



# Cloud Security Alliance, Seattle Chapter Survey on Cloud Security

September, 2013

- Objectives
- Research Methodology
- Executive summary
- Responses
- Appendix

# Objectives

- Identify Obstacles to moving to the Cloud
- Measure Adoption of
  - Cloud Solutions
  - Virtualization
  - SaaS, PaaS, IaaS, etc.
- Provide insight on what customers want in order to move to the cloud faster

# Research Methodology

- Anonymous, on-line Survey sent to:
  - Cloud Security Alliance Chapter members worldwide
  - ISSA Chapter members in Seattle Area
- Responses received from Nov 2012 to Jan 2013
- 107 responses in total (N=107)

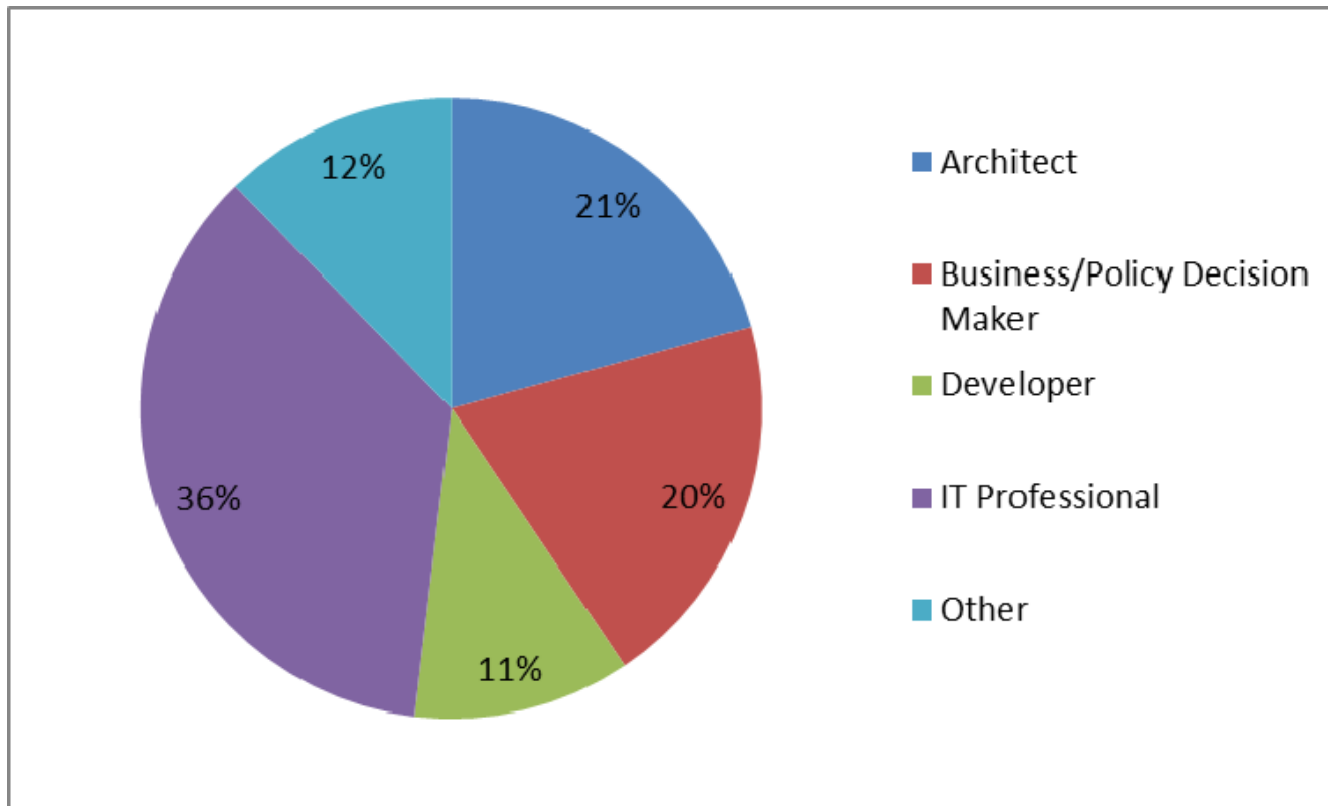
# Executive Summary

- Use this survey to establish a baseline for future surveys
- Key Findings:
  - Reputation and Brand is the #1 criteria for customers evaluating CSPs
  - Customers want more Transparency from CSPs to increase confidence in Cloud computing
    - Attestations, such as CSA STAR, are also seen as valuable by CSP Customers, along with Audits
    - Certifications ranked third
  - Top Customer concerns about moving to the Cloud:
    - Security and Privacy were cited as the clear #1
    - Compliance with Regulatory Standards (certification and attestation)
      - 80% of customers say External Certification is important
      - Concerns over Data Ownership may represent opportunity for Encryption solutions
  - Primary Asks from Customers of CSPs:
    - Encryption
    - Stronger Identity and Access Management Controls
    - Security Controls
  - Multi-tenancy is seen as a major risk in moving to the cloud



