spiceworks

Public Cloud Trends in 2019 and Beyond

From workload shifts to deployment models, Spiceworks examines emerging public cloud trends in businesses across North America and Europe

In recent years, cloud computing technology has changed the way many companies handle IT. Using the public cloud computing model, IT departments have the option to pay-as-they-go while rapidly spinning up services, applications, or instances in a cloud provider's data center, scaling them up and down as demand changes.

But how prevalent is public cloud use among businesses, how much will usage continue to grow, and how will cloud-centric technologies continue to evolve? We surveyed more than 450 IT decision makers in organizations across North America and Europe to understand how businesses utilize different public cloud deployment models (e.g., IaaS, PaaS, SaaS), what types of workloads and services are running in public clouds, and which emerging cloud trends are on the rise.

Key Findings

1. The percentage of business applications, services, and workloads running in public clouds is expected to double in the next one to two years.
2. Among cloud providers, AWS earns top marks for maximum uptime, Microsoft Azure ranks highest for compatibility, and Google Cloud Platform ranks highest for manageability.
3. Approximately one third of businesses plan to adopt serverless computing, edge computing, and container technologies by 2020.

Emerging Cloud Trends

More than a decade after the initial rise of cloud computing, use of the technology is widespread. In fact, Spiceworks 2019 State of IT Budgets report found that on average, organizations spend nearly a quarter of their total IT budget on hosted/cloud-based services. But how will the way organizations use public clouds evolve in the future? To shed light on potential changes, we asked IT professionals about relevant emerging cloud trends.

Overall, 69% of IT decision makers believe cloud services can enable their organization to more easily adopt emerging technologies. In fact, our research reveals three cloud-centric technologies that are on the rise in the workplace, including edge computing, serverless computing, and container technology.

Edge computing

Use of edge computing technology is a rising trend that's all about placing computing resources closer to where they're needed to meet increasing demands and overcome limitations of cloud-based resources. For example, organizations might make use of smaller, more ubiquitous, close-in edge data centers to reduce latency when supporting an increasing number of nearby connected IoT devices, such as smart sensors and autonomous vehicles.

And there's quite a bit of interest in the technology. According to our data, 37% of IT decision makers said latency concerns with cloud data centers will lead their organization to consider edge computing technology. According to our State of IT research, edge computing technology has been adopted by 15% of organizations, and usage is expected to grow to 32% by 2020. These rates are even higher in large enterprises with 5,000+ employees where adoption currently stands at 32% and is expected to grow to 65% by 2020.

