The IT/Storage Landscape: Constable or Pollock?

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San Jose, January 29, 2013
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- IT Professionals
- The Media
- Investment Professionals

ESG is uniquely staffed with successful professionals who possess proven track records and experience.
Some Caveats....

“How do we know it’s not full of consultants?”
This Presentation: Jigsaw Pieces

• Market context
• Plant seeds and pose some questions
• *Whirlwind* review of ESG market research
• Encourage thought
• Agenda
  • Overall IT >> Cloud >> Storage...
Pieces Make a Big Picture....?
What Is The Storage Landscape? Constable?
What is the Storage Landscape? Pollock?
GROWTH!!

Solid-state: expansion and integration
- A little everywhere; ‘flash and stash’ inevitable

Unified movement: gradual but inevitable
- Often includes commodity / open source based options

Virtualization...and simplification
- VMware = ‘BFF’ or sociopath?

Networking is a key enabler (and driver...)
- Both of hierarchies and via mobility demands

Broad(ening) workload mix for many users
Applications Responsible for Storage Growth

Which of the following applications do you believe will be responsible for your organization’s storage growth over the next 24 months? Which application will be most responsible for storage growth? (Percent of respondents, N=418)

- E-mail: 9% (most responsible for storage capacity growth)
- ERP: 11% (most responsible for storage capacity growth)
- Business intelligence / data analytics: 12%
- Office productivity applications: 6%
- Digital images: 10%
- Collaboration: 6%
- Web serving / e-commerce: 7%
- Customer relationship management / sales force automation: 6%
- Industry-specific applications: 11%
- Engineering / computer-aided design and/or manufacturing: 6%
- Digital video: 9%
- Video surveillance: 3%
- Social networking data: 2%
- Remote sensor data: 2%
- Other: 1%

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Situation Analysis – Storage Trends (2 of 2)

- Dynamic hierarchy / Software definition
  - Automated tiering, migration, management; to optimize economics and utilization

- Overall market dynamics and technologies
  - Cloud, consolidation, de-dupe, minimizing risk

- Efficiency
  - ‘Green’ IT’, plus cost savings and bang-for-buck in general
  - Scale-out in block as well as file

- Block is still the ‘tier 1’, ‘big-iron’ space...but the ‘mystique’ fading??

- Market still dominated by a handful of entrenched vendors....
‘Clouds’ and ‘Content’ Views....
Long-term View of Data Storage Technology

Which of the following statements best describes your organization’s long-term view of data storage technology? (Percent of respondents, N=418)

- Data storage will remain a distinct technology discipline with specialized hardware, software, and staff, 58%
- Data storage will become a less specialized technology discipline built upon cheap hardware with software features/functionality operating at the virtualization/data center operating system level, 32%
- Data storage will become a less important discipline for our IT organization as it is off-loaded to cloud service providers, 6%
- Don’t know / no opinion, 4%

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Outlook for the 2013 IT Landscape
The Facts: Spending

42% of organizations planning to increase spending; 50% flat Y/Y

Only 8% of organizations say IT spending will decrease to some extent

+1.99% mean Y/Y budget change across all organizations surveyed
Most Positive Spending Outlook Areas for 2013

To the best of your knowledge, to what extent will your organization’s 2013 IT spending for each technology listed below change relative to 2012? (Percent of respondents)

- 2013 spending will increase
- 2013 spending will stay flat
- 2013 spending will decrease

