CLOUD 401: NAVIGATING ADVANCED TOPICS IN CLOUD COMPUTING
The cloud market has matured, and many IT professionals are exploring advanced topics in cloud architecture and deployment, covering details of migration, financial outcomes and barriers to further adoption.

Welcome to Cloud 401 – a research report addressing those advanced topics in cloud computing.

100% of respondents to the survey behind this report work at organizations that have implemented cloud computing services as part of their IT strategy

100% of respondents participate directly in the decision making on their organization’s implementation of cloud computing services
Course Syllabus

4  The State of the Cloud
5  Prospects for Cloud Growth
6  Adoption Thus Far
7  The Cloud Experience: Mixed
8  The Essential Role of IT: Enabling and Integrating
9  Same as Ever: IT Must Plan for Service Disruptions
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11 Cloud or Traditional IT, Migration/Integration Is Key
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Organizations that have implemented cloud computing are no longer just testing the waters.

35% of IT services today are delivered totally or partially by cloud.

Of those services, 54% were migrated from traditional delivery and 46% started in the cloud.

Research Topic: What percentage of **entirely new** IT services launched recently were launched via traditional delivery vs. in the cloud?
Prospects for Cloud Growth

- Looking ahead, organizations consider delivering **35%** of entirely new IT services via cloud.

As your organization evaluates and plans entirely new IT services, approximately what percentage do you consider for either partial or total delivery via cloud?

Research Topic: Given current options, what is the maximum technical and economic potential for IT services delivery via cloud?

Looking ahead, what barriers do you see for moving more services to the cloud?

- **Security**: 47%
- **Trust in solutions**: 31%
- **Budget**: 24%
- **Management support**: 19%
- **IT headcount concerns**: 18%
Adoption Thus Far

- The most prevalent IT services in the cloud are also the easiest to transition – storage, email and Web hosting

![Bar chart showing adoption rates of various IT services.]

**Research Topic:**
Customers are pursuing what they perceive as easy. Are they doing so by accident or design?

- Easiest to transition to the cloud
- Percentage of organizations delivering via the cloud
The Cloud Experience: Mixed

- Organizations report mixed reactions regarding the hype vs. realities surrounding the cloud – and for some, the conversation is ongoing

What parts of the cloud hype were most true and most false?

<table>
<thead>
<tr>
<th>Benefit</th>
<th>True</th>
<th>False</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>19%</td>
<td>7%</td>
</tr>
<tr>
<td>Ease of Administration</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>Cost Savings</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>Ease of Use</td>
<td>16%</td>
<td>7%</td>
</tr>
<tr>
<td>Security</td>
<td>11%</td>
<td>21%</td>
</tr>
</tbody>
</table>

Research Topic: Why is the experience compared to many of cloud’s hyped benefits so mixed?
The Essential Role of IT: Enabling and Integrating

- In the average cloud-subscribing organization, IT selects and manages only 73% of cloud services, making its mission of enablement and integration more critical than ever.

Besides IT, what parts of the organization are buying cloud services directly?

<table>
<thead>
<tr>
<th>Department</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations</td>
<td>33%</td>
</tr>
<tr>
<td>HR</td>
<td>33%</td>
</tr>
<tr>
<td>Finance</td>
<td>29%</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>24%</td>
</tr>
<tr>
<td>Marketing</td>
<td>23%</td>
</tr>
<tr>
<td>Sales</td>
<td>22%</td>
</tr>
<tr>
<td>Corporate</td>
<td>19%</td>
</tr>
<tr>
<td>Legal</td>
<td>14%</td>
</tr>
</tbody>
</table>

Research Topic: How can IT empower its internal customers while fulfilling its services mission effectively?
Same as Ever: IT Must Plan for Service Disruptions

- Reliability is key, but 76% of organizations surveyed say at least one cloud vendor failed to meet their SLA.

Cloud vendor attributes identified as most important to customers:

- **43%** Reliability
- **28%** Cost stability
- **27%** Ability to integrate with existing infrastructure
- **25%** IT support during implementation
- **25%** Lowest total cost

**Research Topic:** How can we architect business continuity, high availability and disaster recovery into our cloud solutions?
Security Risks Remain, But Are Addressable

Only 28% of respondents identified security as the largest source of problems for current cloud services; most users are more concerned with how to derive value from the cloud – securely.

