

## Research Brief

# The Evolving Public Cloud Landscape

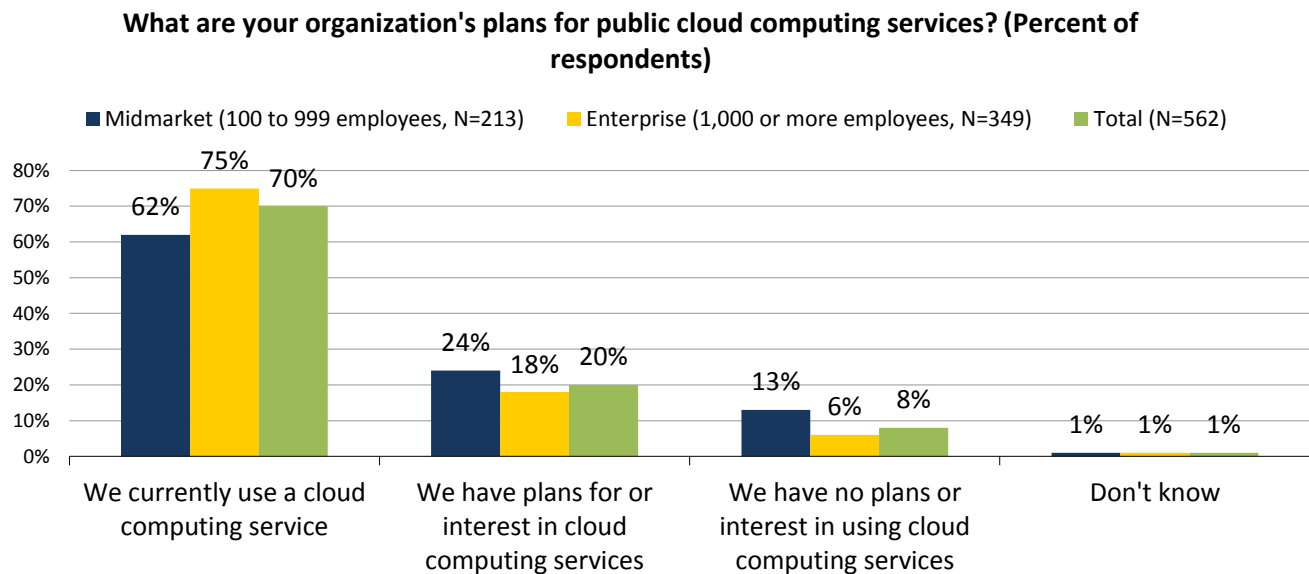
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**Abstract:** ESG research indicates that the corporate usage of public cloud computing in the form of cloud-based infrastructure services (i.e., IaaS), business applications (i.e., SaaS), and/or application development (i.e., PaaS) continues to grow. What are the profiles of the organizations at the forefront of the cloud adoption movement, how are these services being leveraged today, and what is their likely level of impact over a five-year horizon?

## Increasing Use of Public Cloud Services

Respondents to ESG's 2014 IT Spending Intentions Survey were asked about their organizations' usage of public cloud computing services. According to Figure 1, more than two-thirds (70%) of respondent organizations are currently leveraging at least one of the three public cloud computing models, and another 31% have plans for or interest in using these services. Consistent with previous results, when viewed by company size, larger organizations are more likely to be users of cloud computing. Specifically, 75% of enterprise organizations currently use some type of cloud service compared with 62% of their midmarket counterparts.

Figure 1. Usage Trends for Public Cloud Computing Services, by Company Size



Source: Enterprise Strategy Group, 2014.

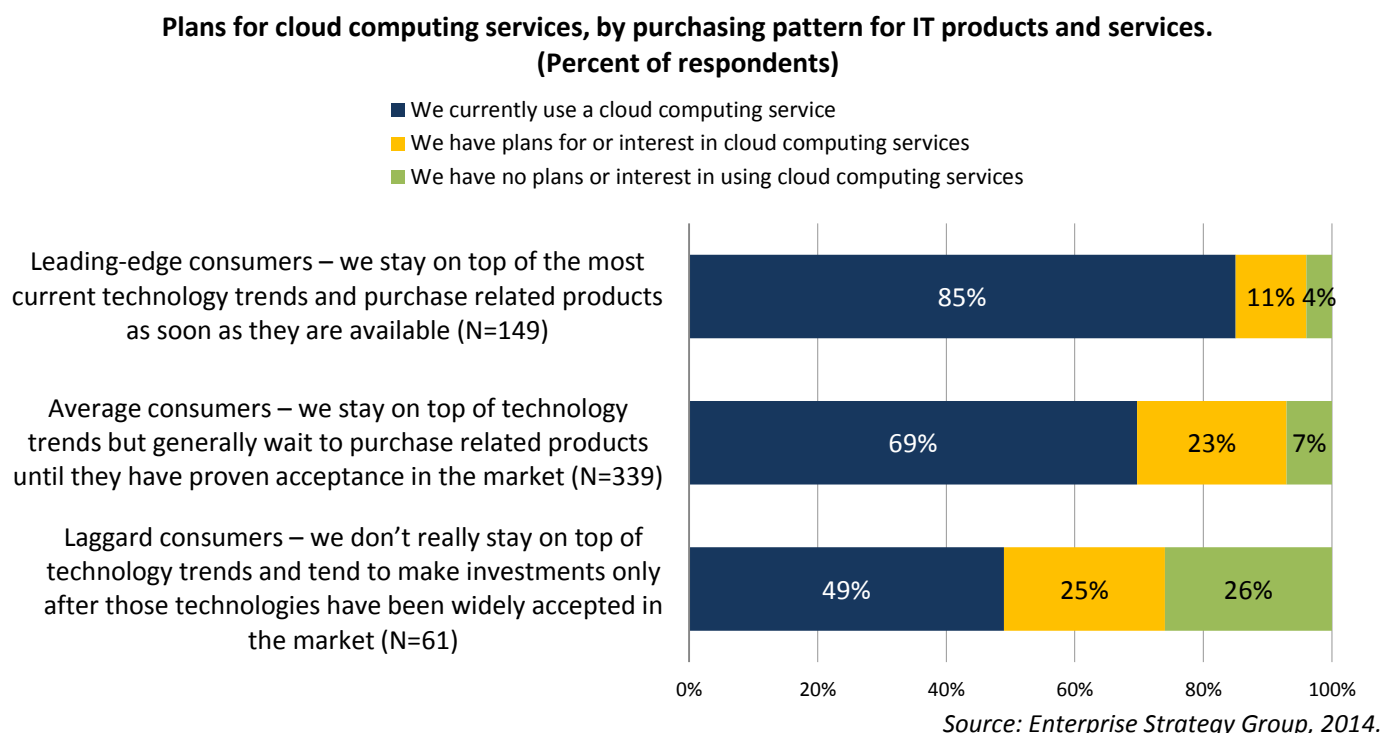
As in previous IT spending studies, ESG created a “psychographic” profile of the respondent organizations based on how individual respondents view their organizations' overall purchasing patterns for IT products and services.<sup>1</sup> When viewed