<table>
<thead>
<tr>
<th>Technology</th>
<th>2013 spending will increase</th>
<th>2013 spending will stay flat</th>
<th>2013 spending will decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cloud computing services (N=242)</td>
<td>60%</td>
<td>31%</td>
<td>9%</td>
</tr>
<tr>
<td>Storage infrastructure (N=352)</td>
<td>59%</td>
<td>33%</td>
<td>8%</td>
</tr>
<tr>
<td>Virtualization/ private cloud infrastructure software (N=179)</td>
<td>49%</td>
<td>41%</td>
<td>9%</td>
</tr>
<tr>
<td>Security (N=219)</td>
<td>49%</td>
<td>44%</td>
<td>7%</td>
</tr>
<tr>
<td>Network infrastructure (N=271)</td>
<td>45%</td>
<td>42%</td>
<td>13%</td>
</tr>
<tr>
<td>Business intelligence/data analytics (N=141)</td>
<td>43%</td>
<td>47%</td>
<td>11%</td>
</tr>
<tr>
<td>Business applications (N=233)</td>
<td>43%</td>
<td>43%</td>
<td>14%</td>
</tr>
<tr>
<td>Server infrastructure (N=300)</td>
<td>38%</td>
<td>47%</td>
<td>15%</td>
</tr>
<tr>
<td>Databases (N=246)</td>
<td>37%</td>
<td>49%</td>
<td>14%</td>
</tr>
<tr>
<td>Information management software</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(includes content management, archive, search, etc.) (N=148)</td>
<td>35%</td>
<td>56%</td>
<td>9%</td>
</tr>
<tr>
<td>IT professional services/ outsourcing (N=186)</td>
<td>32%</td>
<td>47%</td>
<td>22%</td>
</tr>
<tr>
<td>Infrastructure management software (N=126)</td>
<td>25%</td>
<td>62%</td>
<td>13%</td>
</tr>
</tbody>
</table>
Top IT Priorities for 2013

Which of the following would you consider to be your organization's most important IT priorities over the next 12 months? (Percent of respondents, N=540, ten responses accepted)

- Information security initiatives: 29%
- Improve data backup and recovery: 27%
- Increased use of server virtualization: 26%
- Manage data growth: 25%
- Data center consolidation: 24%
- Major application deployments or upgrades: 22%
- Desktop virtualization: 22%
- Use cloud infrastructure services: 22%
- Business continuity/disaster recovery programs: 20%
- Regulatory compliance initiatives: 20%
- Business intelligence/data analytics initiatives: 20%
- Deploying applications on or for new mobile devices: 20%
- Improve collaboration capabilities: 20%
62% of marketing executives are now involved in technology evaluation and purchase processes.

58% of IT professionals confirm that non-IT individuals have become more involved in IT evaluation and purchase processes in the last 2 years.
Non-IT Buyers Making *Cloud* Storage Decisions

Which of these technology evaluation and purchase decisions were made outside the purview of and/or without approval from your IT organization? (Percent of respondents, N=46, multiple responses accepted)

- Website development: 46%
- Cloud computing, storage, and/or backup services: 26%
- Business software (i.e., applications delivered as a cloud computing service and/or mobile application): 26%
- Business software (i.e., traditional software that runs on in-house IT hardware): 22%
- Hosting and/or collocation services: 15%
- Endpoint computing devices (e.g., smartphones, tablets, desktops/laptops, etc.): 13%
- Telecom/network services: 13%
- IT infrastructure (e.g., servers, data storage systems, network equipment, etc.): 13%

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Of all the potential x86 servers in your organization that can be virtualized, approximately what percentage of these systems has actually been virtualized to date? (Percent of respondents, N=311)
Which of the following best describes your organization’s **current** infrastructure for its virtualization/private cloud environment? Which do you believe would be your organization’s **preferred** infrastructure?

- **Current virtualization infrastructure model**
- **Preferred virtualization infrastructure model**

A bar graph is shown comparing the current and preferred infrastructure models.

- **“Do-it-yourself” solution**
  - Current: 46%
  - Preferred: 28%

- **Reference architecture**
  - Current: 26%
  - Preferred: 28%

- **Fully-integrated solution**
  - Current: 24%
  - Preferred: 36%

- **Don’t know**
  - Current: 9%
  - Preferred: 3%
What Is The Storage Landscape?
Impact of Cloud Computing
Which of the following IT initiatives do you believe will significantly impact your organization’s storage spending over the next 12-18 months? (Percent of respondents, N=418, multiple responses accepted)