Cloud security isn’t a point solution that you buy and implement. CDW recommends the following risk mitigation practices to help actively address and manage an organization’s security concerns:

- Define security policies for various levels of organizational data
- Apply controls for tracking data
- Manage access and credentials
- Protect remote and mobile endpoints

Measures organizations also consider to secure their data in the cloud*:

1. Encrypt transmitted and sensitive data
2. Manage access, authentication and identity for cloud applications
3. Change password every 90 days
4. Certify security measures taken by cloud vendor
5. Hold annual security training for all employees

*Source: CDW 2011 Cloud Computing Tracking Poll

Research Topic: Has cloud security been an actual problem for many organizations? What specific security issues have they had? And how are they addressing them?
Cloud or Traditional IT, Migration/Integration Is Key

- Beyond security and other concerns (see slide 5), complexity of migration and integration proves to be IT’s top challenge – making IT’s role of enablement even more critical.

... would make more use of cloud, but the complexity of migration and integration is holding them back.

... believe cloud is inexpensive to buy, but expensive and/or difficult to implement and integrate with their other resources.

Cloud implementations have streamlined. On average, respondents reported that their first cloud implementation took 14 weeks, from start to finish. Now, the typical cloud implementation takes only 10 weeks on average, with more than half of organizations saying it takes six weeks or less.
The Benefits Are There, But the Math Is Complicated

- Organizations struggle to make accurate financial forecasts, as **53%** say their models are **off by** more than **10%**

How organizations sourced financial models for cloud adoption:

<table>
<thead>
<tr>
<th>Source</th>
<th>Accuracy</th>
<th>Percentage of Organizations Reporting Each Model Accurate Within 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendor provided</td>
<td>55%</td>
<td>29.9%</td>
</tr>
<tr>
<td>Third-party consultant</td>
<td>40%</td>
<td>25.8%</td>
</tr>
<tr>
<td>Company provided</td>
<td>42%</td>
<td>25.2%</td>
</tr>
<tr>
<td>IT analyst firm</td>
<td>39%</td>
<td>24.2%</td>
</tr>
<tr>
<td>Built our own</td>
<td>56%</td>
<td>23.4%</td>
</tr>
<tr>
<td>Internal finance department</td>
<td>40%</td>
<td>17.5%</td>
</tr>
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</table>

Research Topic: What is difficult about forecasting cloud’s financial impact, and how can we improve? What are the best financial variables to consider?
All Industries Agree – Cloud Works

Organizations with successful cloud migrations offer the following inspiration:

“Although it may seem complex, cloud is by far the way to go as far as infrastructure and storage.” – **CTO, Healthcare Organization**

“It is not as difficult to implement and train staff to use cloud computing as was initially feared. Had we known how easy it was going to be, we would have done it much sooner.” – **IT Supervisor, Small Business**

“Cloud computing has enabled us to invest more money back in the business.” – **CIO, K-12 Public School**

“People are always going to buck change; don't get discouraged, just keep pressing forward” – **IT Supervisor, Large Business**

“Using cloud computing we can optimize the organization and minimize the workload efficiently.” – **CIO, Higher Education**

“It is an expensive investment in the short term, but provides significant long-term cost savings.” – **IT Director, State & Local Government**

“Be very optimistic and open-minded about how it can enhance the efficiency and reliability of an entity's operations.” – **CIO, Federal Government**
Recommendations

- Don’t overlook the importance of planning and preparing for migration and integration
- Organizations need a platform with system diagnostics, along with properties and processes that are made to run seamlessly and without any concerns over privacy and speed of network transfers
- Managed services provide the full benefits of a cloud solution, without the complexity and concern of management:
  - Continuous 24x7 monitoring
  - Management reporting
  - Metered billing
  - Case-based ticketing and escalation
  - Progressively tiered services
  - Application support
Methodology and Demographics

CDW surveyed 1,204 IT professionals in June 2014. The total sample equates to a margin of error of ±2.74% at a 95% confidence level.

100% of respondents’ organizations have implemented cloud computing services as part of their IT strategy.

100% of respondents participate directly in the decision making on their organization’s implementation of cloud computing services.

<table>
<thead>
<tr>
<th>Respondent Position</th>
<th>Industry</th>
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<tbody>
<tr>
<td>Chief or Deputy Chief Information Officer</td>
<td>Small business 12%</td>
</tr>
<tr>
<td>Chief or Deputy Chief Technology Officer</td>
<td>Medium business 13%</td>
</tr>
<tr>
<td>IT Director or Manager</td>
<td>Large business 12%</td>
</tr>
<tr>
<td>IT Supervisor or Specialist</td>
<td>Federal government 13%</td>
</tr>
<tr>
<td>IT Systems Engineer</td>
<td>State or local government 12%</td>
</tr>
<tr>
<td></td>
<td>K-12 public school 13%</td>
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<tr>
<td></td>
<td>Higher education 12%</td>
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<tr>
<td></td>
<td>Healthcare provider 13%</td>
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</tbody>
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