<sup>1</sup>Survey respondents were asked: *Generally speaking, how would you describe your organization's purchasing patterns for IT products and services?* Response options were as follows:

- **Leading-edge consumers** - We stay on top of the most current technology trends and purchase related products as soon as they are available.
- **Average consumers** - We stay on top of technology trends but generally wait to purchase related products until they have proven acceptance in the market.
- **Laggard consumers** - We don't really stay on top of technology trends and tend to make investments only after those technologies have been widely accepted in the market.

from this standpoint, it is clear that cloud computing is extremely important to those who consider IT to be more strategically significant. Indeed, 85% of these “leading-edge” IT consumers already use cloud computing services, compared with 49% of “laggard” organizations (see Figure 2). From a different perspective, the more conservative IT buyers are more than four times as likely as leading-edge shops (26% versus 4%) to have no plans for or interest in cloud computing services.

*Figure 2. Usage Trends for Public Cloud Computing Services, by IT Purchasing Pattern*



## 2014 Public Cloud Spending Expectations

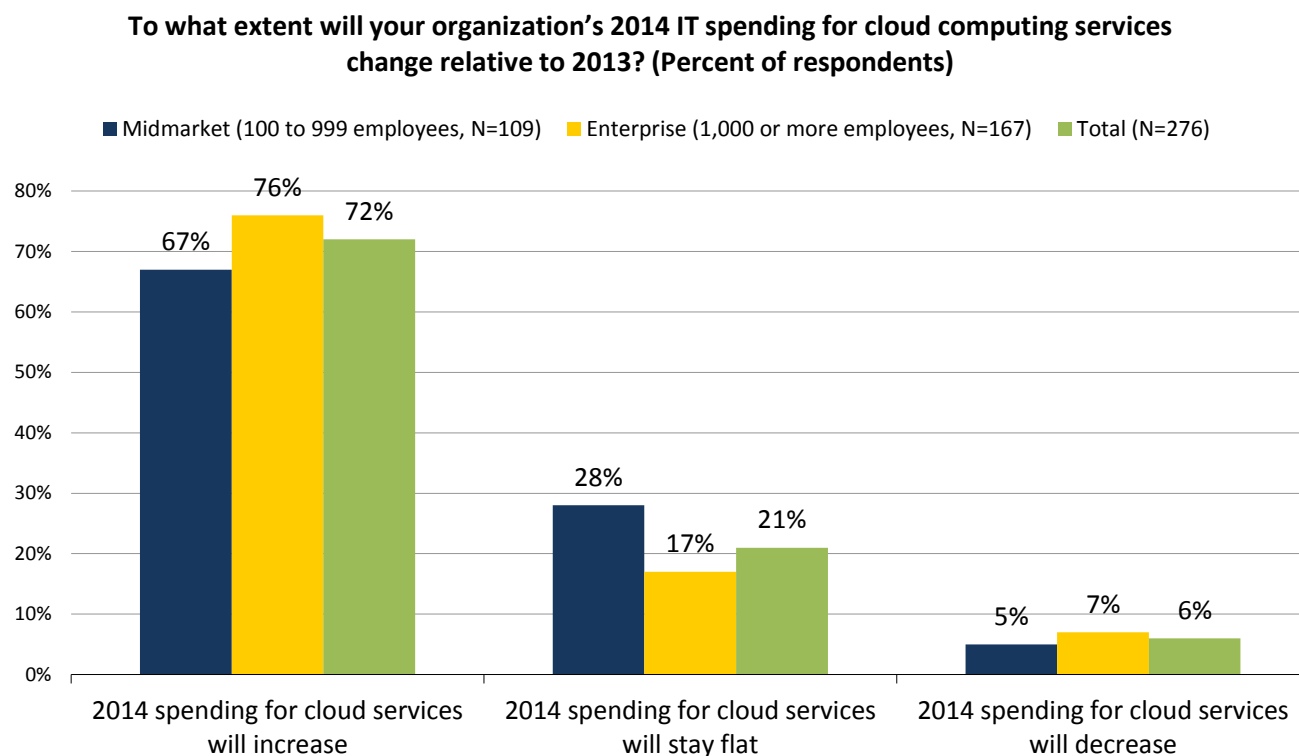
ESG’s annual IT spending intentions survey has shown a consistent annual increase in the usage and prioritization of public cloud computing services since 2011, and this year is no different. In fact, 2014 marks the first time that cloud computing was the most commonly cited IT priority, with 40% of IT professionals indicating that cloud-based infrastructure (i.e., IaaS), business applications (i.e., SaaS), or application development (i.e., PaaS) services will be a key area of focus for their organizations over the next 12 months.<sup>2</sup> While not always the case, there is typically a strong correlation between the level of importance assigned to IT initiatives and objectives and the funding set aside for them. Indeed, as shown in Figure 3, nearly three-quarters (72%) of IT departments expect to increase 2014 spending in the area of public cloud computing services. Not only are larger organizations more likely to be current cloud computing users, but they are also more likely to be increasing 2014 spending on these services relative to 2013. Specifically, 76% of enterprise organizations expect to increase cloud spending this year compared with 67% of their midmarket counterparts.

