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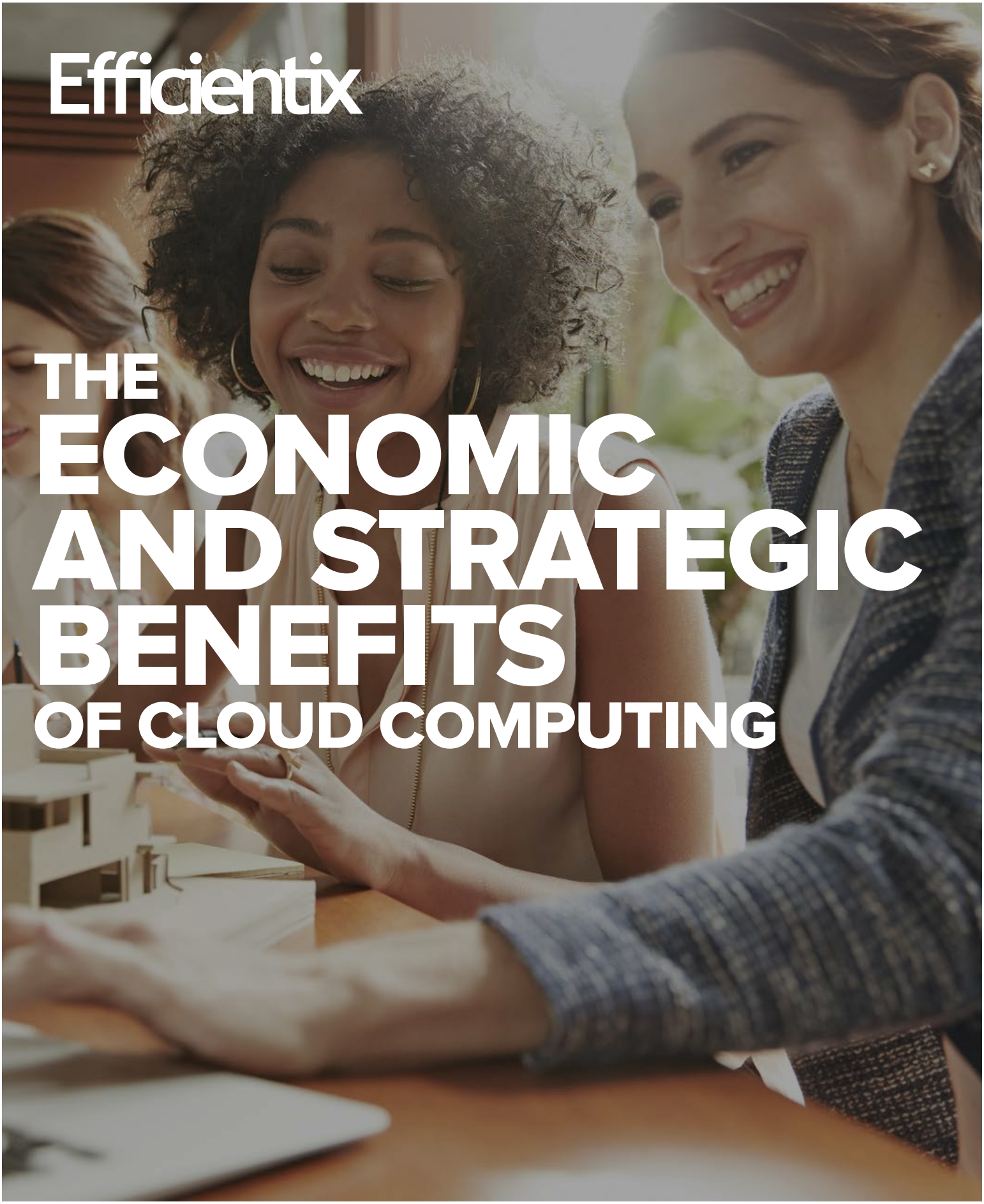

THE ECONOMIC AND STRATEGIC BENEFITS OF CLOUD COMPUTING

ORACLE NETSUITE | computer economics

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THE ECONOMIC AND STRATEGIC BENEFITS OF CLOUD COMPUTING

Does SaaS save money? Traditional vendors of IT products and services sometimes argue that systems deployed on-premise are more cost-effective over the long run than their cloud-based counterparts. They claim that while licensed software may have higher acquisition costs, they are amortized over a fixed time period in contrast to Software-as-a-Service or SaaS, subscription fees, which continue for the life of the offering in the form of recurring per-user fees.