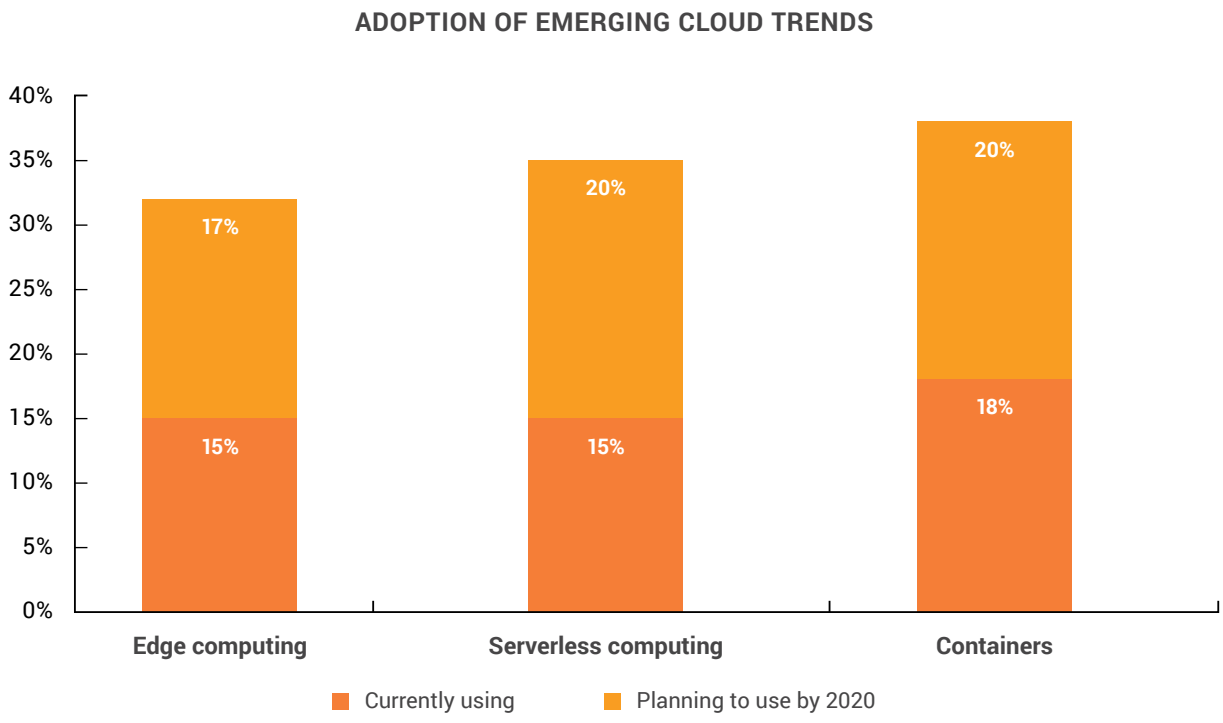
Serverless computing

Serverless computing takes cloud computing efficiency to the next level. As the technology's name suggests, there are no physical servers to set up. But instead of paying a monthly fee for use of a service (like with SaaS) or paying for capacity (like with IaaS or PaaS), serverless computing services such as Amazon Lambda bill by actual usage of their event-based services, which could help organizations save money while still allowing for scalability.

For example, a company that runs a web application to service customers will experience lighter or heavier traffic depending on the day. By taking advantage of the dynamic nature of serverless technology and only calling upon services as needed, organizations can worry less about planning for peak load or having to spin up new cloud instances as demand changes.

According to our research, 56% of IT decision makers agree serverless computing models can help organizations lower costs and simplify IT operations. Perhaps that's why serverless computing has been adopted by 15% of organizations, and usage is expected to grow to 35% by 2020, according to our State of IT research.

IT services and financial services organizations, which may need to quickly scale cloud resources up and down depending on customer need, plan to adopt serverless tech at an even higher rate, with anticipated adoption rates of 42% and 46% by 2020, respectively.



Containers

Containers are structures that can encapsulate everything you need to run a particular application: settings, libraries, allocated computing resources, and other dependencies. In practice, they're similar to virtual machines in that they provide some degree of application isolation, but containers do not encapsulate an operating system.

So, when using a container technology such as Docker, there are fewer overhead demands than with virtualization and no need to license operating systems for each container. The result is a lightweight and portable unit that can move more seamlessly between servers and cloud data centers, making containers useful for developers who want to easily migrate services without having to worry about differences in environments causing issues.

According to our data, 44% of IT professionals agree container technology offers many of the benefits of virtualization with less cost and less overhead. And our State of IT research shows 18% of organizations have adopted containers, with usage expected to grow to 38% by 2020.

Public Cloud Workloads Today

Now let's take a step back to examine the state of public cloud workloads today. According to our latest survey of IT decision makers in Spiceworks, we know that on average, organizations run 27% of all business workloads, applications, and services in public clouds. Looking forward, this number is expected to nearly double to 48% in the next one to two years.