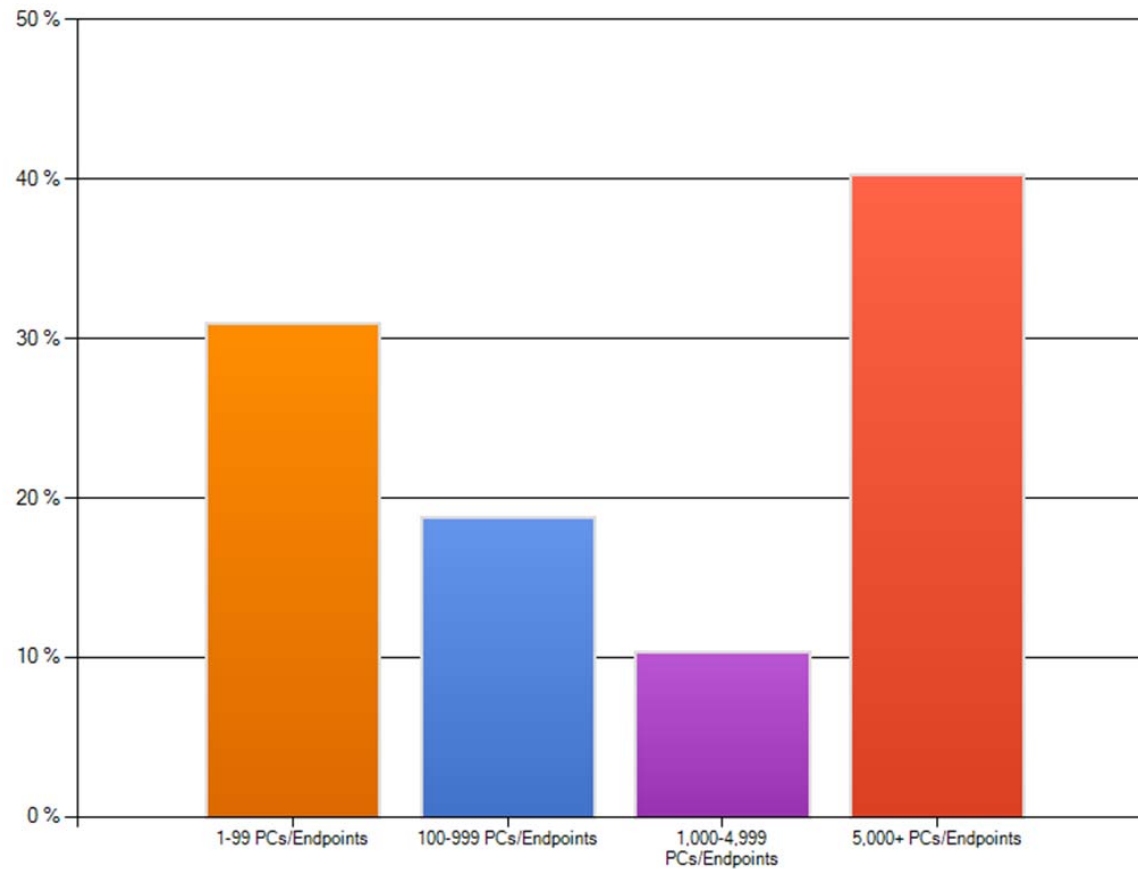
# Responses

# Respondents Roles



- Majority of responses from Technical Roles

# Company Size: # of Endpoints

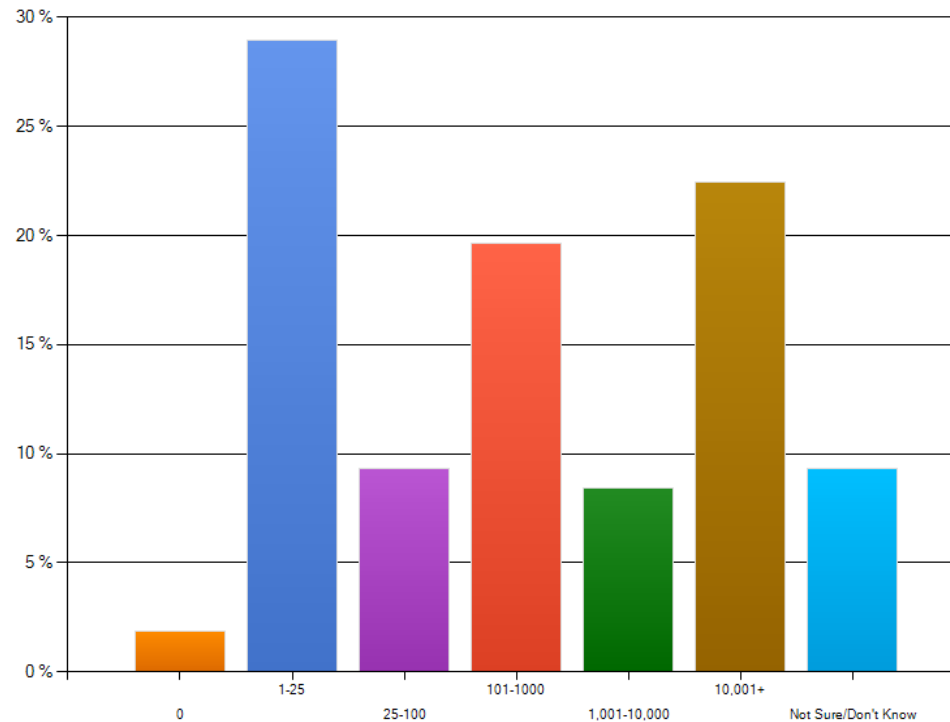


- Endpoints:
  - Bimodal distribution, with 40% of large companies >5,000 Endpoints, and 31% of the smallest, under 100 Endpoints

Q2: Size of your company or organization: # of PCs/Endpoints (N = 106)



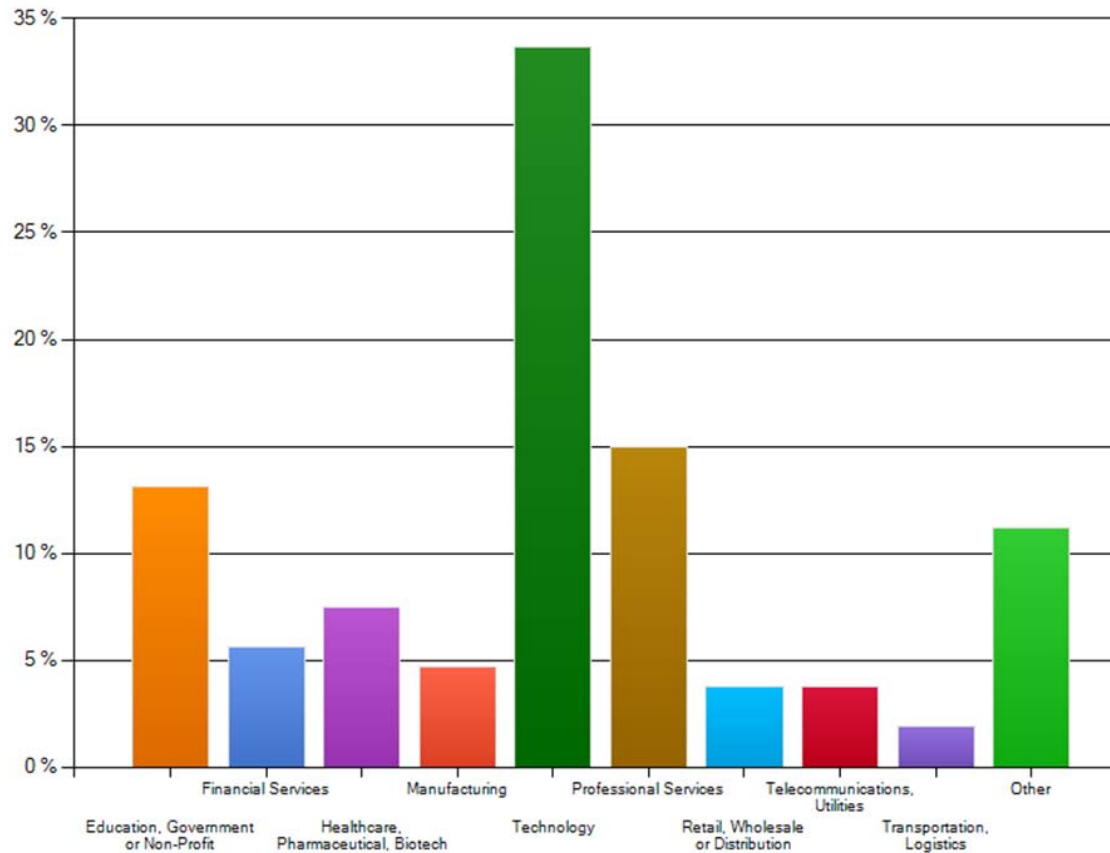
# Company Size: Servers



- Servers:
  - Can combine responses into three segments of approximately equivalent size (~30%) each:
    - 0-25
    - 25-1,000
    - 1,001+