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use “cloud storage” service to source storage capacity without buying new infrastructure</td>
<td>37%</td>
</tr>
<tr>
<td>Technology refresh initiative</td>
<td>35%</td>
</tr>
<tr>
<td>Supporting server virtualization implementation(s)</td>
<td>35%</td>
</tr>
<tr>
<td>Database implementation/upgrade/migration</td>
<td>30%</td>
</tr>
<tr>
<td>Major application deployments or upgrades</td>
<td>30%</td>
</tr>
<tr>
<td>Data center consolidation</td>
<td>30%</td>
</tr>
<tr>
<td>Business continuity/disaster recovery programs</td>
<td>28%</td>
</tr>
<tr>
<td>Desktop virtualization/thin client initiative</td>
<td>26%</td>
</tr>
<tr>
<td>Business intelligence / data analytics</td>
<td>24%</td>
</tr>
<tr>
<td>File sharing/transfer with remote offices</td>
<td>21%</td>
</tr>
<tr>
<td>Regulatory compliance initiatives</td>
<td>21%</td>
</tr>
<tr>
<td>Collaboration tools and initiatives</td>
<td>19%</td>
</tr>
<tr>
<td>“Green” initiatives to reduce data center power and cooling requirements</td>
<td>18%</td>
</tr>
<tr>
<td>Deploy application- or workload-specific systems/appliances</td>
<td>15%</td>
</tr>
<tr>
<td>Deploy unified computing solution</td>
<td>15%</td>
</tr>
</tbody>
</table>
The Facts: IaaS and the Cloud

60% of IaaS users leverage cloud storage services
Cloud Is Gaining Traction as a Backup Option

If provided the opportunity to completely re-architect its backup process(es) from scratch, do you believe your organization would: (Percent of respondents)

- Use the same backup solution/vendor: 42% (2010), 32% (2012)
- Use a new backup solution/vendor: 37% (2010), 44% (2012)
- Use a third-party online backup service instead of an in-house solution: 6% (2010), 16% (2012)
- Don’t know: 15% (2010), 8% (2012)
Based on the previous definition, has your company deployed or is it evaluating corporate accounts for online file sharing and collaboration (OFS) solutions? (Percent of respondents, N=499)

- Yes, we have a corporate account for an OFS service, 28%
- We do not have a corporate account yet but we plan to do so within the next 12 months, 22%
- We do not have a corporate account yet but we plan to do so within the next 24 months, 11%
- We do not have a corporate account but we are interested, 21%
- We do not have a corporate account and have no interest in/plans for doing so, 17%
- We do not have a corporate account and have no interest in/plans for doing so, 17%
Factors preventing more pervasive usage (current users) or initial adoption (non-users) of cloud computing services. (Percent of respondents)

- Security concerns: 48% (current users) vs. 47% (non-users)
- Data protection concerns/challenges: 33% vs. 38%
- Performance concerns: 29% vs. 15%
- Budget constraints: 27% vs. 28%
- Lack of cloud skills/expertise/training across IT: 24% vs. 23%
- Too much invested in current IT infrastructure and staff: 23% vs. 25%
- Organizational complexity: 9% vs. 23%
- Lack of appropriate security tools: 6% vs. 19%
- Feel like IT staff would be giving up too much control to business units/users: 17% vs. 19%
- Lack of executive sponsorship: 16% vs. 13%
- Nothing is preventing us from further usage/ adoption of cloud services: 4% vs. 8%

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What Is The Storage Landscape?
Currently, at what point would you say your organization is on its transition to private cloud computing? (Percent of respondents, N=178)

- **Considering moving to cloud** – i.e., limited use of virtualization technology, 10%
- **Basic internal cloud** – i.e., virtualization of development, test and IT-owned applications, low-to-medium percent of servers virtualized, 47%
- **Advanced internal cloud** – i.e., virtualization of mission-critical applications, high percent of servers virtualized, 38%
- **Complete IT-as-a-service operating model** – i.e., highly-to-fully virtualized, highly-automated, self-service provisioning, user chargeback, etc., 4%
Storage Market Trends
In general, what would you say are your organization’s biggest challenges in terms of its storage environment? (Percent of respondents, N=418)