Cloud providers, on the other hand, argue that the upfront savings are significant and that, in any event, the real benefits of SaaS are not in direct cost savings but in the strategic advantages that the cloud brings to the organization.

Which side is correct? The answer is not an academic exercise. For organizations to make intelligent decisions regarding the cloud, it is important to understand the relative costs of SaaS vs. on-premise systems.

Based on our survey of organizations that have fully or largely migrated to the cloud, we find that such organizations save on average more than 20% in IT spending as a percentage of revenue. Savings measured on a per-user basis are 16%. Savings come not only from a reduction in data center spending, but also from lower IT personnel costs. Moreover, because the cloud reduces the effort needed for ongoing support, cloud users are able to devote a higher percentage of their IT spending to new initiatives. The

cost savings, combined with strategic benefits in speed, scalability and agility, argue in favor of organizations moving aggressively to the cloud.

In this report, we describe the 13 respondents to our survey in terms of their industries and cloud portfolios. We then compare their high-level IT spending metrics against our standard industry benchmarks, document the savings they achieved, analyze their spending line items and substantiate their greater spending on innovation as opposed to ongoing support. We then outline the strategic benefits of cloud computing beyond cost savings, supported by feedback from the respondents. We conclude this study with recommendations on developing a strategic road map for full migration to the cloud.

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Chapter 1

SEARCHING FOR ORGANIZATIONS THAT LIVE IN THE CLOUD

Since 1990, Computer Economics has been surveying IT organizations in the U.S. and Canada in order to publish our annual IT Spending and Staffing Benchmarks study. Through this quarter-century of research, we understand what businesses spend on information technology by industry sector and organization size. We also collect detailed benchmarks on how organizations spend their IT budgets and how they allocate IT personnel to various job functions. The metrics we publish are used by IT organizations and consulting firms to benchmark IT spending and staffing.

Recently, in order to analyze the economic characteristics of cloud computing, we created a special sample of IT organizations in our survey that rely on cloud systems for a significant portion of their application portfolio. To gain further insight, we gathered additional information from these respondents to better understand their experience with cloud computing. We then compared each respondent's IT budget and staffing levels with each respondent's industry benchmarks, and analyzed the results.

In conducting our cloud study, we are not comparing the cost of individual cloud-based systems vs. similar systems deployed on-premises. Rather, we are comparing the IT spending characteristics of organizations that have moved largely to the cloud to our industry benchmarks. If an organization moves only a single system to the cloud, it does not reduce the size of its IT infrastructure or data center support staff in a significant way. The enterprise will still need data centers and related personnel to support systems that remain on-premise. Therefore, to truly determine whether SaaS saves money, we assess IT spending by organizations that have moved all or most of their applications to the cloud.

As expected, it is not easy to find a large number of such companies. To be sure, there are many companies in the range of five to 10 employees, such as many small professional services firms, that have no IT infrastructure on-premise. But our benchmarks are not easy to apply to such small organizations. Finding larger organizations that have moved most of their systems to the cloud is not an easy exercise.

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By lowering our size requirements a bit, however, we were able to obtain responses from 13 organizations with more than $40 million in annual revenue that had moved a large percentage of their systems to the cloud, as shown in Figure 1. They come from a variety of industries, including manufacturing, high tech, life sciences, construction, automotive, wholesale distribution, professional services, online media and IT services businesses. They are not all small companies; the largest is an organization with $2.5 billion in annual revenue.