In addition to being further along the cloud computing adoption curve, leading-edge IT organizations are also more likely to further invest in cloud services in 2014. Specifically, 89% of the respondents at these organizations expect to see spending levels for cloud computing services increase as opposed to only 45% of laggard IT consumers (see Figure 4). Whether it was the financial crisis of 2008-2009 or the uncertainty generated by the prospect of the fiscal cliff at the end of 2012, leading-edge IT organizations have largely been undaunted by macroeconomic conditions when it comes to making technology investments, especially in leading-edge products and services. Therefore, it is not surprising that

<sup>2</sup> Source: ESG Research Report, [2014 IT Spending Intentions Survey](#), February 2014.

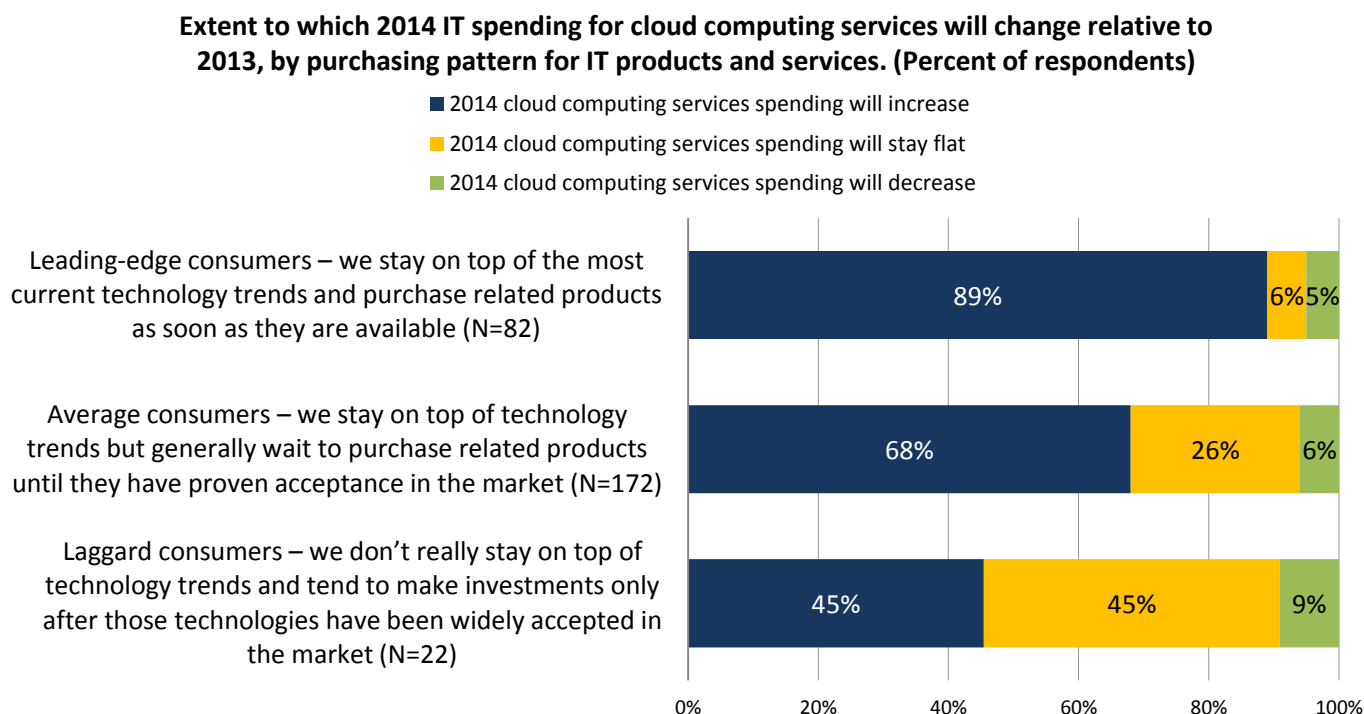
these organizations are almost twice as likely as laggard IT consumers to reaffirm their commitment to cloud services by increasing their 2014 spending levels.

**Figure 3. Change in 2014 Cloud Computing Services Spending Relative to 2013, by Company Size**



Source: Enterprise Strategy Group, 2014.