- Rapid growth and management of unstructured data: 40%
- Hardware costs: 39%
- Data protection: 39%
- Running out of physical space: 25%
- Need to support growing virtual server environments: 25%
- Data migration: 25%
- Staff costs: 20%
- Management, optimization and automation of data placement: 19%
- Lack of skilled staff resources: 19%
- Discovery, analysis and reporting of storage usage: 17%
- Device management: 17%
- File system expansion: 17%
- Poor performance (throughput): 15%
- Poor performance (I/Os): 15%
- Power and cooling costs: 14%
- Lengthy implementation time: 12%
- Poor storage hardware utilization: 11%
- Difficulty supporting desktop virtualization environment: 9%
- Lengthy storage provisioning time: 9%
Business intelligence/data analytics most commonly cited as application/workload *most* responsible for storage capacity growth.
“Must Have” Features When Buying Storage

Which of the following features would you consider to be “must have” when it comes to purchasing storage systems? (Percent of respondents, N=418, five responses accepted)

- High availability: 59%
- 10 Gigabit Ethernet support: 41%
- Data reduction technologies: 37%
- Storage tiering: 33%
- Unified storage: 23%
- Fibre Channel over Ethernet (FcoE) support: 22%
- Flash-based solid-state drives (SSDs): 22%
- Read-write snapshot: 21%
- Synchronous replication: 19%
- Remote monitoring/management capabilities via tablet: 18%
- Thin provisioning: 16%
- Asynchronous replication: 16%
- Read-only snapshot: 15%
Are you a good kisser?
Solid-state Storage – Research Conclusions

- Growing adoption
  - SSD form factor still prominent
  - Users want share-able solid state
- More ‘selling’ drives more sales!
  - Brand matters
- Multiple, expanding implementation types
  - Big emphasis on various implementations of caching
- Bought to address particular application challenges
  - But moving from vertical to horizontal over time
- Performance is still # 1 adoption driver
  - But it isn’t everything (reliability, power etc matter)
- Definite links to tiering and virtualization
Why Organizations Deployed SSS

To the best of your knowledge, which of the following considerations were responsible for your organization’s initial deployment of solid-state storage? (Percent of respondents, N=91)

- Improved performance: 36% (Most important consideration driving initial deployment of solid-state storage)
- Improved reliability / mean time between failures (MTBF): 18%
- Improved power and cooling efficiency: 15%
- Ability to consolidate disk drives: 13%
- Longevity (i.e., read/write media life): 12%
- Increased environmental tolerances (i.e., heat, vibration, etc.): 5%
- Other: 1%

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### Specific Applications Driving SSS Deployments

What business application(s) drove - or is driving - your organization to deploy solid-state storage? (Percent of respondents, multiple responses accepted)

<table>
<thead>
<tr>
<th>Application</th>
<th>Current Solid-State Storage Users (N=56)</th>
<th>Potential Solid-State Storage Adopters (N=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database / OLTP</td>
<td>39%</td>
<td>52%</td>
</tr>
<tr>
<td>Financials / ERP</td>
<td>36%</td>
<td>33%</td>
</tr>
<tr>
<td>Business intelligence / data warehouse / OLAP</td>
<td>27%</td>
<td>30%</td>
</tr>
<tr>
<td>High-performance computing (HPC)</td>
<td>20%</td>
<td>27%</td>
</tr>
<tr>
<td>Supply chain management (SCM)</td>
<td>13%</td>
<td>20%</td>
</tr>
<tr>
<td>CRM / sales force automation</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>Web serving / e-commerce</td>
<td>16%</td>
<td>30%</td>
</tr>
<tr>
<td>E-mail</td>
<td>16%</td>
<td>27%</td>
</tr>
<tr>
<td>Industry-specific applications</td>
<td>16%</td>
<td>23%</td>
</tr>
<tr>
<td>Video / audio / image</td>
<td>9%</td>
<td>17%</td>
</tr>
<tr>
<td>Streaming media</td>
<td>7%</td>
<td>10%</td>
</tr>
</tbody>
</table>