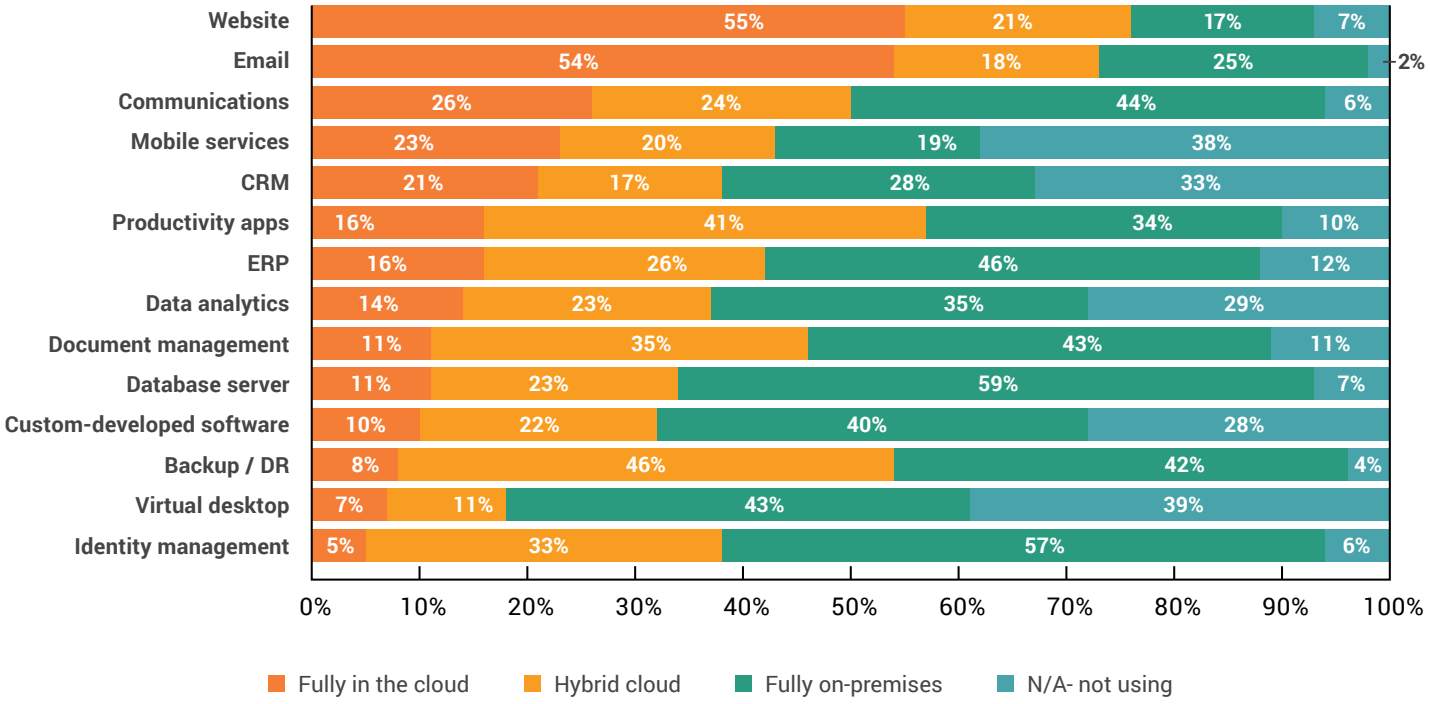
When comparing the data by company size, smaller organizations expect to have a higher proportion of their workloads, services, and apps running in public clouds within the next one to two years. In fact, by 2021, small businesses expect to run 53% of their workloads in public clouds, compared to 46% for mid-size business workloads, and 41% for enterprise workloads.

But which applications and services are running in the cloud today, and which are still on-premises? According to our data, the two workloads most likely to run fully in public clouds are websites/ecommerce sites (55%) and email (54%).

Also, thanks to the dual, online-and-offline nature of products like Office 365, 41% of organizations reported running productivity apps using a hybrid cloud approach, where some workloads run locally and some are handled in a public cloud. Also, because it's a disaster recovery best practice to have multiple copies of critical data across geographies, 46% of organizations surveyed also employ a hybrid backup strategy, storing data both on-premises and in public clouds for redundancy.

On the other side of the firewall, many applications and services are still running on-premises, potentially due to latency concerns for these often mission-critical workloads, or security, privacy, and compliance concerns associated with handling sensitive employee and customer data. For example, 59% of businesses run their database servers fully on-prem, while 57% run their identify management systems and 46% run their ERP software on-prem as well.