Q3: Size of company or organization: How many total servers does your organization operate? (include Virtual and Physical Servers) (N=106)

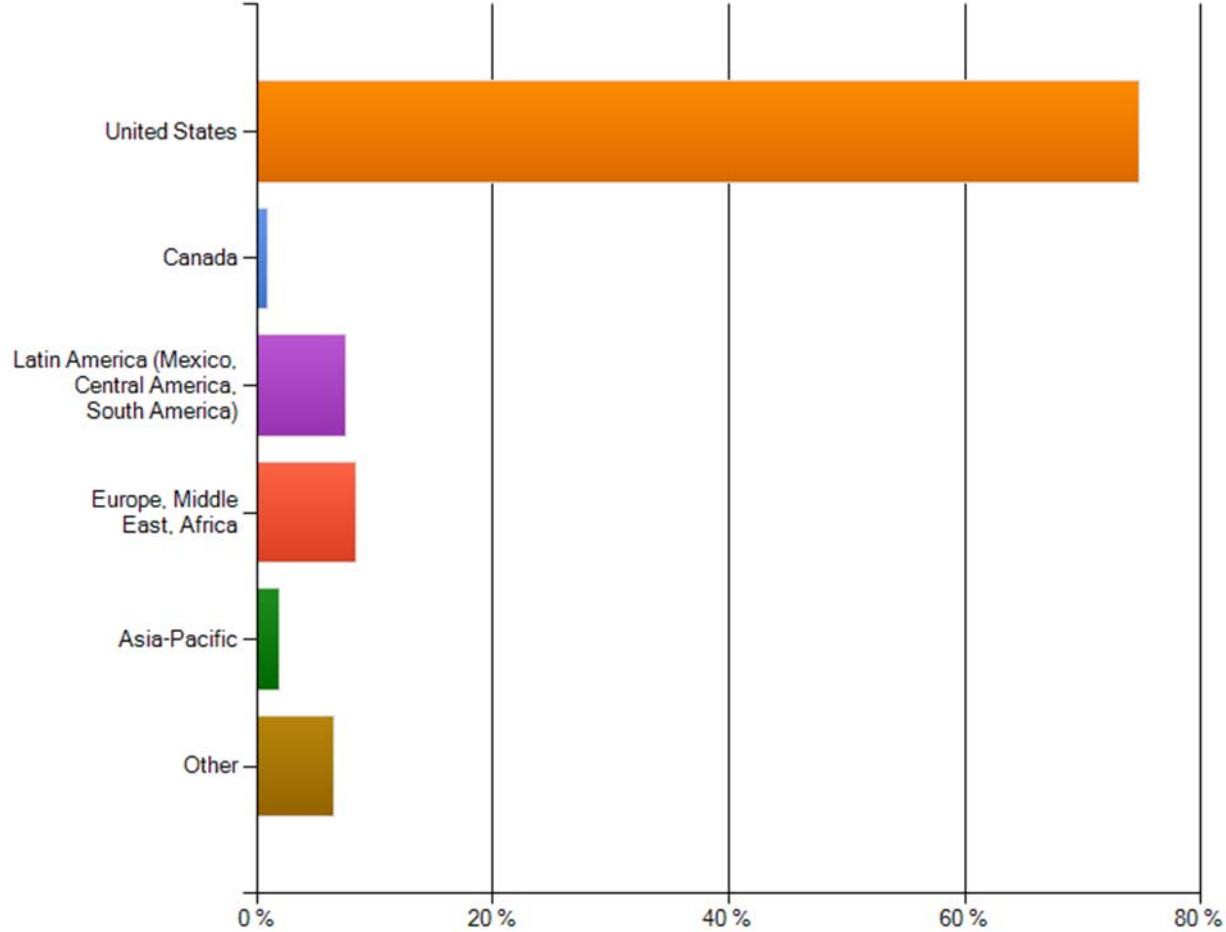
# Vertical / Industry



- Top # of responses were from:
  - Technology, by far the leading vertical
  - Followed by:
    - Professional Services Organizations
    - Education, Government & Non-profits

Q4: Which Industry / Vertical best describes your organization? (N = 106)

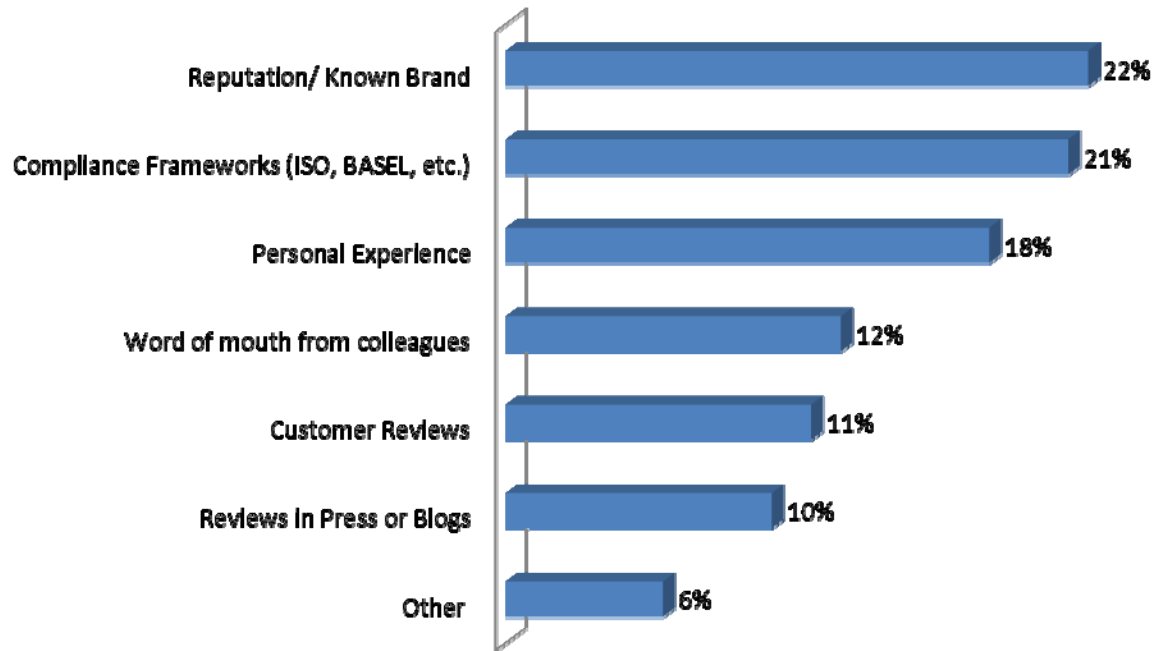
# Geography



- Responses received:
  - 75% from US
  - 25% from ROW
    - 10% from EMEA
    - 10% from LATAM