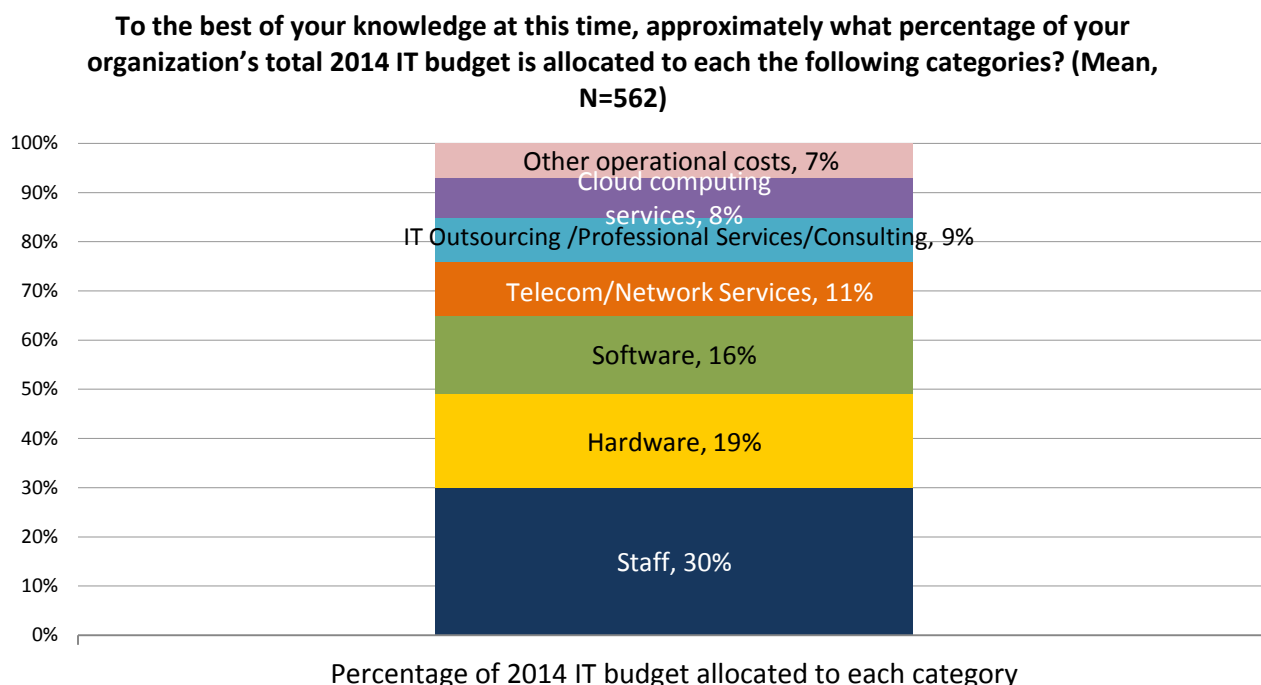
**Figure 4. Change in 2014 Cloud Computing Services Spending Relative to 2013, by IT Purchasing Pattern**



Source: Enterprise Strategy Group, 2014.

Respondents were also asked to identify the manner in which their organizations' 2014 IT budgets would be distributed. According to Figure 5, approximately 8% of overall IT budgets for this year are allocated to public cloud computing services. Though that number doesn't sound like a lot on its own, it roughly equates to nearly one-quarter (23%) of the percentage of the average annual budget that is allocated to traditional hardware and software products (35% combined).

**Figure 5. 2014 IT Budget Allocations**



Source: Enterprise Strategy Group, 2014.

Organizations with shorter operating histories and those that typically keep pace with the latest technology trends and innovations are allocating greater portions of their IT budgets to cloud computing services (see Table 1). Since younger organizations typically have less established IT infrastructure and associated processes, which gives them the flexibility to more aggressively pursue and consume cloud services, it makes sense that—on average—they expect to allot nearly twice as much (11% versus 6%) of their IT budgets to cloud computing compared with organizations that have been around for more than 50 years. Likewise, cutting-edge IT organizations have earmarked approximately 10% of their IT budget for the coming year on cloud-based application or infrastructure services compared with only 4% among laggard IT consumers.

**Table 1. Percentage of Overall 2014 IT Budget Allocated to Cloud Computing Services, by Age of Organization and IT Purchasing Pattern**

| Percentage of 2014 IT budget allocated to cloud computing services |                        |                            |  |                           |                          |
|--|------------------------|----------------------------|--|---------------------------|--------------------------|
| By age of organization   |                        |                            | By purchasing pattern for IT products and services |                           |                          |
| 10 years or less (N=85)  | 11 to 50 years (N=282) | More than 50 years (N=193) | Leading-edge consumers (N=149)                     | Average consumers (N=342) | Laggard consumers (N=61) |
| 11%  | 9%                     | 6%                         | 10%  | 8%                        | 4%                       |

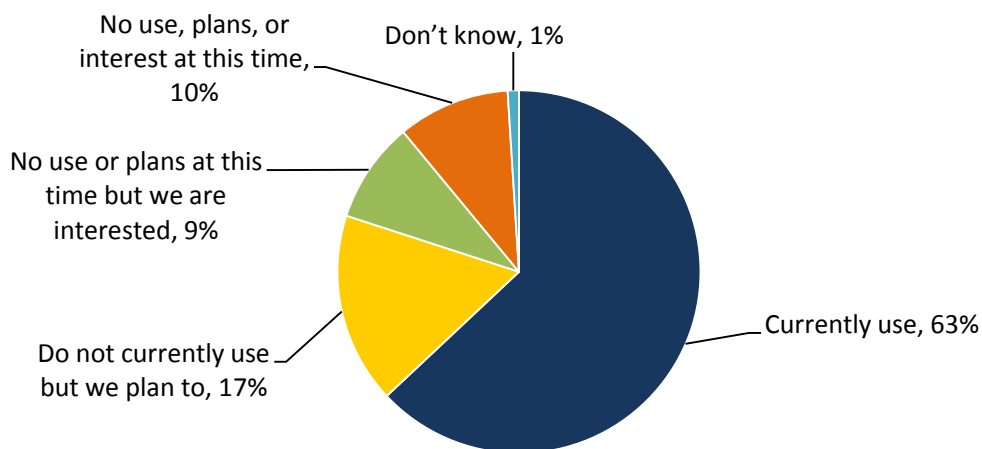
Source: Enterprise Strategy Group, 2014.