WORKLOADS/APPLICATIONS BUSINESSES RUN ON-PREMISES VS. IN PUBLIC CLOUDS



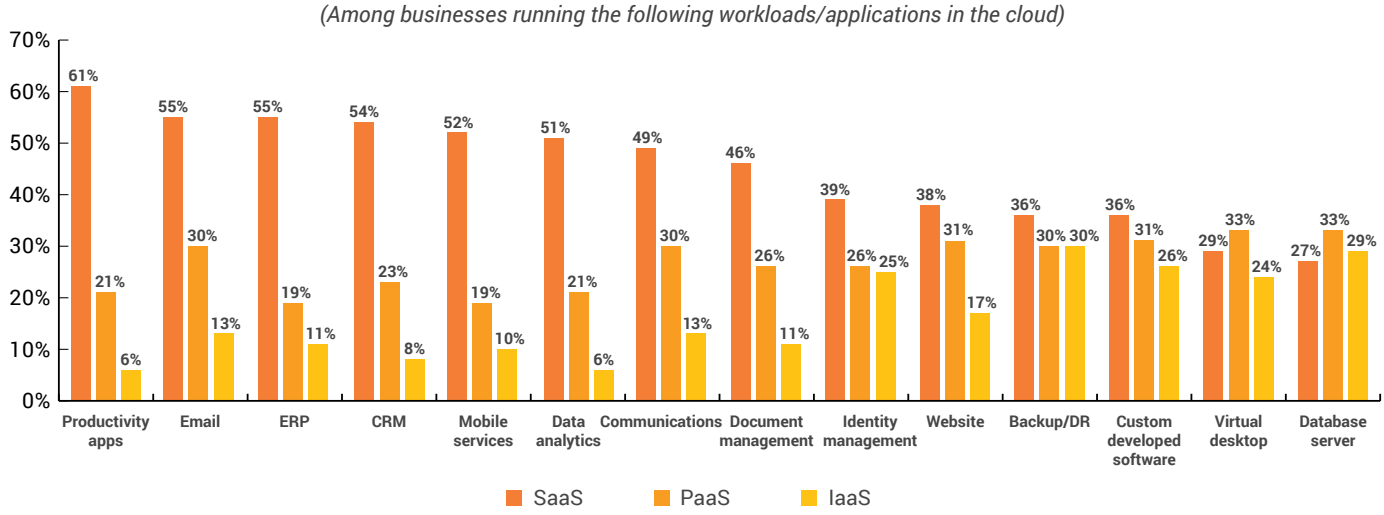
Public Cloud Deployment Models

For workloads running in public clouds, organizations can choose between different cloud delivery models including software, platform, or infrastructure "as-a-service." According to our research, businesses are trending towards giving up more control in exchange for a cloud experience. SaaS is the most prevalent model among organizations using the cloud, but in many cases, businesses are using a mix of SaaS, PaaS, and IaaS. Overall, 80% of businesses use SaaS for one or more application or service, 64% use PaaS, and 48% use IaaS.

SaaS is the clear deployment model of choice for most types of cloud workloads, including productivity apps, email servers, ERP software, CRM software, mobile services, data analytics solutions, and more. However, use of the SaaS deployment model decreases while use of PaaS and IaaS increases when it comes to workloads relating to identify management, backup/disaster recovery solutions, custom developed software, virtual desktops, and database servers.

DEPLOYMENT MODELS FOR BUSINESS WORKLOADS/APPLICATIONS IN PUBLIC CLOUDS

(Among businesses running the following workloads/applications in the cloud)