Q5: What Country/Region do you do the majority of your business in? (N = 106)

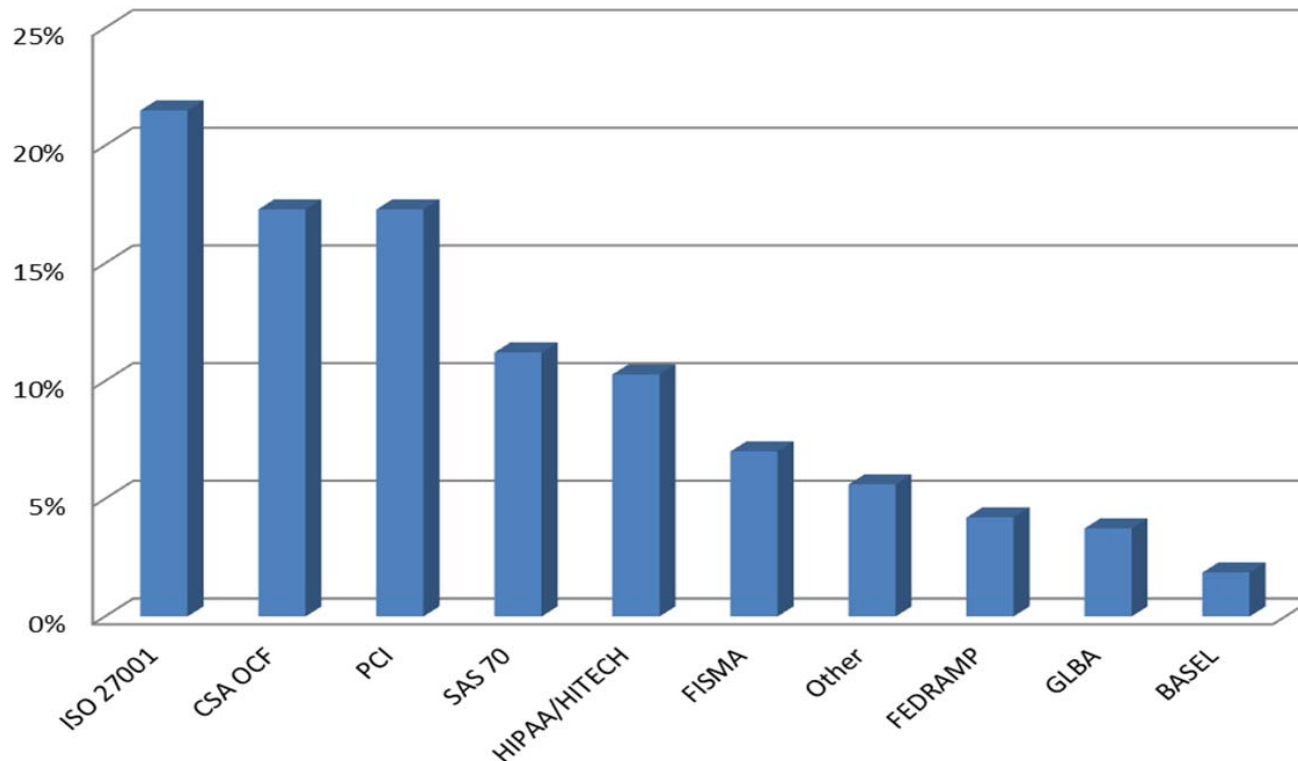
# How do you Evaluate the Security of CSPs



- Top Criteria:
  - Reputation and Brand is the #1 criteria for evaluation.
  - Followed closely (within ~1%) by Compliance Frameworks
- Comparison of CSPs by customers is difficult because of technical complexity and also the difficulty of getting verifiable independent data for comparison

