



FROM TACTIC TO STRATEGY:

The CDW 2011 Cloud Computing Tracking Poll

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INTRODUCTION



CDW's first Cloud Computing Tracking Poll surveyed 1,200 IT professionals in U.S. organizations* to determine:

- Where organizations are with cloud adoption
- What benefits are driving adoption
- What challenges still hinder progress
- Recommendations for how organizations can successfully implement cloud computing

In the survey, we defined cloud computing as a "model for enabling convenient, on-demand access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned."

Throughout the report, we refer to "cloud users" as those organizations that identified themselves as implementing or maintaining cloud computing.



*Small, medium and large businesses; Federal, state and local government agencies; healthcare organizations; and K-12 and higher education institutions

KEY FINDINGS

- **While many organizations are using cloud-based applications, few have a formal adoption strategy for cloud computing:**
 - 84% of IT managers say their organization employs at least one cloud application
 - However, when asked the status of cloud computing within their organization, just over a quarter defined themselves as “cloud users*,” saying they were implementing or maintaining the technology
 - Only 38% say their organization has a written strategic plan for cloud adoption
- **Organizations’ assessment of cloud ROI shifts as they implement:**
 - 84% of cloud users* say they reduced the costs of applications moved to the cloud
 - However, just one-third of all IT managers surveyed believe cloud applications cost less than traditional applications
- **Security of data in the cloud is a top concern, but not addressed consistently:**
 - Both cloud users* and non-users** say security concerns are holding them back from further adoption
 - Even cloud users* are missing key opportunities to secure data in the cloud
- **IT managers anticipate spending no more than one-third of their IT budget on cloud computing within five years:**
 - Current cloud users* predict one-third (34%) of their 2016 IT budget will be spent on cloud resources and applications
 - Five years from now, those not currently in the cloud project they will spend slightly more than one quarter (28%) of their budget on cloud

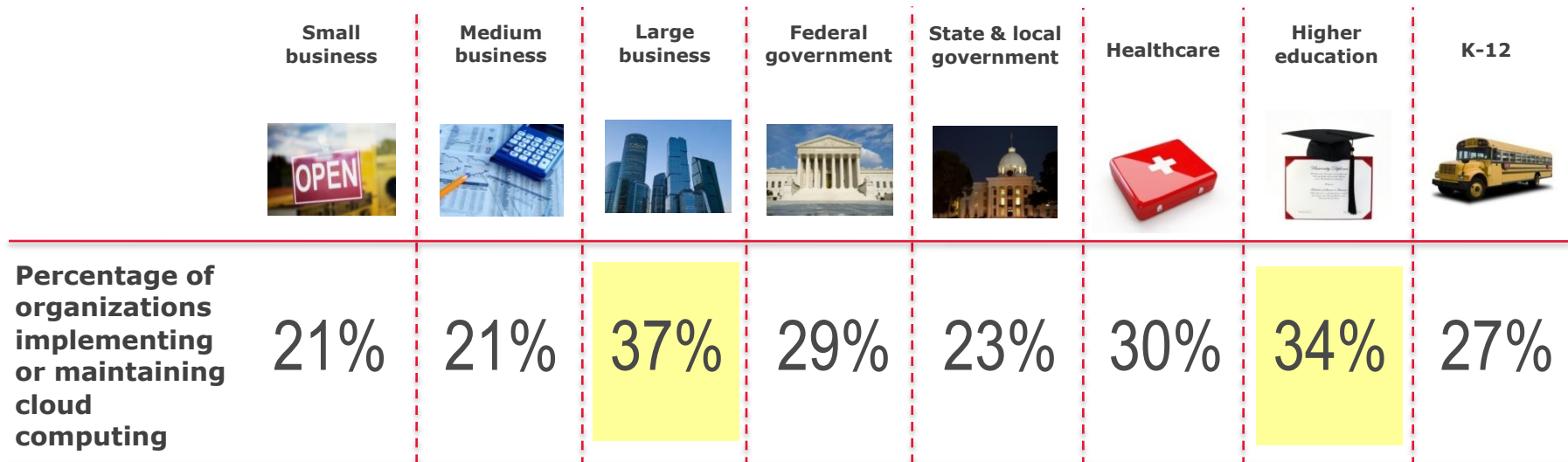
*Those implementing or maintaining cloud computing (n=320) **Those not yet implementing or maintaining cloud computing (n=880)

INDUSTRY CLOUD ADOPTION



- Large businesses and higher education institutions lead on cloud adoption

Overall, what is the status of cloud computing within your organization?*



“Understand your organization’s requirements and needs, and then take measured, quantifiable steps when implementing cloud computing.” – IT director/manager, medium business

*Asked of all respondents (n=1,200)