## Usage Trends for Cloud-based Application (SaaS) and Infrastructure (IaaS) Services

Since SaaS is the most established of the various cloud computing models available today, it is not surprising that nearly two-thirds (63%) of organizations are already using software-as-a-service in some capacity (see Figure 6). Additionally, 26% of respondents indicated that their organizations either have plans for or interest in SaaS-based applications. In terms of current usage trends over the last several years, Figure 7 represents a consistent increase in cloud-based application deployments since 2011.

Figure 6. Usage Trends for Software-as-a-service (SaaS)

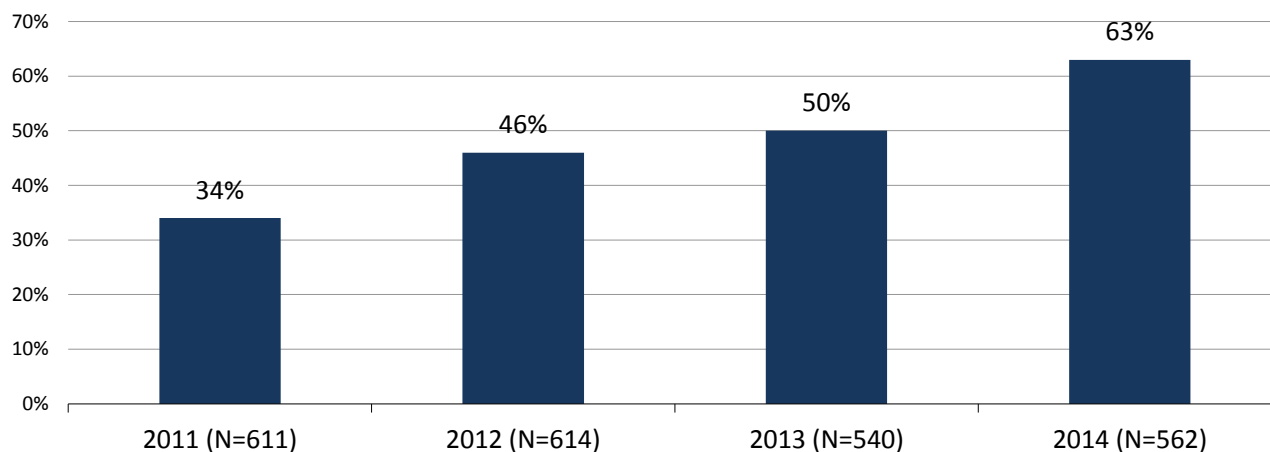
Please indicate your organization's usage of or plans for software-as-a-service. (Percent of respondents, N=562)



Source: Enterprise Strategy Group, 2014.

Figure 7. Usage of Software-as-a-service (SaaS) Increases from 2011 to 2014

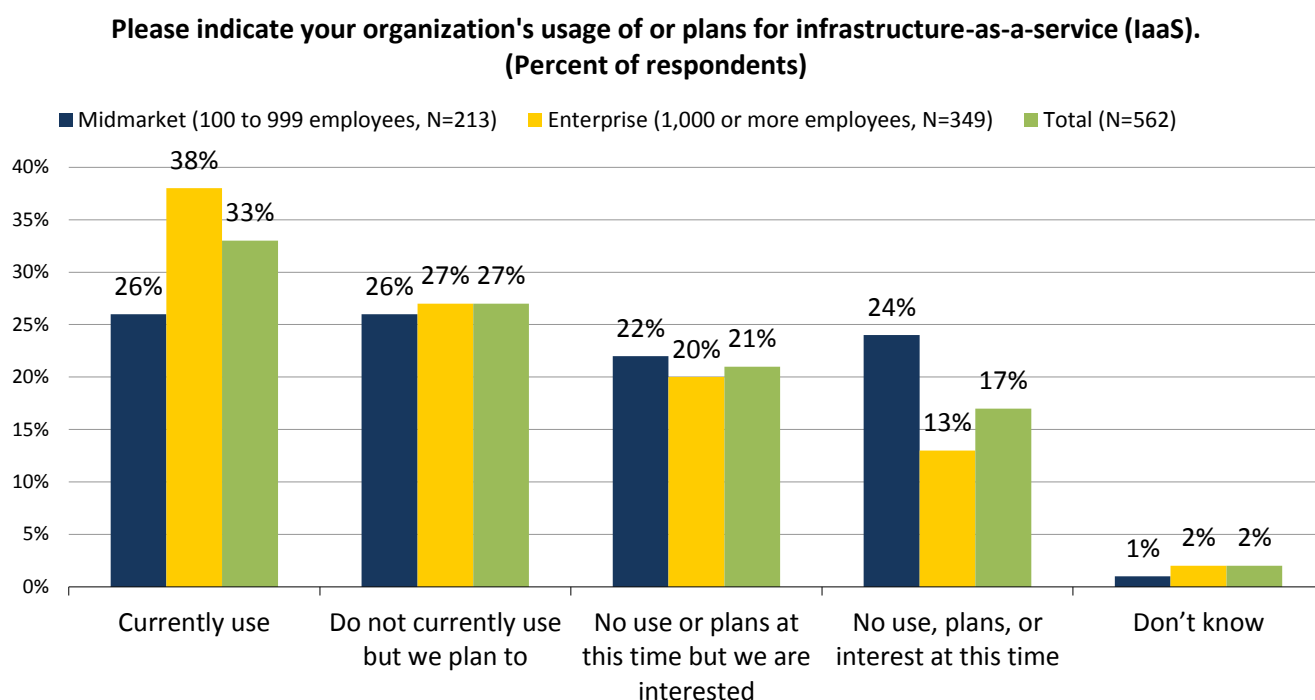
Usage of software-as-a-service (SaaS), by year. (Percent of respondents)



Source: Enterprise Strategy Group, 2014.