# Compliance Frameworks

**Which Compliance Frameworks do you use to evaluate Cloud Services?**

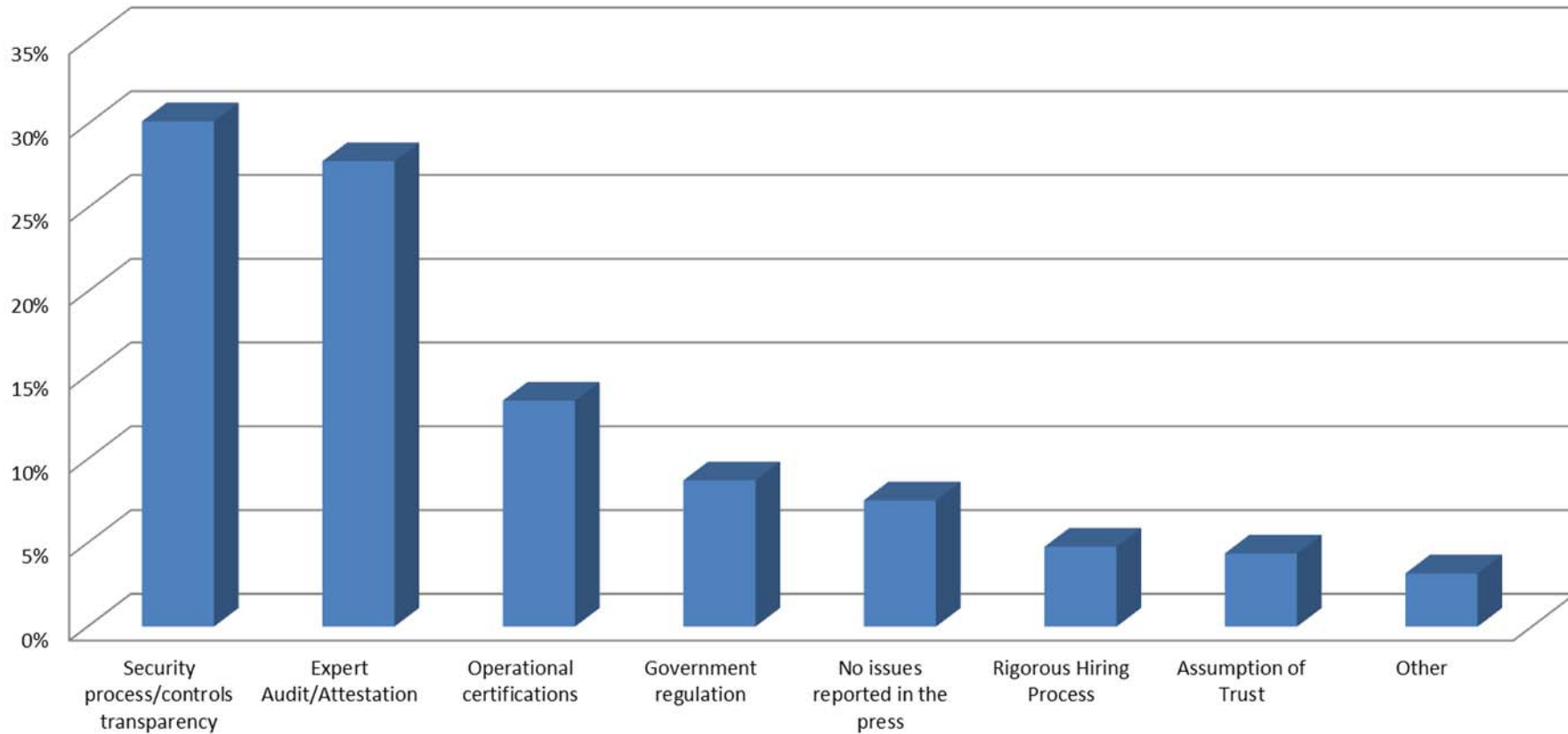


- ISO 27001 was cited as the most frequently used
- CSA's OCF was tied for second with PCI.
  - Open Certification Framework is an industry initiative to allow global, accredited, trusted certification of Cloud providers.
- Note: Cross tab analysis of this question with Industry/Vertical (Q4) in Appendix for reference

Q7: 7. Which Compliance Frameworks do you use to evaluate Cloud Services?

Note: Multiple responses allowed (N = 94)

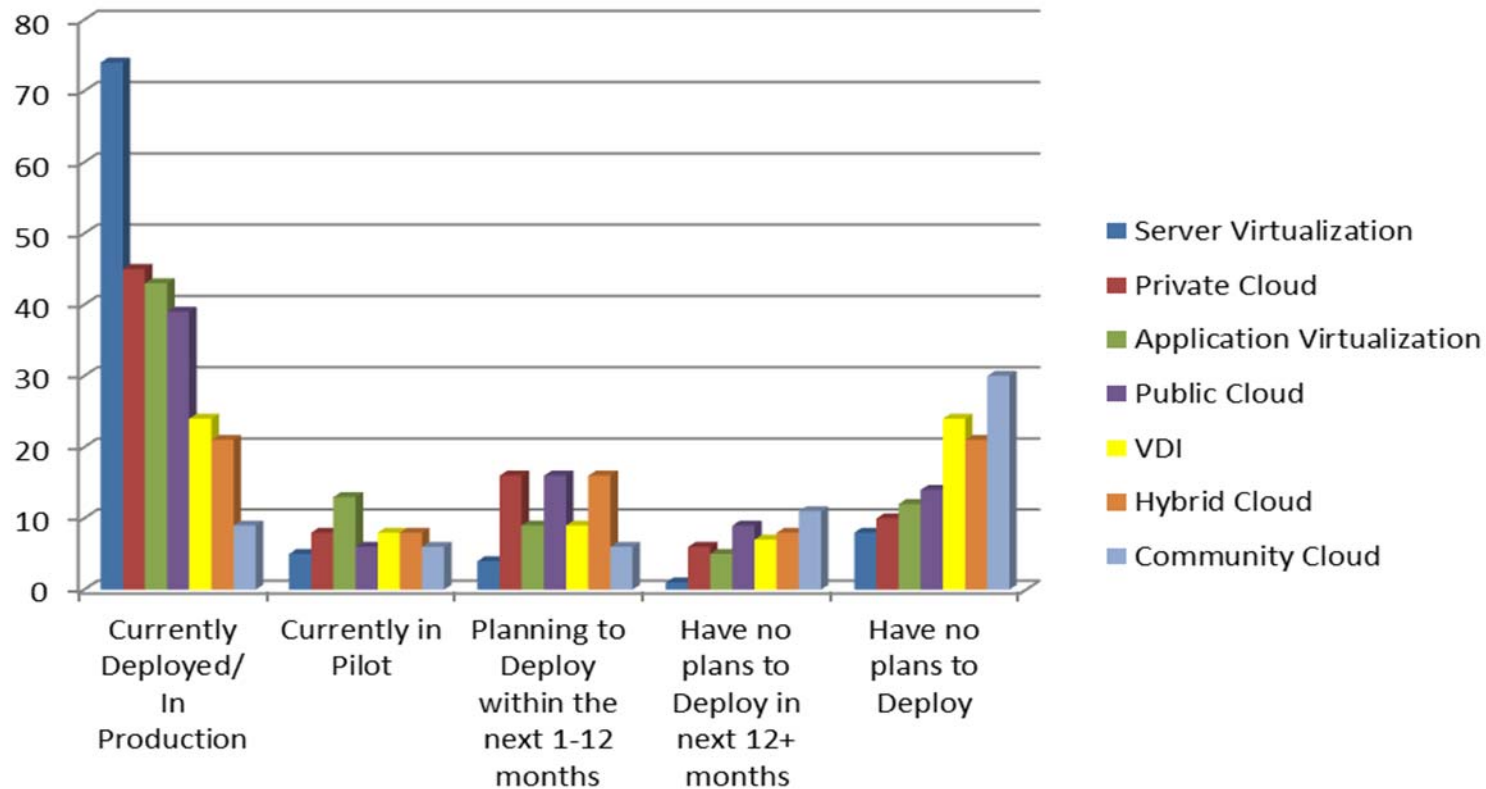
# Increase Confidence in Security of CSPs?



- Customers want more Transparency from CSPs to increase confidence. CSPs may believe that sharing too much information would increase security risks.
- Audits and Attestations, such as CSA STAR, are also seen as valuable by customers
- Operational Certifications ranked third

Q8: What would help you feel more confident in the security of current or potential cloud infrastructure service providers used by your organization? (Multiple responses allowed) (N = 98)