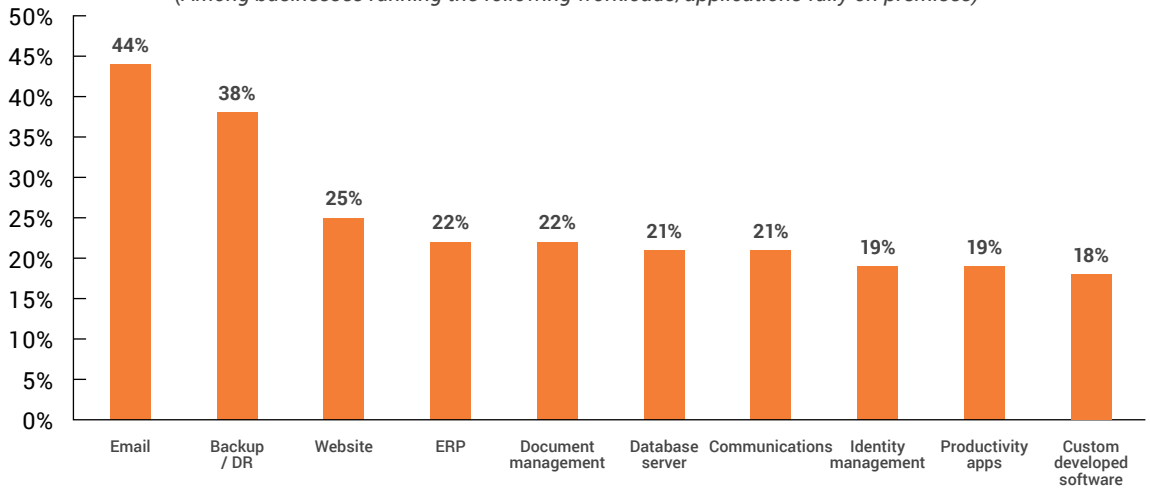


Future of Public Cloud Workloads

We previously mentioned the number of applications, services, and workloads in public clouds is expected to nearly double within the next one to two years, but where will the most growth take place? Among organizations currently running these workloads fully on-premises, 44% are considering moving their email workloads to public clouds by 2020, while 38% are considering moving their backup/disaster recovery solutions and 25% are considering moving their websites to a public cloud.

BUSINESSES CONSIDERING MOVING WORKLOADS/APPLICATIONS TO PUBLIC CLOUDS IN THE NEXT 12 MONTHS

(Among businesses running the following workloads/applications fully on-premises)



As to the rationale behind cloud migrations, IT decision makers told us in our State of IT report that the top drivers for moving workloads to the cloud include providing access to data anywhere (42%), enhancing disaster recovery capabilities (38%), enabling more flexibility (37%), and reducing support burden on IT staff (36%).

Cloud Purchase Journey

While providers try to make it as simple as possible for businesses to move their workloads to the cloud quickly, it can take time for businesses to research and evaluate solutions before reaching a final decision.

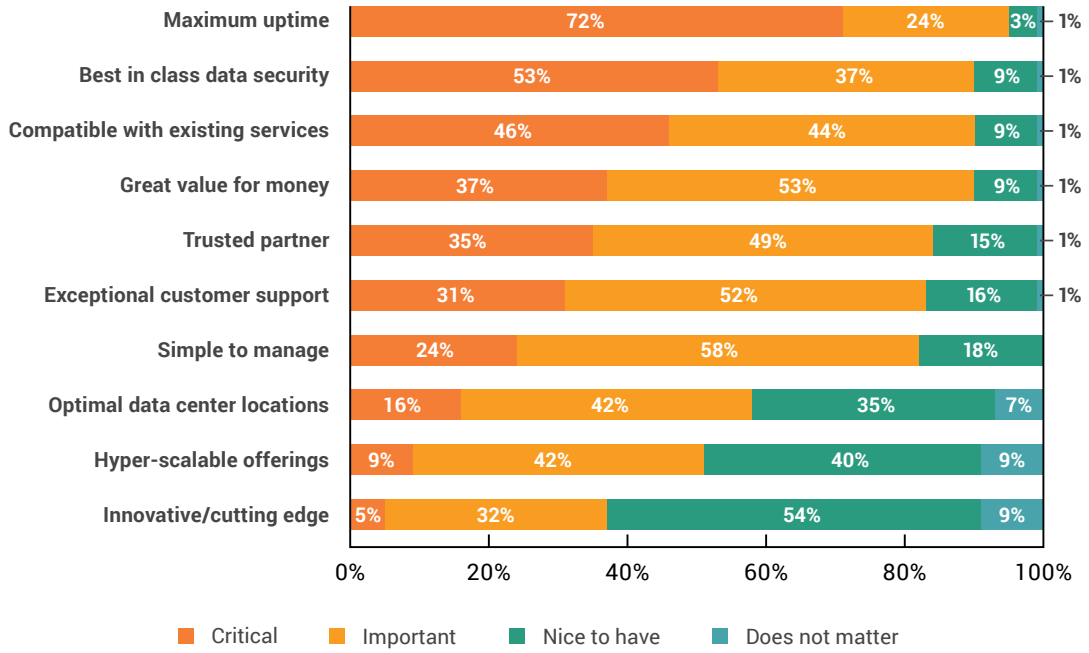
For most cloud-based solutions, the majority of organizations spend 6 months or less to reach a final decision. But in the case of enterprise resource planning (ERP) software, roughly a third of organizations spend more than 6 months — with 13% spending more than a year to make up their minds. After a final decision is made, most organizations typically spend up to 3 months on each of the following phases: solution testing, deployment, and post-implementation review.