ORGANIZATIONS USE CLOUD APPLICATIONS



- Most organizations (84%) say they employ at least one cloud application. The most commonly used cloud services are commodity applications

| Which of the following tools does your organization currently employ?* | |
|--|----------------------------------|
| 34% | Gmail |
| 29% | Google Docs |
| 29% | Microsoft LiveMeeting |
| 28% | WebEx |
| 24% | GoToMeeting |
| 23% | Microsoft Office 365 and/or BPOS |
| 12% | Dropbox |
| 12% | SalesForce |
| 16% | None of the above |



“Each application must be evaluated separately based on several factors. It's **not simply a matter of deciding to 'go cloud.'**” – IT director/manager, higher education institution













*All respondents asked to select all that apply (n=1,200)

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APPLICATION USE VARIES BY INDUSTRY



- While online office/productivity suites and conferencing services are the dominant public cloud applications, use varies by industry

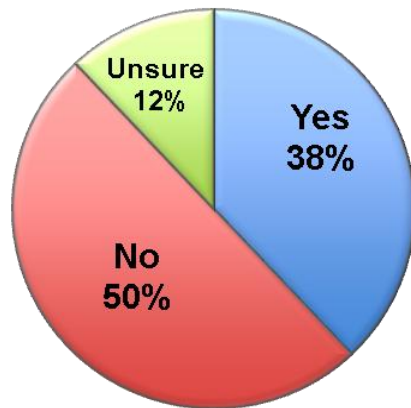
| Percentage that use each of the following applications: | Small business  | Medium business  | Large business  | Federal government  | State & local government  | Healthcare  | Higher education  | K-12  |
|--|---|--|---|--|---|---|---|---|
|  | 45% | 47% | 27% | 17% | 23% | 24% | 50% | 39% |
|  | 31% | 27% | 17% | 10% | 20% | 18% | 50% | 57% |
|  | 17% | 29% | 43% | 41% | 30% | 39% | 22% | 9% |
|  | 23% | 22% | 27% | 5% | 4% | 12% | 2% | 1% |
| None of the above* | 14% | 9% | 5% | 27% | 21% | 16% | 18% | 17% |

*Do not use Gmail, Google Docs, Microsoft LiveMeeting, WebEx, GoToMeeting, Microsoft Office 365 and/or BPOS, Dropbox or Salesforce

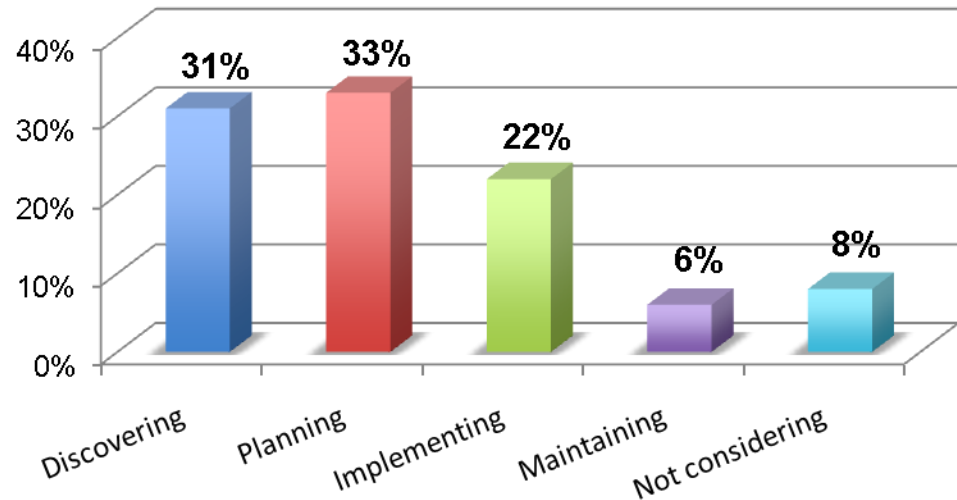
FEW HAVE FORMAL ADOPTION PLANS

- While many organizations are using cloud-based applications, few have a formal adoption strategy for cloud computing

Does your organization have a written strategic plan for the adoption of cloud computing?*