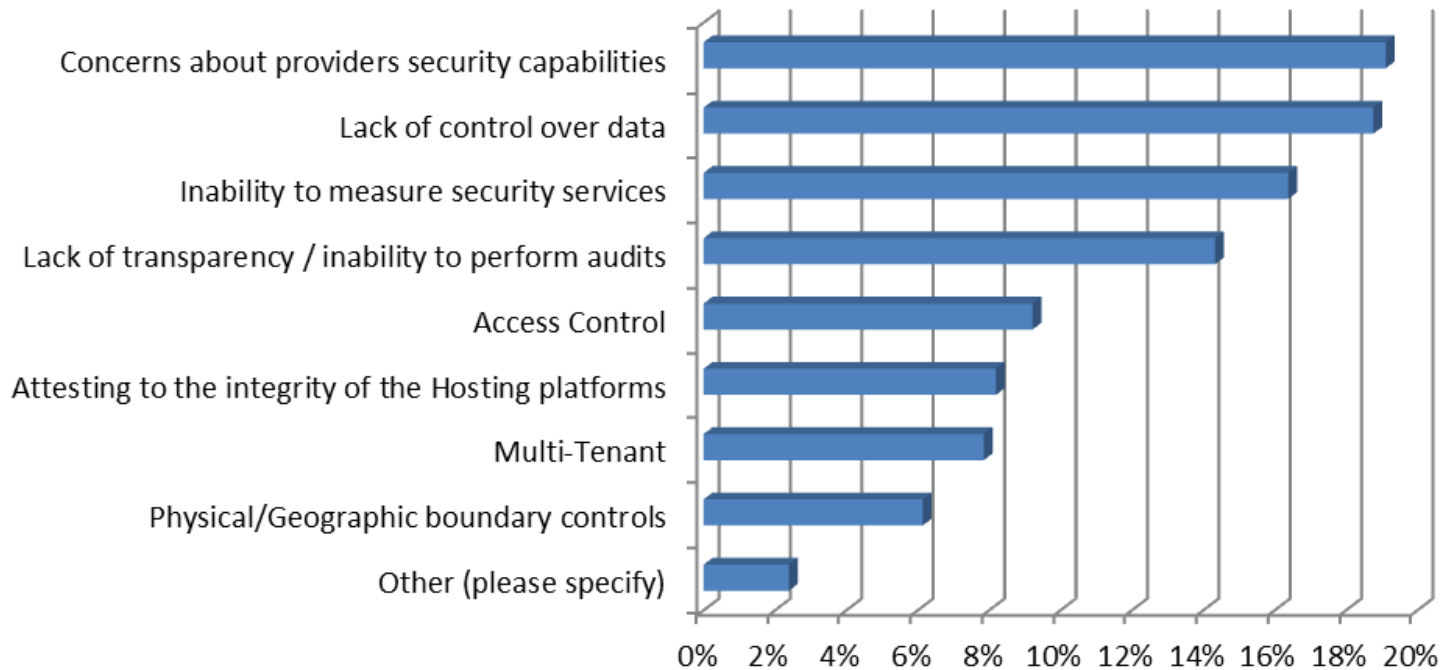
# Virtualization and Cloud Technology Adoption



- Server Virtualization is the most deployed technology, exceeding 70% deployment
- Followed by:
  - Private Cloud, Application Virtualization and Public Cloud
- Technologies reported most frequently with 'no plans to deploy' included:
  - Virtual Desktop Infrastructure
  - Hybrid Cloud
  - Community Cloud

Q9: Which of the following best describes your organization's use of the following technologies? (N = 105)

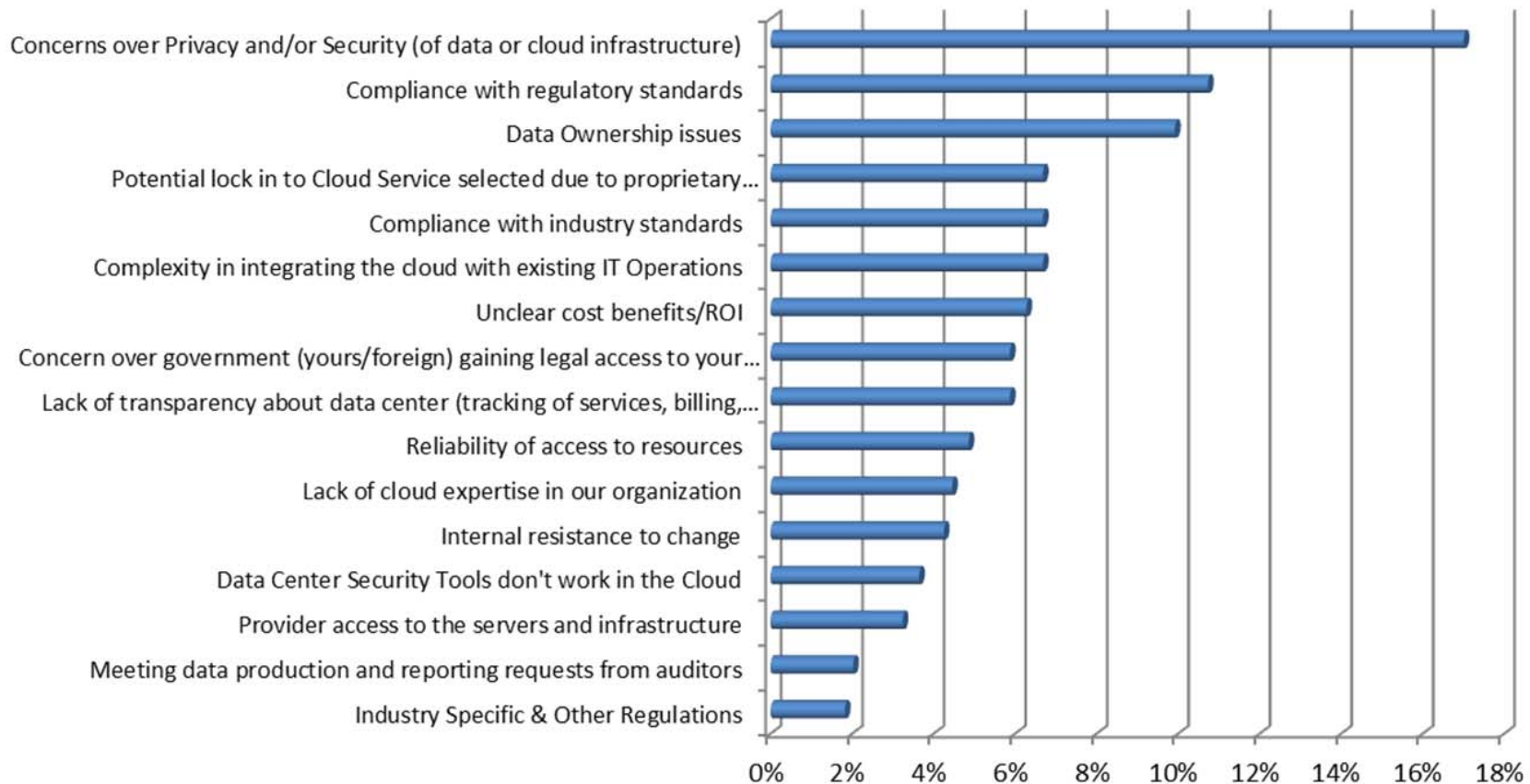
# Top 3 Cloud Computing Security Concerns