Buyer Perceptions of Cloud Providers

Looking more specifically at public cloud infrastructure providers (e.g., AWS, Azure), what are the most important consideration factors when IT departments evaluate these cloud providers? According to our research, the vast majority of IT decision makers (72%) said providing maximum uptime is a critical attribute, making it the most important factor when considering cloud infrastructure providers.

Additionally, 53% of respondents said best-in-class security is critical, and 46% said it's critical for a cloud service to be compatible with existing services. While less critical but still important, value for money and being a trusted partner round out the top five consideration factors for public cloud providers.

IMPORTANCE OF CONSIDERATION FACTORS FOR PUBLIC CLOUD INFRASTRUCTURE PROVIDERS

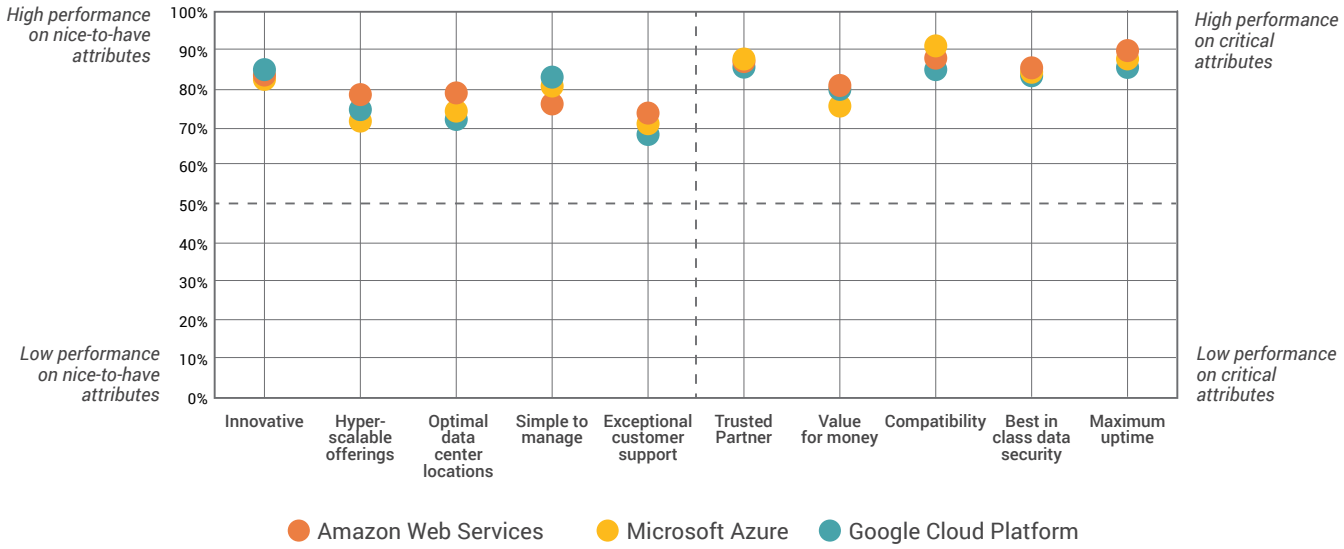


We also asked IT decision makers to evaluate the public cloud infrastructure providers their organization currently uses across the top consideration factors. Our results show Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform rank very similarly across most attributes.

However, AWS narrowly edged out the competition for maximum uptime, best-in-class data security, and value for money. Azure took the top spot for compatibility with existing services, likely due to the prevalence of Windows in corporate IT environments. Azure also tied with AWS for being the most trusted partner. On the other hand, Google Cloud Platform earned the highest scores for being simple to manage and being an innovative/cutting edge provider.