For simplicity, in the remainder of this study, we refer to these organizations as “cloud users” or “cloud respondents".

Figure 1: Demographics of Cloud Survey Respondent

Number of Respondents	13
Geographic Location	U.S. and Canada
Annual Revenue	$40 million to $2.5 billion
Employees	135 to 12,000
Industry Sectors	Manufacturing, high tech, life sciences, construction, automotive, wholesale distribution, professional services, online media and IT services

Source: Computer Economics, 2016

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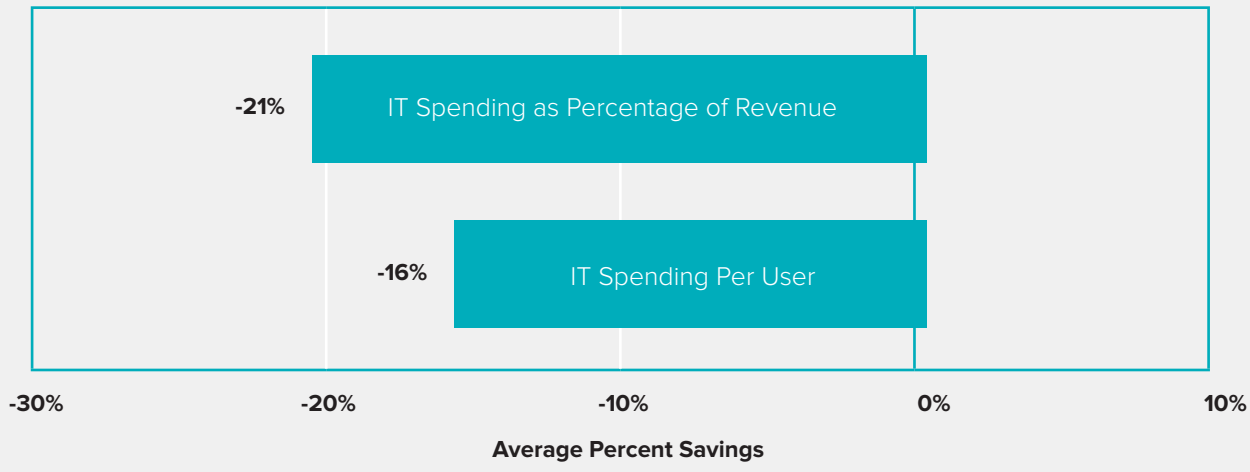
Chapter 2

CLOUD USERS ENJOY SIGNIFICANT SAVINGS

Our first exercise compares overall IT spending levels of cloud users against our industry benchmarks. Because IT spending levels are industry-specific, we need to compare each organization's IT spending against the median for the respondent's industry and calculate the difference—positive or negative. We can then average the differences across the sample of cloud users.

Figure 2 shows these results for two metrics. On average, cloud users spend 21% less on IT as a percentage of revenue and 16% less on IT on a per-user basis than other organizations in their sectors.