- Reasons why customers are not moving to the cloud
  - Top concerns related to Cloud Service Provider Transparency:
    - Top Concern was Cloud Security Providers Security Capabilities, which ties back to the importance of CSP Transparency for customers
    - Lack of control over data was also ranked as top 2 concern. For customers, CSPs may be able to offer encryption to address
    - Inability to measure Security Services ties back to Transparency
    - Lack of transparency and inability to perform audits
- Multi-Tenancy ranked low, indicating that customers don't see this as a "blocker" in terms of moving to the Cloud



# Concerns adopting Public Cloud computing services in your organization?



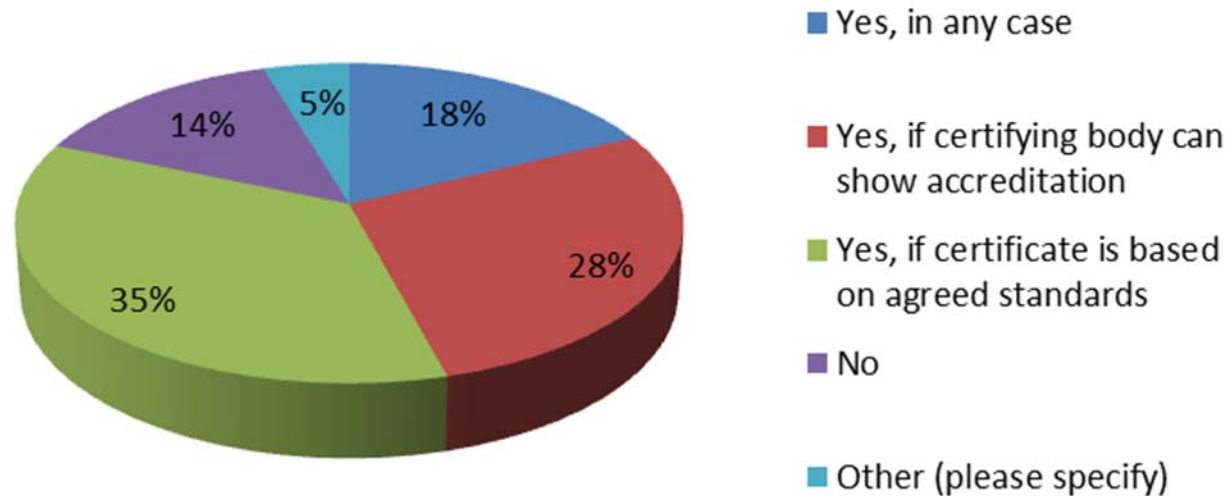
- **Concerns around moving to Public Cloud:**

- Security and Privacy were cited as the clear #1
- Customers want CSPs to provide certification and attestation, based on #2 concern: Compliance with Regulatory Standards
- Data Ownership completes the top 3, could perhaps be addressed by Encryption solutions
- Internal resistance to change was reported as a relatively low concern. Indicates that if can better address Security/Privacy (and Transparency), more organizations are willing to move to Cloud

Q10: What concerns do you have in adopting Public Cloud computing services in your organization?

Note: Multiple responses allowed (N = 99)

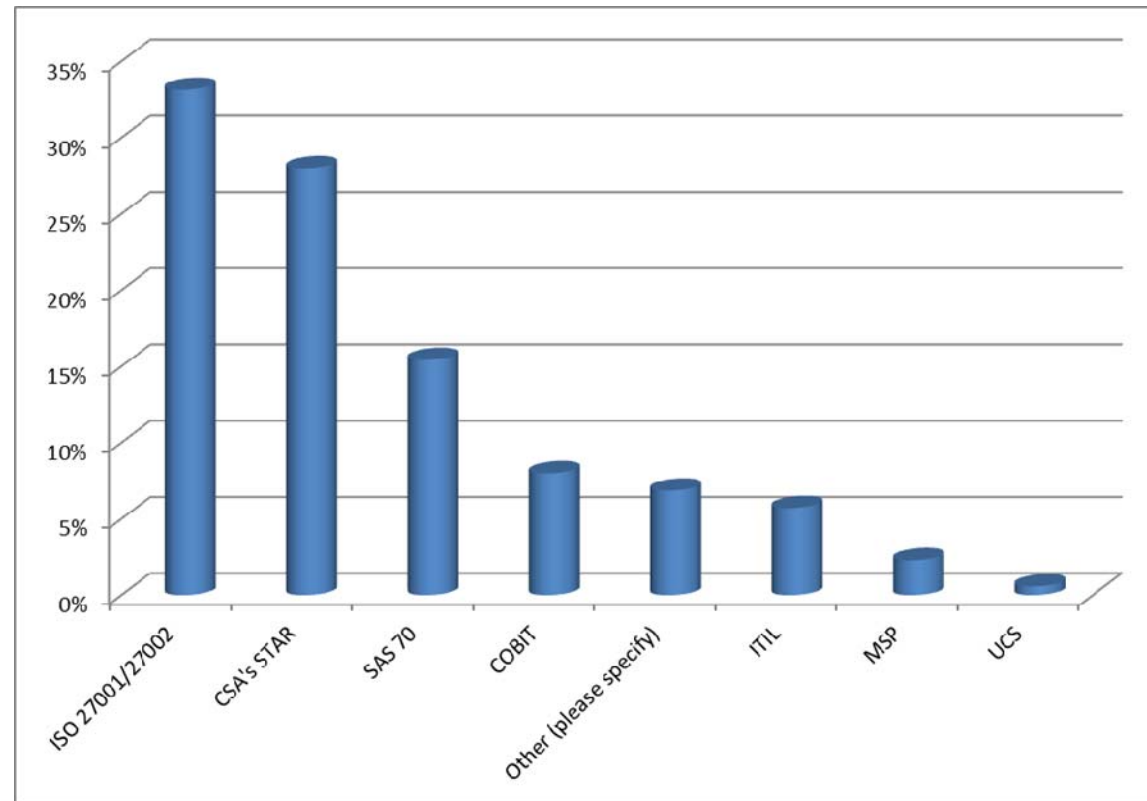
# Importance of External Certification



- 80% of customers say External Certification is important, with only 14% saying it has no impact

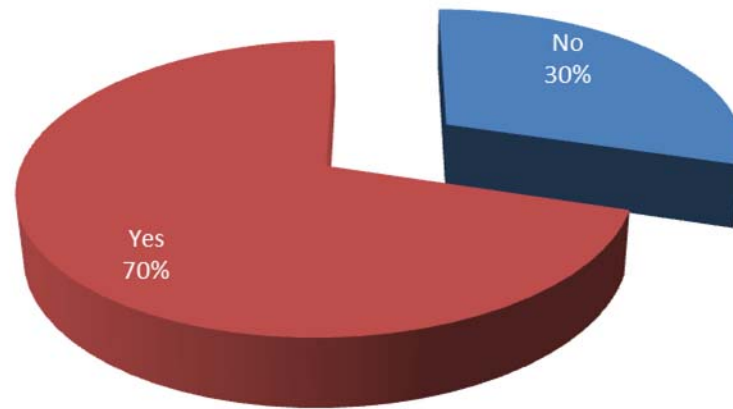
Q12: Would External Certification of Cloud Service Providers increase your adoption of cloud computing? (N = 102)