Organizations are using infrastructure-as-a-service (IaaS, also known as cloud infrastructure services) to mitigate the capital and operational expenses associated with traditional IT hardware deployments, albeit—more often than not—on a more tactical or temporary basis. Potential use cases for IaaS include providing target systems for remote backup and replication, supporting the compute and storage resource requirements for short-term test and development activities, and even accommodating temporary/event-driven spikes or peak workloads. There has also been a surge in the usage of cloud storage services as a repository for long-term data archives and as an extension of current onsite file sharing platforms based on the allure of cheap capacity and the transfer of management responsibilities. ESG asked survey respondents about their current and planned use of IaaS and found that one-third of organizations consider themselves to be current users in some form, while another 27% have plans to use these services (see Figure 8). Consistent with the adoption trends seen earlier for cloud computing services, enterprises are much more likely than midmarket organizations (38% versus 26%) to be current IaaS users.

**Figure 8. Usage of Software-as-a-service (SaaS) Increases from 2011 to 2014**



Source: Enterprise Strategy Group, 2014.

This data becomes more meaningful when analyzed based on the scope of an organization's IT environment—as measured by both its onsite production server deployment and the associated storage capacity footprint. While it is generally unlikely that organizations with significant technology implementations will “rip and replace” existing assets in favor of cloud-based infrastructure on a wholesale basis, it makes sense that they would be more likely to use infrastructure services in a complementary manner. Indeed, there is a direct relationship between the usage of IaaS for IT infrastructure requirements and *both* the number of production servers deployed and the amount of storage capacity under management.

Table 2 reveals that nearly half (47%) of organizations with more than 500 production servers are already leveraging infrastructure-as-a-service as opposed to 23% of those with fewer than 50 production servers. Similarly, 54% of organizations with at least 1 PB of storage capacity currently use IaaS compared with only 20% of those with less than 100 TB. Perhaps more significantly, organizations with the smallest deployments in terms of storage capacity are more than three times as likely as those with the largest infrastructure footprints (36% versus 11%) to have *no plans* for or interest in using IaaS.

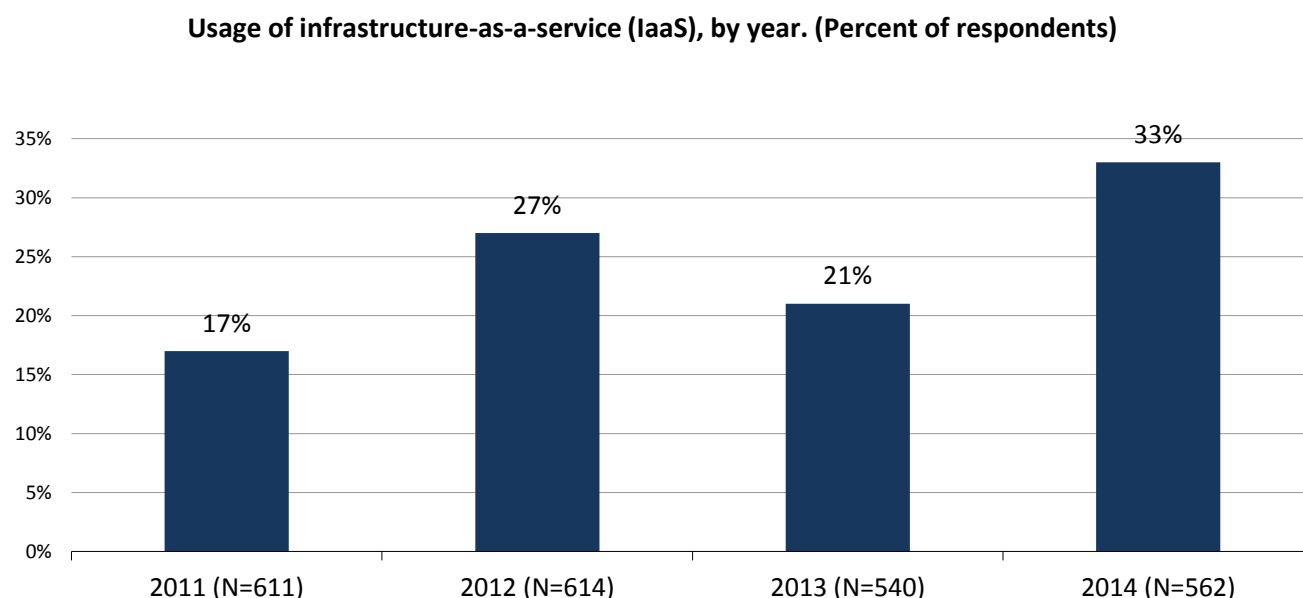
Table 2. Usage Trends for Infrastructure-as-a-service (IaaS), by Storage Capacity and Production Servers

| Please indicate your organization's usage of or plans for infrastructure-as-a-service (IaaS). |                               |                           |                               |  |                       |                     |
|---|-------------------------------|---------------------------|-------------------------------|--|-----------------------|---------------------|
|   | By production servers         |                           |                               | By total amount of installed capacity associated with disk-based storage systems |                       |                     |
|   | Fewer than 50 servers (N=132) | 50 to 500 servers (N=261) | More than 500 servers (N=156) | Less than 100 TB (N=102)   | 100 to 999 TB (N=116) | 1 PB or more (N=56) |
| Currently use IaaS  | 23%                           | 31%                       | 47%                           | 20%  | 42%                   | 54%                 |
| Plan to use IaaS  | 22%                           | 31%                       | 24%                           | 23%  | 22%                   | 13%                 |
| Interested in IaaS  | 23%                           | 21%                       | 20%                           | 22%  | 25%                   | 23%                 |
| No plans to use IaaS  | 32%                           | 16%                       | 9%                            | 36%  | 11%                   | 11%                 |
| <b>TOTAL</b>  | <b>100%</b>                   | <b>100%</b>               | <b>100%</b>                   | <b>100%</b>  | <b>100%</b>           | <b>100%</b>         |

Source: Enterprise Strategy Group, 2014.