Figure 2: Average Savings in IT Spending: Cloud Respondents vs. Benchmarks



Source: Computer Economics, 2016

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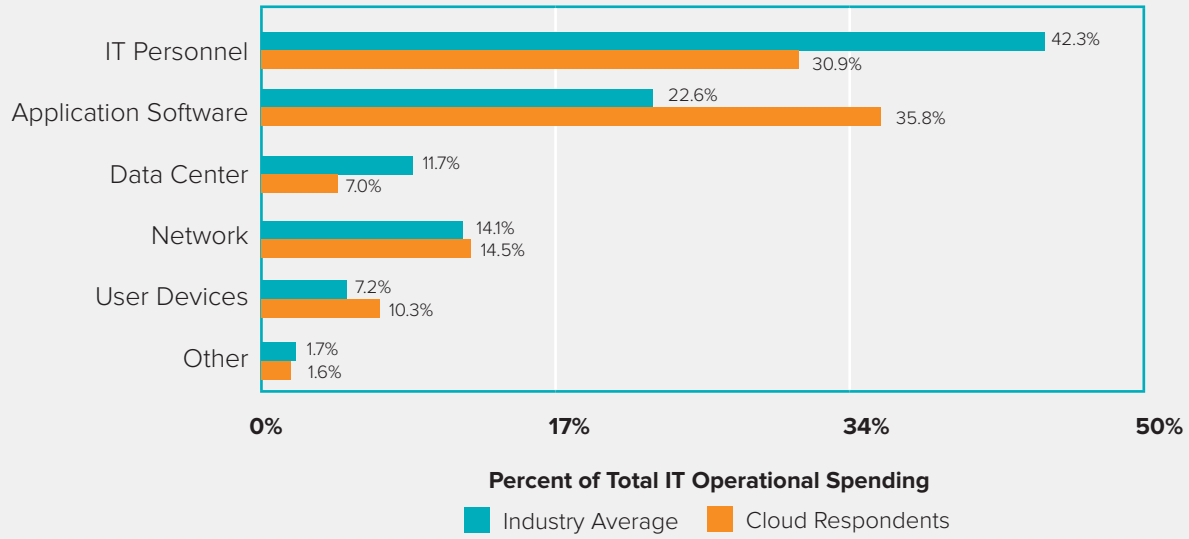
Savings Go Beyond Data Center Spending

To better understand where the savings come from, we next compare the line-item mix of IT spending for cloud users against the mix in our industry benchmarks. In this comparison, we roll up the detailed IT budgetary line items into larger categories, as shown in Figure 3.

Figure 3: IT Spending Mix: Cloud Respondents vs. Benchmarks



Source: Computer Economics, 2016

The analysis produces the following findings:

- As expected, cloud users show a significant reduction in data center spending. Our industry average shows 11.7% of the IT budget allocated to data center spending, while cloud users only spend 7.0% of their IT budget on data center infrastructure. This percentage is not zero because many of our cloud users still have some on-premise systems. Cloud providers can deliver these services less expensively because they pool computing resources for many customers, realizing economies of scale that few organizations can attain on their own.
- Cloud users also achieve significant savings in IT personnel expenses. IT staff compensation is the largest line item in the typical IT budget, at 42.3%. But cloud users only allocate 30.9% of their IT spending to personnel. These savings primarily come from reduction or elimination of data center staff, as well as improved productivity of

- application personnel who can work with more productive application platforms, such as Platform-as-a-Service (PaaS). Furthermore, because SaaS minimizes the burden of version upgrades, application personnel are more productive and able to focus on higher-value activities, such as implementing new functionality and business process improvement.
- The allocation for end-user devices, such as desktop and laptop computers, smartphones, tablet computers and printers, shows an increase for cloud companies, at about 10% of the IT budget vs. about 7% for our industry benchmarks. This may be because companies that are forward-thinking in moving to the cloud may also be forward-thinking in their use of mobile devices.
- There is virtually no difference in IT spending for networks, which is at the 14% level. This finding is not surprising. Employees and facilities need connectivity to systems, whether they are on-premise or in the cloud.
- Application software is the one line item that shows a significant increase, at nearly 36% of the IT budget, compared with about 23% for our industry benchmarks. This is not surprising. With cloud systems, the cost of on-premise infrastructure and personnel to support it shifts to the cloud vendor in the form of application subscription fees.

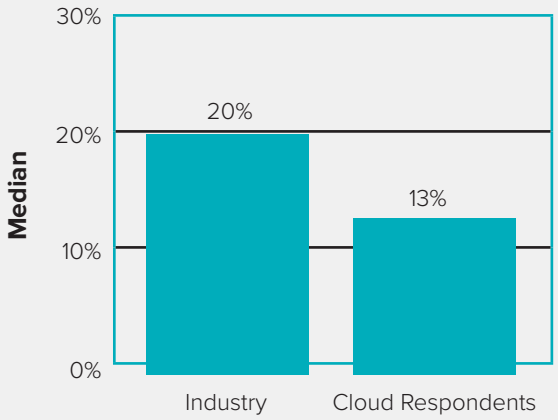
Essentially, IT spending is moving from a low-value line item, infrastructure, to a high-value line item, business applications.