Overall, what is the status of cloud computing within your organization?*



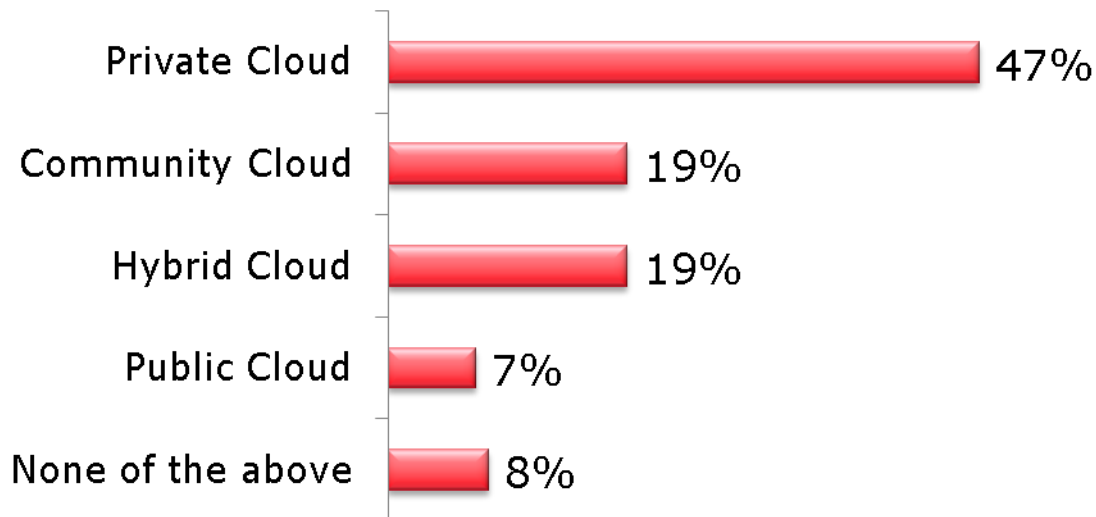
*Asked of all respondents (n=1,200)

IT PREFERS PRIVATE CLOUDS



- IT managers say their organizations are most likely to use a private cloud approach

Which of the following cloud approaches is your organization most likely to use? Please select one.*



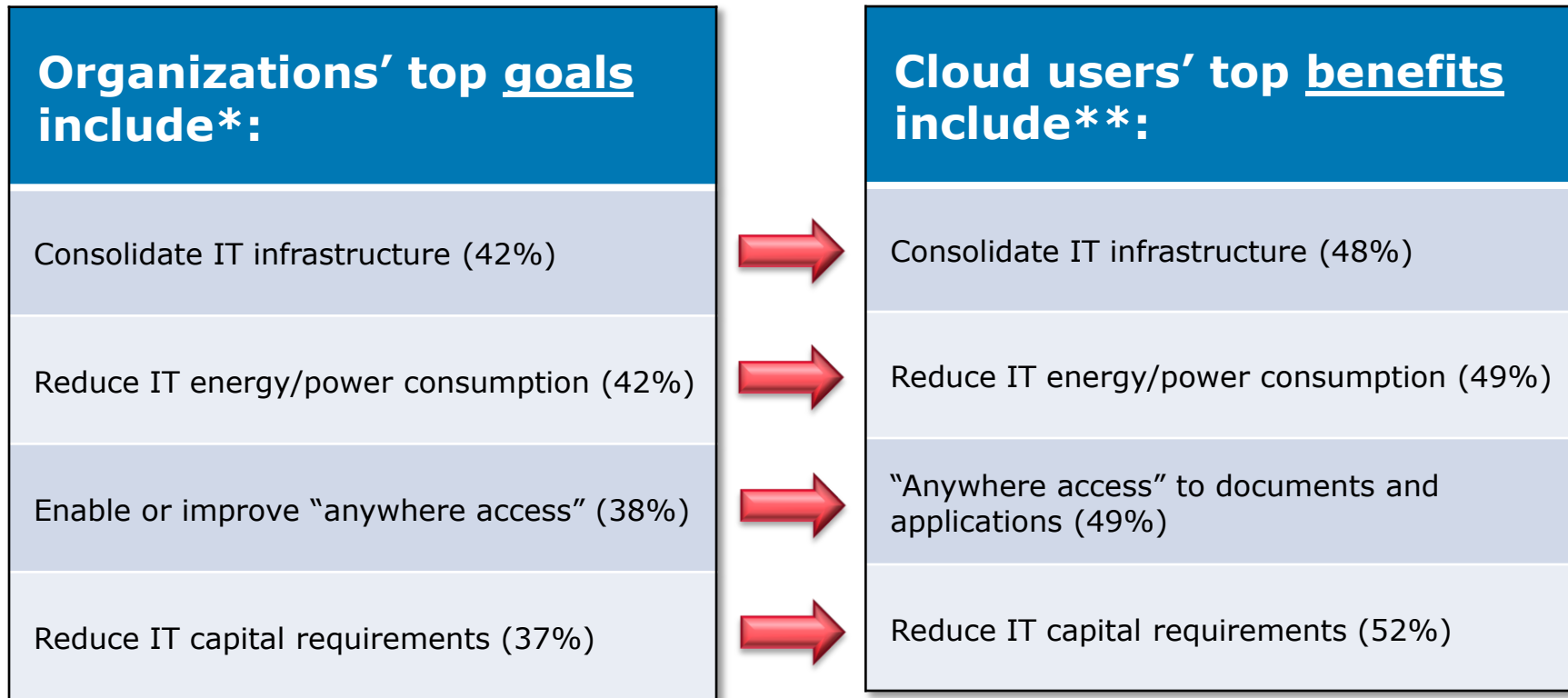
Despite the use of public cloud apps, few IT managers expect their organizations to select a public cloud over a private cloud

*Asked of all respondents (n=1,200)

CLOUD BENEFITS ALIGN WITH ORGANIZATIONAL GOALS



- Cloud computing is helping organizations make progress toward key goals



*What formal goals does your IT department have for the next two years? All respondents asked to select all that apply (n=1200)
**Which of the following do you believe are very significant benefits of cloud computing to your organization? Cloud users asked to select all that apply (n=320)

ORGANIZATIONS STEP CAREFULLY INTO THE CLOUD



- Cloud users most often begin with a single cloud application. Most also share key characteristics

73%

of cloud users* implemented a **single cloud application** as their first step.