PUBLIC CLOUD INFRASTRUCTURE PROVIDERS: ATTRIBUTE IMPORTANCE VS. BRAND ASSOCIATIONS

(Percent of IT decision makers who believe their provider meets or exceeds expectations for each attribute)



It's also worth noting that more than a third (36%) of IT decision makers said their organization is open to using smaller, local cloud infrastructure providers. Directionally, small organizations are more willing to consider these more niche players: 42% of small businesses surveyed are open to using smaller, local cloud providers, compared to 34% of mid-size businesses, and 30% of enterprises.

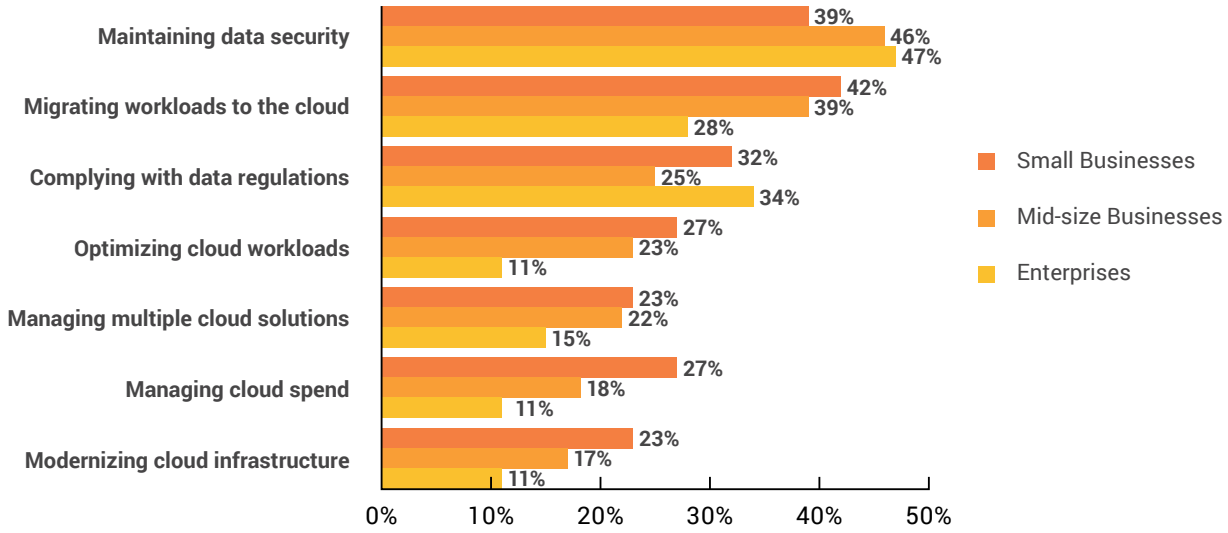
Growth Opportunities & Hurdles for Cloud Vendors

Our research reveals an overall positive outlook for providers of public cloud infrastructure, applications, and services, as well as opportunities for them to grow their business and provide more support to the customers they serve. For example, from a return on investment perspective, 41% of IT decision makers surveyed believe the benefits of using the public cloud outweigh the potentially greater long-term costs of not owning the hardware.

Additionally, many IT decision makers told us their business would like more support from cloud vendors when it comes to maintaining data security (43%), migrating workloads to the cloud (39%), and complying with data regulations (28%). It's also worth noting that smaller businesses need significantly more support when it comes to managing cloud spend and modernizing their cloud infrastructure. These areas represent opportunities for IT vendors to offer more consulting and managed cloud services to both existing customers and new customers.