Because most of our cloud respondents have not yet eliminated all of their on-premise systems, Figure 3 represents a conservative view of this shift in value. The more companies move to the cloud, the more IT spending is focused on higher-value services to the business.

Cost Savings from Fewer Customizations

Cloud applications may lead to lower overall IT spending for another reason: organizations tend to customize cloud systems less often than they do traditional licensed software. Figure 4 shows that for the median cloud

Figure 4: Custom Software as Percentage of Application Portfolio

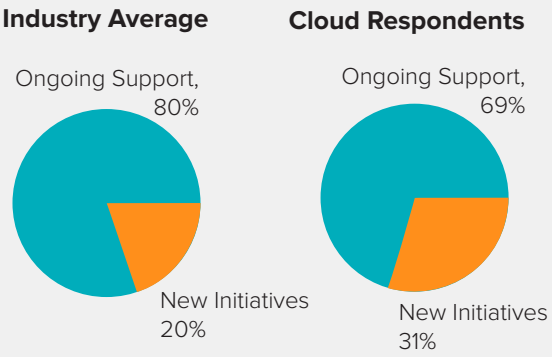


Source: Computer Economics, 2016

respondent in our survey, custom software comprises 13% of the application portfolio. The industry median for this metric is 20%.

Modern cloud applications generally provide capabilities for the customer or implementation partner to tailor the software to specific customer needs. In some cases, customers can build extensions or entire custom applications using the vendor's PaaS capabilities. Because such customizations or extensions generally carry forward with new versions of the system, they do not drive the same level of support requirements as is the case with modifications to traditional on-premise software.

Figure 5: IT Spending on Ongoing Support vs. New Initiatives



Source: Computer Economics, 2016

Cloud Users Spend More on Innovation

Our analysis indicates cloud users spend a greater percentage of their IT budgets on new initiatives and less on ongoing support of existing systems. Figure 5 shows that organizations across all industries currently spend about 80% of their IT budget on ongoing support, leaving only about 20% for new initiatives. Cloud users, on the other hand, only allocate about 69% of their IT budget for ongoing support, leaving about 31% for deploying new systems and capabilities.

So, not only do cloud users spend less on IT overall, but what they do spend is more heavily weighted toward innovation.

The implications of this finding should not be underestimated. In today's economy, few organizations give a blank check to the IT department. Yet user demand for new systems and IT capabilities continues to increase. In addition, business leaders demand new systems, better analytics, mobile deployment and a whole host of capabilities to help them better compete in today's global economy. If IT budgets are limited, where can IT leaders find the resources to satisfy these demands? The only answer is to become more efficient in how the IT organization supports existing systems. Our research finds that cloud computing accomplishes this objective.

Cloud Benefits Go Beyond Cost Savings

Although our analysis indicates there are significant cost savings in moving an organization to the cloud, there also are strategic advantages. Our research identifies four strategic benefits of SaaS, beyond the obvious reduction of IT infrastructure, which respondents rated as the most important benefit.

1. Speed of implementation: SaaS eliminates all the upfront activities for installing hardware and software, allowing customers to immediately begin configuring and focus on business process design. In addition, the vendor assumes all responsibility for applying patches and fixes required during the course of the implementation. "Cloud gives us faster implementation and corresponding time to market," wrote one CIO.

2. Scalability: Resource pooling and rapid elasticity are essential characteristics of cloud computing. These allow cloud applications to scale instantly to meet both short-term and long-term increases in transaction volume, storage requirements or network bandwidth. Few internal IT organizations can afford to maintain excess computing capacity to accommodate variability in demand or as a contingency for future needs. Cloud computing ensures that, from the standpoint of computing resources, the customer will never outgrow the system.

