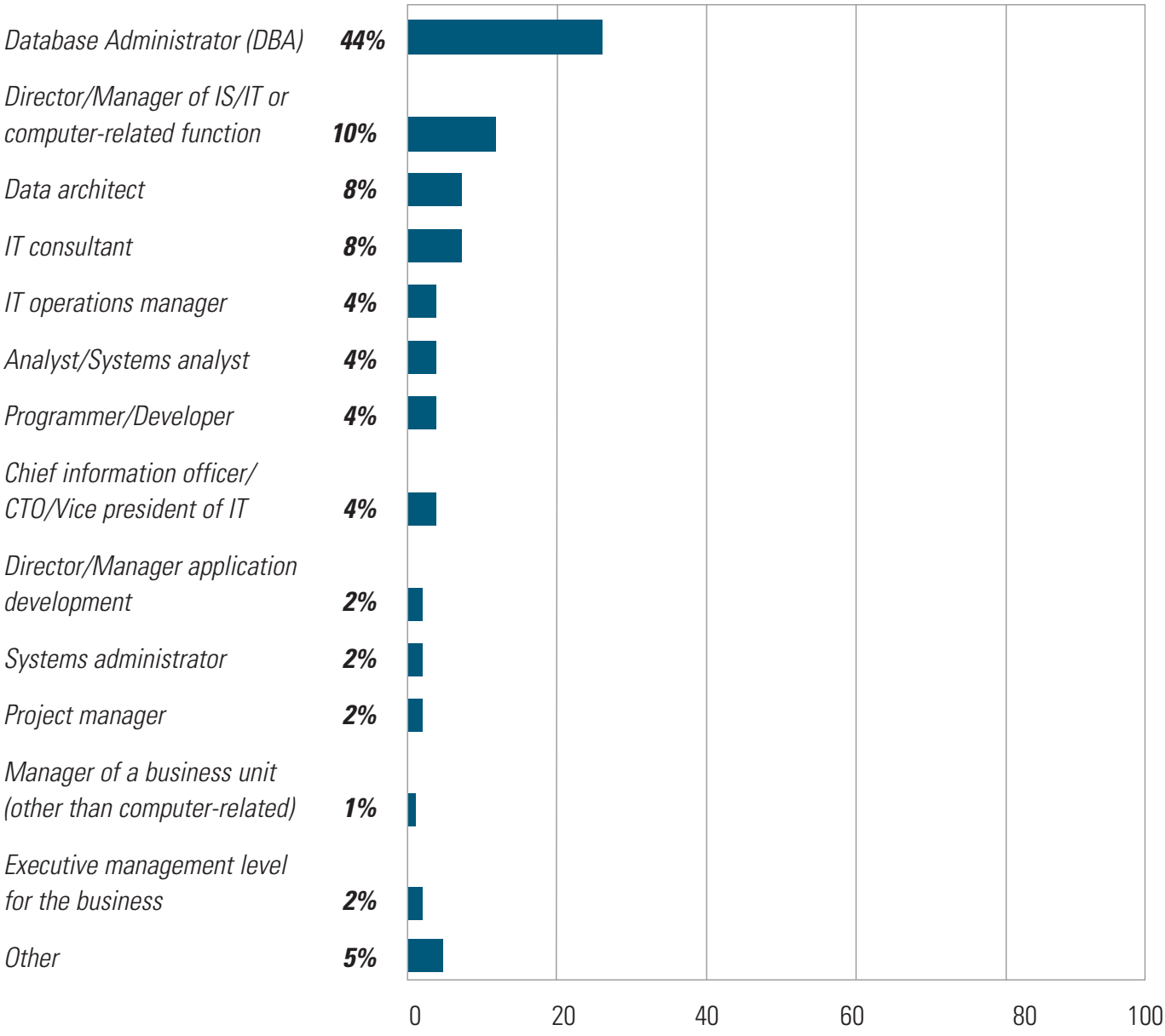

Figure 24: Number of Employees in Organizations (include all locations, branches, and subsidiaries)

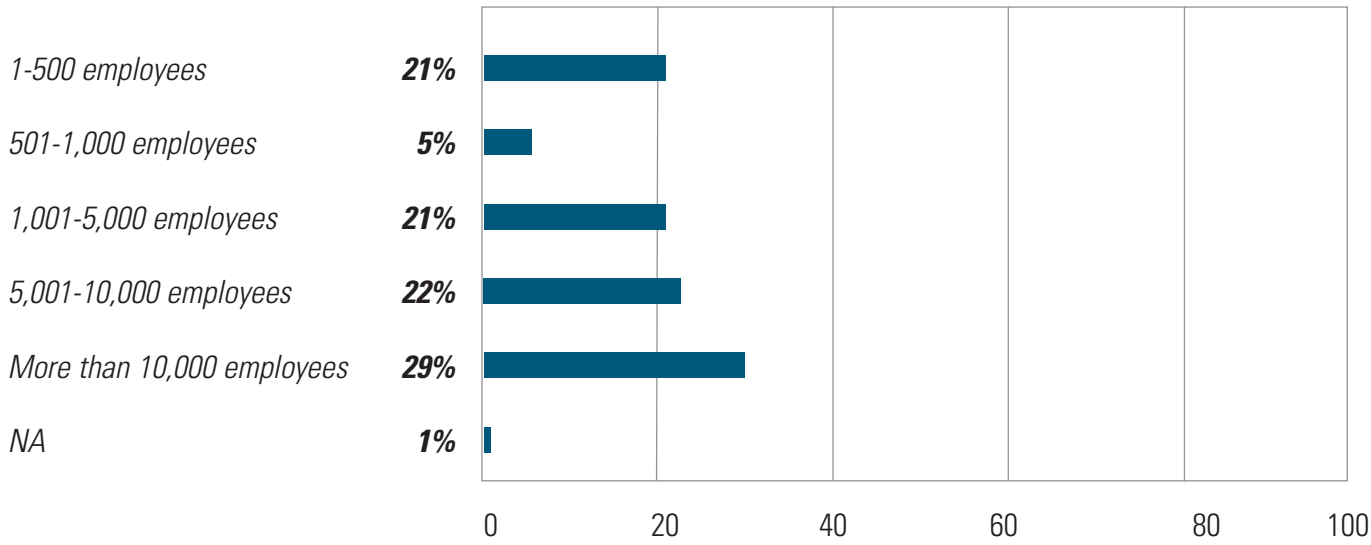

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Figure 25: Primary Industries