TOP AREAS WHERE BUSINESSES NEED MORE SUPPORT FROM CLOUD VENDORS

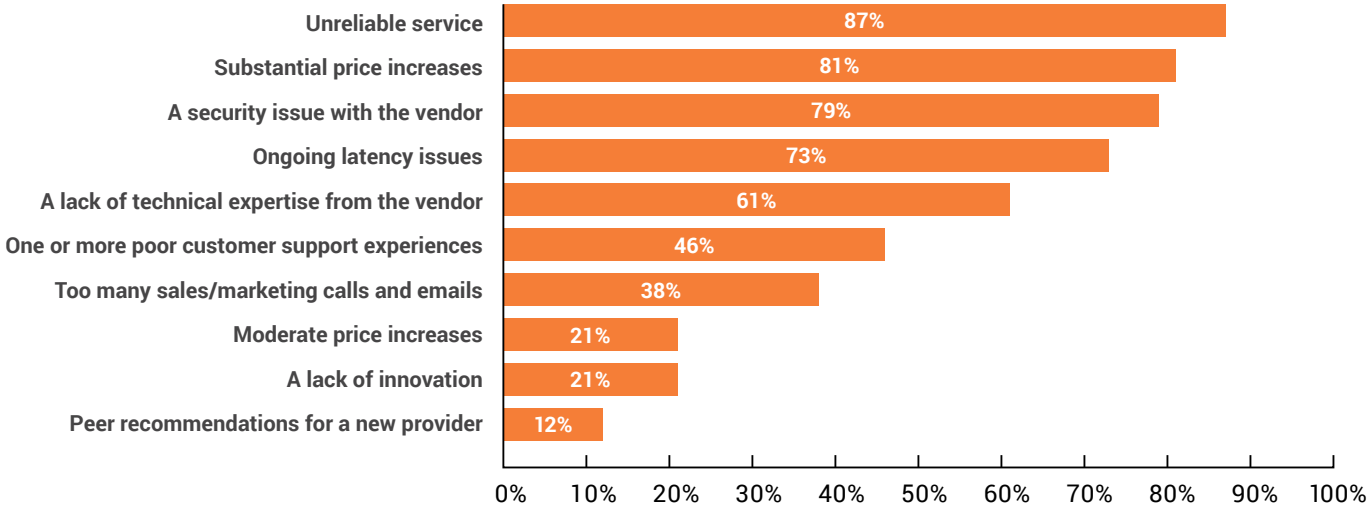
(By Company Size)



However, according to our research, there are a few hurdles public cloud vendors will need to overcome to retain customers and grow their business:

- **Retaining customers:** Our research reveals the top reasons organizations might stop using their cloud service provider, which include unreliable service (87%), substantial price increases (81%), a security issue with the vendor (79%), ongoing latency issues (73%), and a lack of technical expertise from the vendor (61%). Vendors should also keep in mind that nearly 40% of IT decision makers said too many sales/marketing calls and emails would lead them to stop using a cloud provider.

TOP DRIVERS LEADING BUSINESSES TO STOP PURCHASING FROM CLOUD VENDORS



- **Overcoming security concerns:** IT decision makers have mixed feelings when it comes to security in the cloud. While 35% believe cloud providers can offer superior security compared to what they can muster in their own server rooms and data centers, nearly a third (30%) of businesses have faced data security challenges in the cloud, and this figure jumps to nearly 50% in enterprises with 1,000+ employees.
- **Offering flexible options:** Additionally, nearly a quarter (22%) of organizations said they've been locked into cloud services they're not satisfied with, and more than half (54%) of IT decision makers believe it would be difficult to shift some of their organization's workloads to a different public cloud provider.

In other words, to better retain customers, cloud vendors will need to be more aware of what's driving their customers to competitors. And to reach new customers, providers need to ease security concerns among IT buyers and provide more assurances and flexibility so businesses feel confident they won't end up stuck with services they're unhappy with.

But overall, our data indicates the future is bright for cloud vendors. Across a wide variety of applications, workloads, and services, there's a lot of opportunity for providers to earn new customers and pave the way for emerging trends, such as serverless computing, edge computing, and container technologies.

Want to apply these trends to your marketing strategy?

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Methodology

The survey was conducted in April 2019 and included 452 IT decision makers in Spiceworks. Respondents represent organizations in the United States (74%) and Europe (26%) across a variety of company sizes, including 37% from small businesses (1 to 99 employees), 53% from mid-size businesses (100 to 999 employees), and 10% from enterprises (1,000+ employees). Respondents also represent a variety of industries, including education, healthcare, nonprofits, government, finance, retail, construction, manufacturing, and IT services.

About Spiceworks

Spiceworks is the marketplace that connects the IT industry to help technology buyers and sellers get their jobs done, every day. The company helps people in the world's businesses find, adopt, and manage the latest technologies while also helping IT brands build, market, and support better products and services. Founded in 2006 and headquartered in Austin, Texas, Spiceworks empowers people to use technology to make their organizations, their communities, and the world better.

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