3. Ease of upgrades: With on-premise software, many problems are related to customers being on different versions of operating systems, databases and middleware. In some cases, customers have modified source code, leading to further complications. Therefore, when fixing bugs, vendors need to re-create and solve problems for each customer's specific configuration. With the best-designed SaaS applications, there is only one version, eliminating these problems.

   Furthermore, many SaaS providers give customers access to new features without forcing them to go through periodic version upgrades. The best SaaS providers push out new functionality to customers on a more frequent basis, allowing faster consumption, with little or no action required on the customer's part. As a result, organizations upgrade their cloud-based systems much more often, more rapidly consuming new features from the software provider and leading to further innovation. The minimization or elimination of version upgrades makes IT personnel more productive and allows them to focus on activities that have more value to the business. It also mitigates the risk of the system slowly becoming obsolete through customer failure to apply version upgrades.

4. Agility: With on-premise systems, organizations may need significant lead time to add a new production facility, enter a new international market or assimilate a new acquisition. Such changes may require the addition of a new system instance or even worse, addition of a new data center. Fast-growing organizations find that cloud-based systems remove such impediments to growth. Cloud systems are much more flexible, allowing new facilities or new international territories to be added without adding new hardware or system instances.

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CONCLUSION

Most Organizations Should Move Aggressively to the Cloud

Our research refutes the claim of traditional technology vendors that on-premise systems over the long run are more cost-effective than cloud-based systems. As we have shown, the total cost of running an IT organization that is largely in the cloud is significantly less than one that relies on its own IT infrastructure

Beyond cost savings, the strategic benefits of cloud computing—speed, scalability, ease of upgrades and flexibility—argue strongly in favor of SaaS as the center of the IT strategy for most organizations.

Does this mean that every IT organization should move to the cloud? Despite these financial and strategic benefits, there may be cases where organizations need to retain their on-premise systems. Examples include situations where the public network infrastructure is not reliable enough for remote access, as in some developing countries or even in some rural areas in developed countries. Concerns about security, privacy and loss of control—whether justified or unjustified—also may inhibit a wholesale move to the cloud. Our research indicates IT executive concerns in these areas are lessening, but in some cases, business leaders have not yet overcome them. Traditional vendors of on-premises systems continue to stoke these fears about cloud computing.

Nevertheless, for most organizations, our research indicates that an aggressive strategy to move most or all of the organization's IT systems to the cloud is justified. To those IT leaders ready to pursue this strategy, we make the following recommendations:

- Make explicit management's commitment to the cloud. It is difficult for an IT leader alone to pursue a cloud migration strategy without firm management backing. Get these commitments upfront before investing effort in developing a cloud migration strategy.
- Conduct an application portfolio health assessment. Most organizations have a collection of application systems in various conditions. Some are adequately meeting the user needs; others are in need of

replacement. Still others have problems that could be resolved with a system upgrade. Understanding the priorities for upgrading or replacing existing applications is a critical first step in developing a road map for migration to the cloud.

- Make cloud the preferred deployment option for new applications. There is no way to move to the cloud if the IT organization continues to implement new systems on-premises. Gain management commitment for the IT maxim that cloud deployment is the default option.
- Replace problematic applications with cloud equivalents. Most mature organizations have a certain percentage of applications that are not satisfying users and need replacement. Replacing such applications with newer cloud alternatives is an opportunity to kill two birds with one stone.

Once the health check has been completed and the future of each application system is determined, the organization's long-term IT road map can be refreshed. The IT strategy will spell out a series of initiatives to replace, upgrade and migrate each system to the cloud or to other off-premise providers. The good news is that, as our survey shows, the organization will begin to realize cost savings and other benefits of cloud deployment even if some systems remain on-premise. As long as there is a significant movement to the cloud, the organization will begin to enjoy the benefits.

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