Today's cloud user* profile:

- 73%** have centralized IT management
- 57%** deployed virtualization
- 51%** defined a five-year technology roadmap for their organization

Cloud users* operate the following applications in the cloud today**:

- #1** E-mail (50%)
- #2** File storage (e.g., SharePoint, Dropbox) (39%)
- #3** Office productivity suite (37%)
- #4** Web conferencing (36%)
- #5** Online learning (34%)
- #6** Video conferencing (32%)

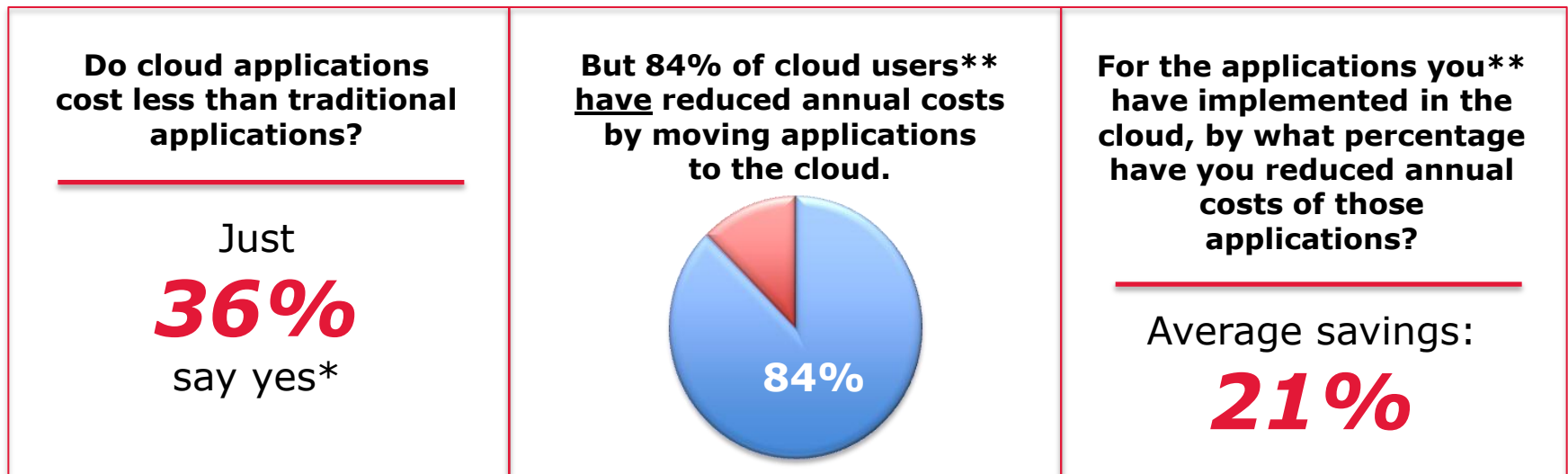
"Implement single applications on a small scale and compare available options before committing. Test, test, test!" – IT director/manager, small business

*Those implementing or maintaining cloud computing (n=320) **Respondents asked to select all that apply

CLOUD USERS SAVE



- 84% of cloud users successfully reduced the cost of their applications in the cloud



“Make sure you have a **full understanding** of the business case.” – IT systems engineer, Federal agency

“Understand who owns your data and the **true cost model.**” – Chief/deputy chief technology officer, small business organization

*Asked of all respondents (n=1,200) **Those implementing or maintaining cloud computing (n=320)

CLOUD FORECAST SHOWS MODERATE GROWTH



- Organizations anticipate spending no more than one-third of the IT budget on cloud computing within five years

All respondents: Based upon cloud technologies and services available today, what percentage of your organization's IT services and applications do you think could be run in the cloud?

42%



What percentage of your organization's IT budget do you expect to spend on cloud resources and applications:

| | Cloud users* | Cloud non-users** |
|----------------------|--------------|-------------------|
| Two years from now? | 26% | 18% |
| Five years from now? | 34% | 28% |

What percentage of your organization's IT budget do you expect to save using cloud resources and applications:

| | Cloud users* | Cloud non-users** |
|----------------------|--------------|-------------------|
| Two years from now? | 22% | 15% |
| Five years from now? | 31% | 23% |

"Cost reduction is a **long-term** – not short-term – goal." – IT director/manager, K-12 school district

*Those implementing or maintaining cloud computing (n=320) **Those not yet implementing or maintaining cloud computing (n=880)

SECURITY CONCERNS HOLD MANY BACK



- Cloud users and non-users say security concerns hinder further adoption

What, if anything, is holding your organization back from adopting or further implementing cloud computing?