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‘End to End’ Solid-state Storage

- SSS in servers and storage (and even network)
- End-to-end cache/tier with hottest data in the server
- Promising, but complex management needed
- Advertised/discussed, but not truly available yet
Planned Solid-state Deployments in 2013

Which of the following implementations of solid-state storage technology does your organization plan to utilize over the next 12-18 months? (Percent of respondents, N=222, multiple responses accepted)

- As solid-state drives in an external disk storage subsystem: 29%
- Within a standalone solid-state storage appliance used as primary storage: 25%
- As extended cache/memory/primary storage within a server: 23%
- As an extended cache/memory within a storage controller: 22%
- Within a standalone solid-state storage appliance used as a cache: 22%
And...

SOME OTHER ELEMENTS IN THE BIGGER PICTURE
88% of organizations say they collect *more* security analytics data now than two years ago.
To the best of your knowledge, approximately how much data does your organization collect to support its information security analytics activities on a monthly basis? (Percent of respondents, N=257)
‘Have You Forgotten How Good They Taste?’
Data storage will remain a distinct technology discipline with specialized hardware, software, and staff, 58%

Data storage will become a less specialized technology discipline built upon cheap hardware with software features/functionality operating at the virtualization/data center operating system level, 32%

Data storage will become a less important discipline for our IT organization as it is off-loaded to cloud service providers, 6%

Don’t know / no opinion, 4%
Long-term View of Data Storage Technology, by Role of Data Storage Technology in IT and Business Operations

Organization’s long-term view of data storage technology, by role of data storage technology in IT and business operations. (Percent of respondents)

Data storage will remain a distinct technology discipline with specialized hardware, software, and staff

Data storage will become a less specialized technology discipline built upon cheap hardware with software features/functionality operating at the virtualization/data center operating system level

Data storage will become a less important discipline for our IT organization as it is off-loaded to cloud service providers

- **Strategic** – effective storage strategies are critical to core applications/business processes and can lead to competitive advantage for our organization (N=208)

- **Tactical** – storage is an important part of our IT operations but it is not viewed as a strategic tool or asset (N=168)

- **Afterthought** – storage is necessary but we don't think about it much unless we need to add new capacity (N=23)

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Key Criteria in Selecting Storage Vendor/Solution

In general, what would you consider to be the most important criteria to your organization when it comes to selecting a storage vendor/solution? (Percent of respondents, N=418, five responses accepted)

- Total cost of ownership (TCO) - 65%
- Service and support - 53%
- Ease of management - 47%
- Ease of implementation - 41%
- Product features/functionality - 30%
- Ability to leverage existing staff skills - 30%
- Existing relationship with vendor - 22%
- Certified support for a specific application - 16%
- Industry-specific expertise - 15%
- Size/financial stability of vendor - 15%
- Pre-qualified solutions / reference architectures - 10%
Some Key Take-away & Discussion Points

• Good news: Storage $$ increasing
  ▪ Plenty of SMB opportunity too

• Good news: Big Data & analytics are seen as vital
• Bad news: IT transformation is not as rapid as hoped
• Bad news: “It’s just storage” (as ‘convergence’ grows)
• Good news: “It’s storage” (prime area for focus)
  ▪ And brand is key in most market segments

• Security is a key driver for the use of and creating Big Data
• Solid-state is becoming about more than performance
  ▪ Business decisions for big vendors as much as technology
• Focus on service providers and the channel is key
• Future overall market direction is a bifurcation of control vs. ease
  ▪ ‘Giant Laptop’ versus ‘White Coat’ models

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“Faced with the choice of changing one’s mind and proving that there is no need to do so, almost everybody gets busy on the proof”

J K Galbraith
What Do You Want To Be Known For?
Thank You

Mark Peters, Senior Analyst
508.381.5176  | mark.peters@esg-global.com