Unlike SaaS, the usage of infrastructure-as-a-service has fluctuated in the four years ESG has tracked it. While the number of organizations classifying themselves as *current IaaS users* jumped from 17% in 2011 to 27% in 2012, it dropped to 21% in 2013 before rebounding to 33% in 2014 (see Figure 9). Whereas the consumption model for SaaS solutions often involves an annual subscription, cloud infrastructure services are often consumed in a one-off, elastic basis to support short-term projects without the need to purchase additional capital assets (i.e., *renting* infrastructure).

Figure 9. Usage of Infrastructure-as-a-service (IaaS) Fluctuates Between 2011 and 2014



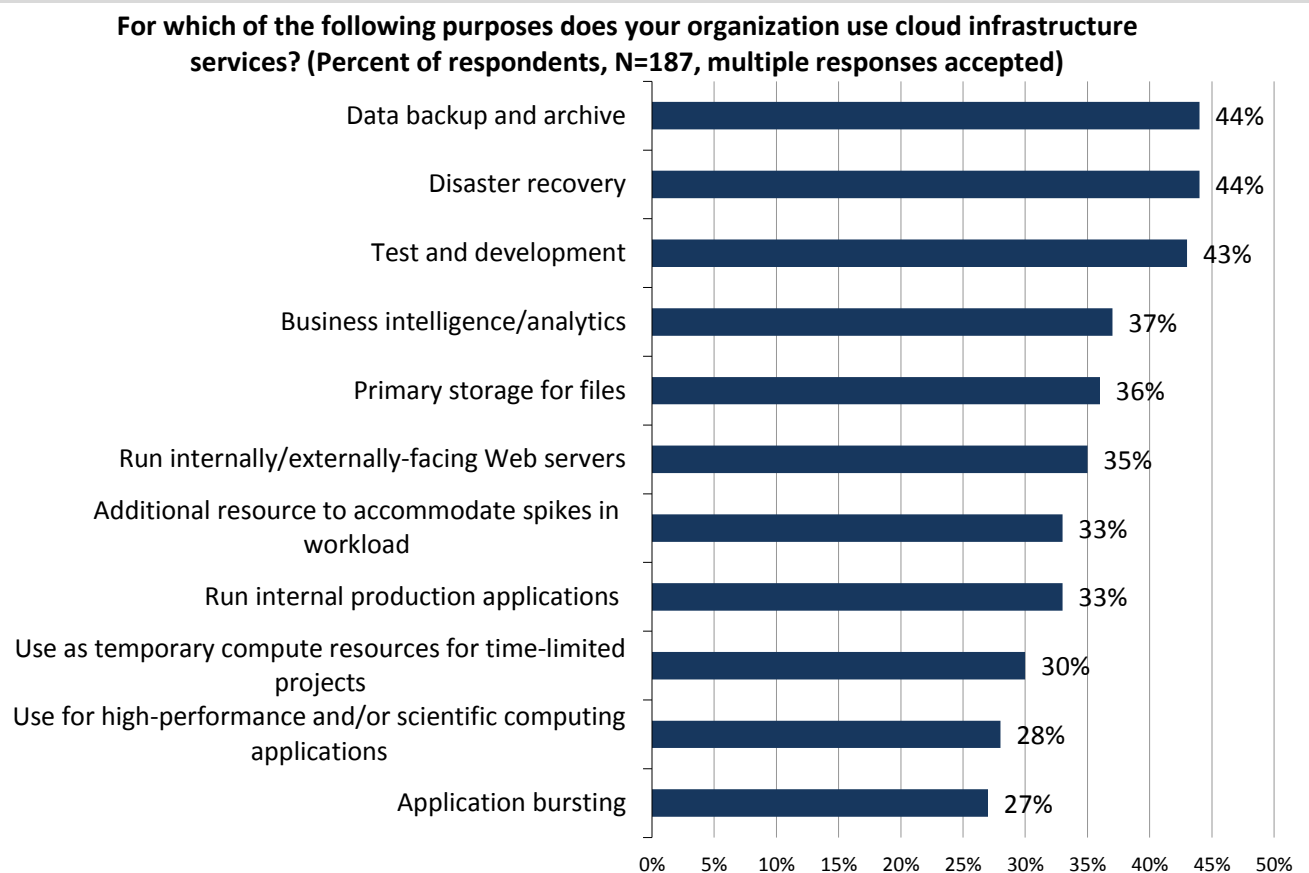
Source: Enterprise Strategy Group, 2014.

Consistent with previously conducted ESG research in the area of cloud-based data protection, data protection is the most common IaaS use case among those organizations currently leveraging cloud infrastructure services.<sup>3</sup> Specifically, 44% of these users store backup and archive data in the cloud or utilize these services as offsite disaster recovery targets (see Figure 10). Buying extra hardware and software licenses for test and development environments is not always cost effective from a CapEx or OpEx perspective, so it follows that 43% of current IaaS users would leverage cloud-based

<sup>3</sup> Source: ESG Research Report, [Data Protection-as-a-service \(DPaaS\) Trends](#), September 2013.