32% & **45%**
of cloud users* of non-users**

say “security concerns”

Top roadblocks among all respondents:

- #1: Security concerns (41%)
- #2: Cost concerns (40%)
- #3: Privacy regulation/ requirement compliance concerns (26%)

All those with security concerns:

What specifically are your cloud security concerns? Please select all that apply.***



My organization's management does not trust the cloud's data security



We (IT management) do not believe the cloud is as secure as our own facility



My organization's users do not trust the cloud's data security

*Those implementing or maintaining cloud computing (n=320) **Those not yet implementing, maintaining, or considering cloud computing (n=880) ***Users and non-users with security concerns (n=493)

CLOUD USERS MISS KEY SECURITY STEPS



- Despite security concerns, security protections for data in the cloud are often lacking

What steps is your organization taking to secure your data in the cloud? Please select all that apply.*

- 54%** Encrypt transmitted data
- 50%** Manage access to cloud applications by staff
- 44%** Password changes every 90 days
- 38%** Intrusion detection
- 38%** Daily hardware/software patch release monitoring and updates
- 37%** 24-hour room monitoring for data center and locked data center
- 31%** Certification of security measures taken by our cloud vendor(s)
- 26%** Annual structured information security training for all employees



“Engage your compliance and audit teams in decisions; set policies on **security requirements** for a cloud vendor before putting your information assets out in the cloud.” – Chief/deputy chief information officer, healthcare organization

*Those implementing or maintaining cloud computing (n=320)

PLANNING FOR THE CLOUD



- **Develop your vision**
 - Understand where your leadership wants to take your organization
 - Build an IT strategy and gain executive sponsorship
 - Commit to a timeline
- **Assess your IT assets**
 - Get control of IT costs and conduct full data center assessments
 - Evaluate IT skills and disaster readiness
- **Embrace IT governance**
- **Invest in validated architecture**
 - Develop enterprise architecture
 - Establish capacity planning discipline
 - Evaluate IT skills and disaster readiness
- **Virtualize everything**



KEY CONSIDERATIONS FOR PRIVATE CLOUDS



- **IT governance** is mandatory, ensuring cloud efficiency and stability
- **Building your own cloud** may be
 - More time-consuming
 - Heavy on scripting requirements
 - Costlier than an automated, integrated, validated solution
- **Reality check**
 - Building a private cloud is similar to becoming a cloud hosting provider
 - Competitors with private clouds will be able to deliver IT services faster



KEY CONSIDERATIONS FOR PUBLIC CLOUDS



- **Get to know your provider**

- Security and compliance: "How secure is your cloud, and can I audit it?"
- Service level agreement rebates: "Do I get a rebate if the cloud goes down?"
- Reporting and metrics: "Will I have a services dashboard?"
- Business continuance: "Does my service have recovery built in?"
- Access architecture: "How will I connect to the service?"
- Capacity planning: "Will my capacity scale for my needs?"
- Total cost of operation: "Will the solution be more cost effective than what I have today?"

- **Reality check**

- Independent software vendors will bring new features to market faster with cloud applications
- Start planning today; understand your "cost to serve" per application to determine ROI for public cloud solutions

METHODOLOGY AND DEMOGRAPHICS



- CDW hired O’Keeffe & Company to conduct an online survey of 1,200 IT decision makers in March 2011. The sample size results in a margin of error of $\pm 2.7\%$ at a 95% confidence level. The margin of error for industry sub-groups is $\pm 8.0\%$ at a 95% confidence level

| IT decision makers | Titles | Organization size |
|---|--|--------------------------------|
| 100% of respondents are familiar with their organization’s use of, or plans for, cloud computing | 11% Chief/Deputy Chief Information Officer | 15% Less than 50 employees |
| | 7% Chief/Deputy Chief Technology Officer | 11% 50-99 employees |
| | 36% IT Director/Manager | 22% 100-499 employees |
| | 34% IT Supervisor/Specialist | 35% 500-10,000 employees |
| | 12% IT Systems Engineer | 17% More than 10,000 employees |

| Small business (20-99 employees) | Medium business (100-499 employees) | Large business (500+ employees) | Federal government | State/local government | Healthcare | Higher education | K-12 public school districts |
|---|--|------------------------------------|---|--|--|--|---|
| N = 150 | N = 150 | N = 150 | N = 150 | N = 150 | N = 150 | N = 150 | N = 150 |
| 64% Less than 50 employees 36% 50-99 employees | 25% Public 75% Private | 66% Public 34% Private | 63% Federal civilian 37% Department of Defense | 45% State 26% County 29% Municipal | 79% Hospital/medical center 12% Doctor’s office 9% Long-term care facility | 31% Private 69% Public 88% Four-year college 9% Community college 3% Other | 37% Less than 2,500 students 38% 2,500-9,999 students 25% 10,000 students or more |

APPENDIX



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INDUSTRY CLOUD ADOPTION



| | Small business | Medium business | Large business | Federal government | State & local government | Healthcare | Higher education | K-12 |
|--|----------------|-----------------|----------------|--------------------|--------------------------|------------|------------------|------|
| Current cloud status: | | | | | | | | |
| Have a written strategic plan for the adoption of cloud computing | | | | | | | | |
| Stage of adoption: | | | | | | | | |
| • Discovery | 37% | 24% | 23% | 27% | 35% | 37% | 32% | 37% |
| • Planning | 34% | 48% | 35% | 38% | 26% | 22% | 29% | 28% |
| • Implementing | 18% | 18% | 29% | 20% | 20% | 25% | 28% | 18% |
| • Maintaining | 3% | 3% | 8% | 9% | 3% | 5% | 6% | 9% |
| • Not considering | 8% | 7% | 5% | 6% | 16% | 11% | 5% | 8% |

SMALL BUSINESS

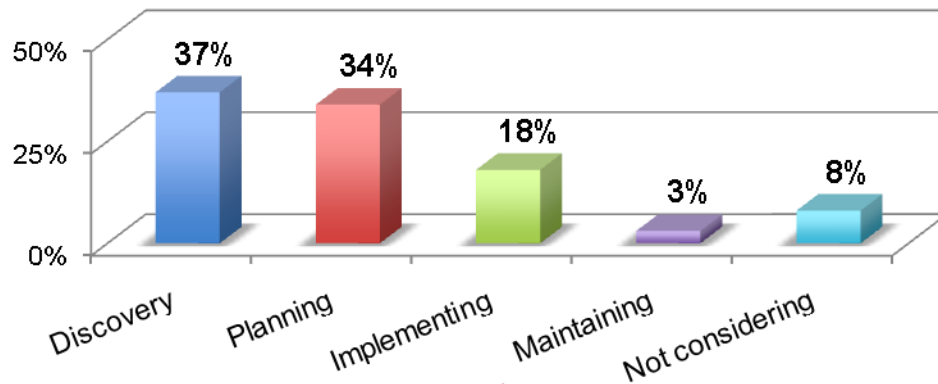


Current cloud adoption:

35%

of small businesses have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



76% of small business cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **24%**

Cloud forecast:

The average percentage of IT budget small businesses expect to spend on cloud computing in:

- Two years: **23%**
- Five years: **30%**

The average percentage of IT budget small businesses expect to save with cloud computing in:

- Two years: **20%**
- Five years: **26%**

*Those implementing or maintaining cloud computing (n=31)

MEDIUM BUSINESS

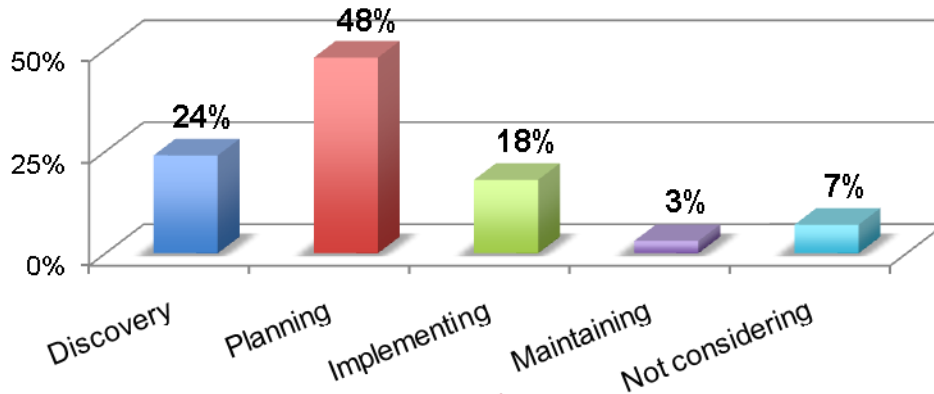


Current cloud adoption:

39%

of medium businesses have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



100% of medium business cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **20%**

Cloud forecast:

The average percentage of IT budget medium businesses expect to spend on cloud computing in:

- Two years: **24%**
- Five years: **35%**

The average percentage of IT budget medium businesses expect to save with cloud computing in:

- Two years: **20%**
- Five years: **31%**

*Those implementing or maintaining cloud computing (n=31)