CPUs for this purpose. It is worth noting that younger organizations were significantly more likely to run internal applications on and support high-performance and/or scientific computing applications with cloud-based infrastructure, reflecting their confidence in, and even reliance on, these services (see Table 3).

Figure 10. Usage of Software-as-a-service (SaaS) Increases from 2011 to 2014



Source: Enterprise Strategy Group, 2014.

Table 3. Cloud Infrastructure Service Use Cases, by Age of Organization

| For which of the following purposes does/did your organization use cloud infrastructure services? |                            |                           |                              |
|---|----------------------------|---------------------------|------------------------------|
|   | By age of organization     |                           |                              |
|   | 10 years or less<br>(N=36) | 11 to 50 years<br>(N=105) | More than 50 years<br>(N=46) |
| Run internal production applications  | 50%                        | 33%                       | 17%                          |
| Use for high-performance or scientific computing applications                                     | 44%                        | 26%                       | 22%                          |

Source: Enterprise Strategy Group, 2014.

As one of the earliest providers of cloud infrastructure services appealing to developers and enterprises alike, ESG wanted to garner insight as to the inroads Amazon has made with corporate IT staffs. As such, survey respondents were asked about their organizations' usage of the more than 30 cloud services comprising the Amazon Web Services portfolio. While overall, less than one-quarter use or have used Amazon Web Services, many of the organizations *currently* leveraging AWS consider Amazon to be their most strategic technology partner.<sup>4</sup> This is especially true of less

<sup>4</sup> Source: ESG Research Brief, [Amazon Web Services Usage Trends Foreshadow a Changing of the Guard](#), April 2014.



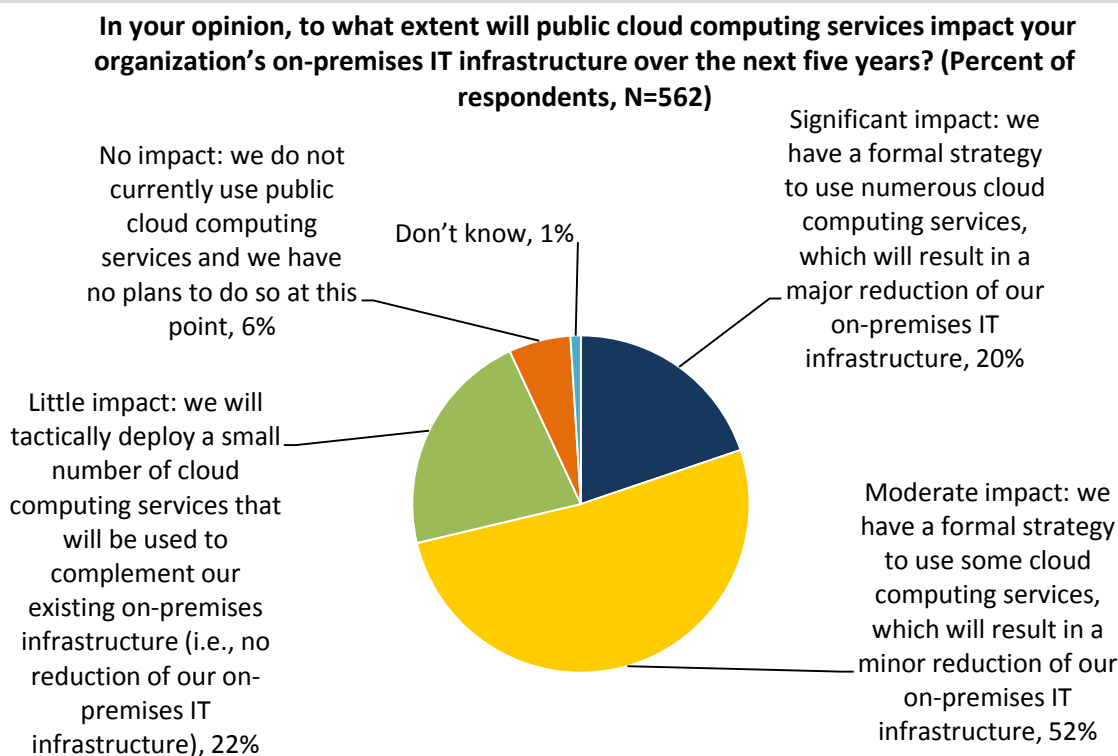
established organizations (i.e., those in operation for ten or fewer years) who are not constrained by existing IT infrastructure and/or processes.

## The Bigger Truth

ESG research confirms that the majority of IT organizations are cloud computing users today, and there is significant interest in further adoption of these services as organizations look to control costs and drive agility in their businesses. To do that, they have to be willing to divest themselves of certain application support and development activities, as well as infrastructure purchases and associated management responsibilities. Nevertheless, most current and potential users of cloud computing services—especially larger organizations—are unlikely to replace their existing onsite infrastructures wholesale in the near term.

According to Figure 11, the majority (72%) of organizations expect to have a formal cloud computing strategy within the next five years. This shift—combined with the fact that most AWS users view the company as a strategic technology partner—signals a growing understanding of the value of cloud services. One of the results of the continued shift from the data center to the cloud—in addition to the reduction of on-premises resources—will be the requirement of new approaches to operate, manage, and govern these “beyond the firewall” services.

*Figure 11. Expected Impact of Public Cloud Computing on On-premises IT Infrastructure*



Source: Enterprise Strategy Group, 2014.

While cloud computing will likely continue to serve as an extension of existing IT strategies—as opposed to a replacement of them—going forward, key benefits such as reduced IT infrastructure costs, faster resource provisioning, and improved “time to value” for new applications and IT services, combined with the ongoing dissipation of concerns over public cloud security, reliability, and data availability, will give early and potential adopters alike the confidence to entrust more critical applications and processes to cloud services over time.



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