LARGE BUSINESS

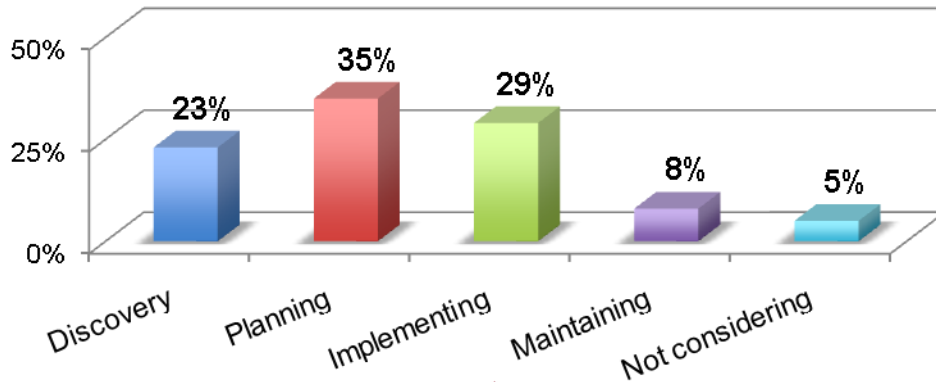


Current cloud adoption:

59%

of large businesses have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



86% of large business cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **21%**

Cloud forecast:

The average percentage of IT budget large businesses expect to spend on cloud computing in:

- Two years: **23%**
- Five years: **34%**

The average percentage of IT budget large businesses expect to save with cloud computing in:

- Two years: **19%**
- Five years: **28%**

*Those implementing or maintaining cloud computing (n=53)

FEDERAL GOVERNMENT

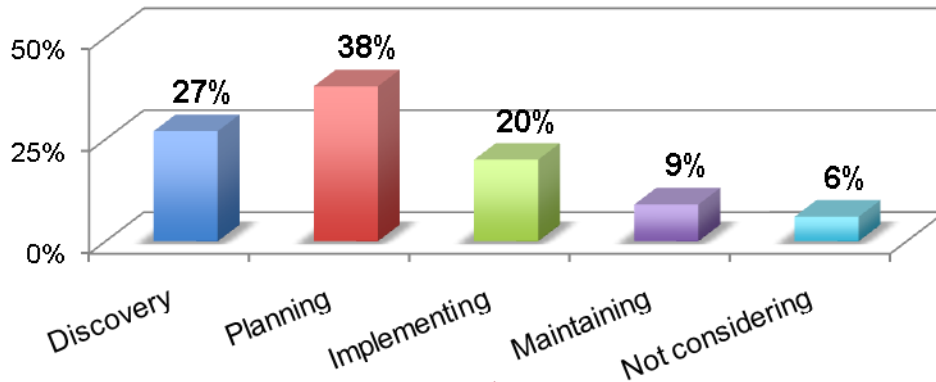


Current cloud adoption:

41%

of Federal agencies have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



82% of Federal cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **22%**

Cloud forecast:

The average percentage of IT budget Federal agencies expect to spend on cloud computing in:

- Two years: **21%**
- Five years: **32%**

The average percentage of IT budget Federal organizations expect to save with cloud computing in:

- Two years: **19%**
- Five years: **30%**

*Those implementing or maintaining cloud computing (n=41)

STATE & LOCAL GOVERNMENT

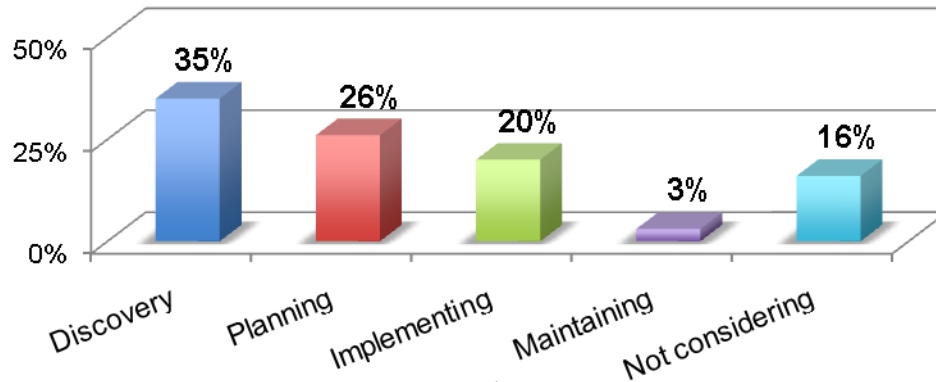


Current cloud adoption:

29%

of state and local governments have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



82% of state and local cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **14%**

Cloud forecast:

The average percentage of IT budget state and local governments expect to spend on cloud computing in:

- Two years: **16%**
- Five years: **23%**

The average percentage of IT budget state and local organizations expect to save with cloud computing in:

- Two years: **11%**
- Five years: **18%**

*Those implementing or maintaining cloud computing (n=34)

HEALTHCARE

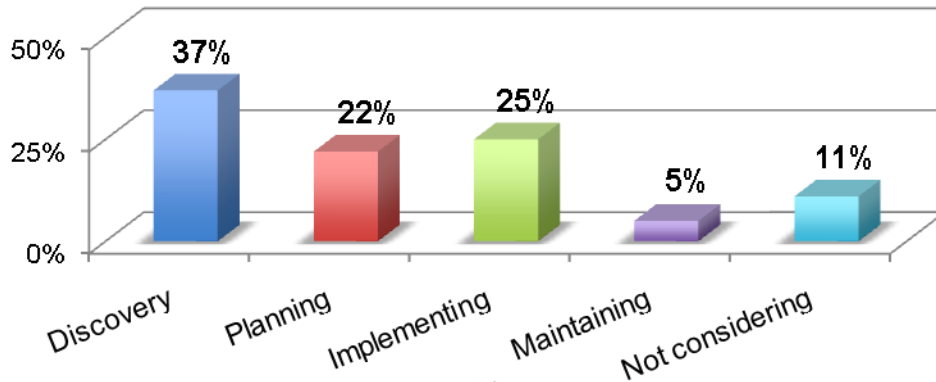


Current cloud adoption:

37%

of healthcare organizations have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



88% of healthcare cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **20%**

Cloud forecast:

The average percentage of IT budget healthcare organizations expect to spend on cloud computing in:

- Two years: **21%**
- Five years: **30%**

The average percentage of IT budget healthcare organizations expect to save with cloud computing in:

- Two years: **17%**
- Five years: **25%**

*Those implementing or maintaining cloud computing (n=43)

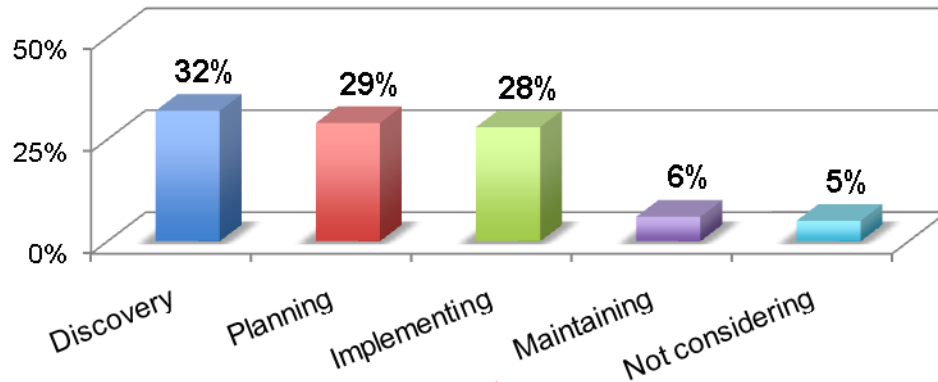
HIGHER EDUCATION

Current cloud adoption:

29%

of higher education institutions have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



76% of higher education cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **21%**

Cloud forecast:

The average percentage of IT budget higher education institutions expect to spend on cloud computing in:

- Two years: **15%**
- Five years: **24%**

The average percentage of IT budget higher education institutions expect to save with cloud computing in:

- Two years: **12%**
- Five years: **20%**

*Those implementing or maintaining cloud computing (n=48)

K-12

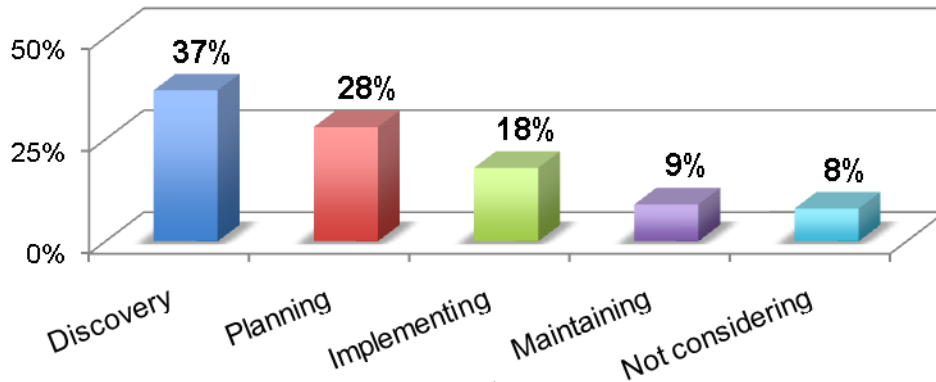


Current cloud adoption:

31%

of K-12 institutions have developed a written strategic plan for the adoption of cloud computing

Overall, where is your organization with cloud computing?



86% of K-12 cloud users* have successfully reduced the cost of applications moved to the cloud

Average savings: **28%**

Cloud forecast:

The average percentage of IT budget K-12 institutions expect to spend on cloud computing in:

- Two years: **17%**
- Five years: **27%**

The average percentage of IT budget K-12 institutions expect to save with cloud computing in:

- Two years: **15%**
- Five years: **25%**

*Those implementing or maintaining cloud computing (n=39)

Thank you.

For all media questions and inquiries, please contact:

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