# External Certifications Preferred



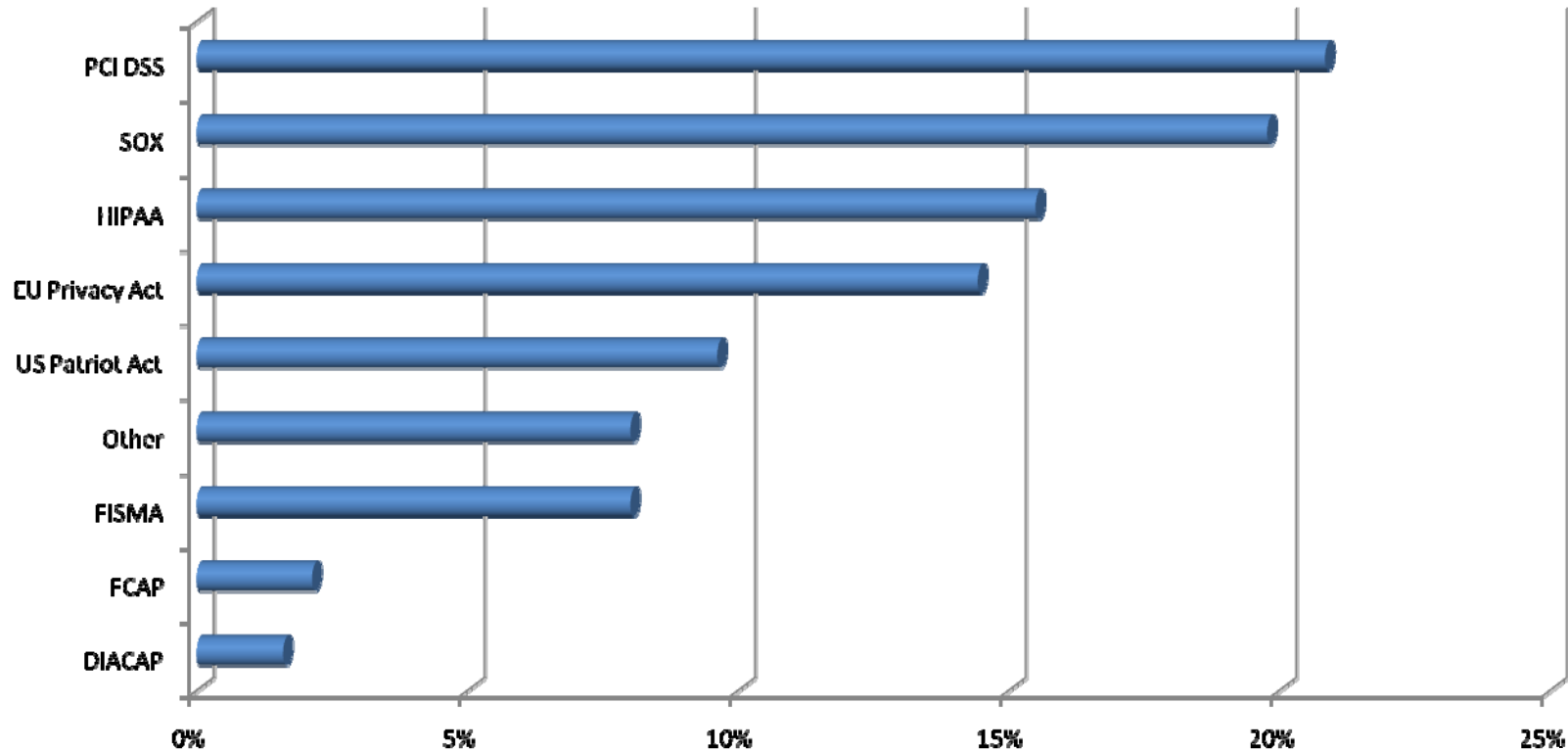
- Top two preferred Certifications are ISA and CSA's STAR
  - ISO is the preferred External Certification
  - CSA's STAR is ranked second, with a significant lead over other Certifications
    - Note that CSA'S STAR is self-attestation.
    - Perhaps STAR Certification could be further strengthened if could be Audited or Certified by third parties such as Auditors

# Are you required to meet regulatory requirements?



Q14: Are you required to meet regulatory requirements? (N = 101)

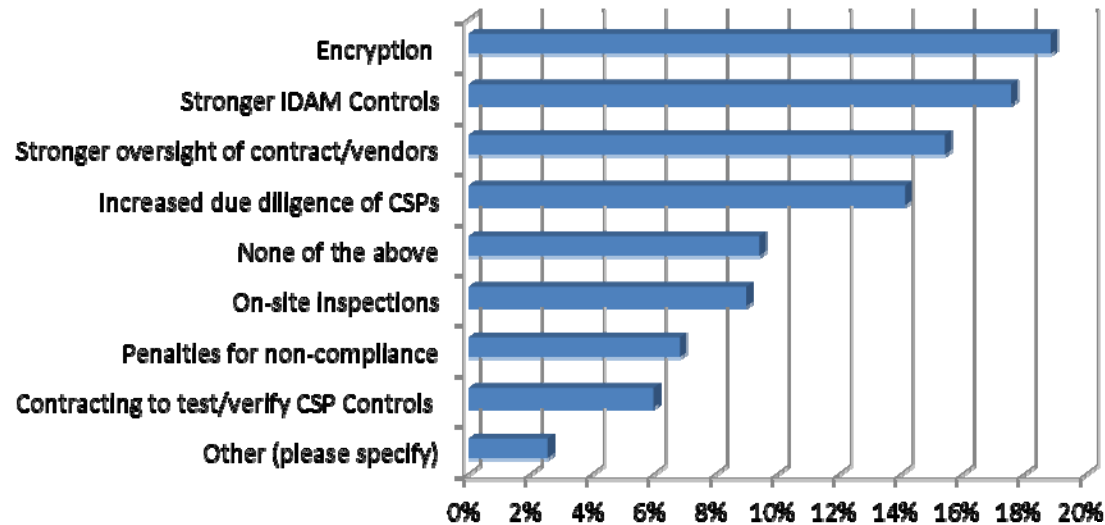
# Which Regulations?



- PCI and SOX are top two cited regulations
  - SOX likely high due to 75% of respondents from US
- EU Privacy Act at nearly 15%
  - Less than 10% of respondents were from EU

Q15: If you have to meet regulatory requirements, please select the ones you are required to follow (Multiple Responses Allowed) (N = 70)

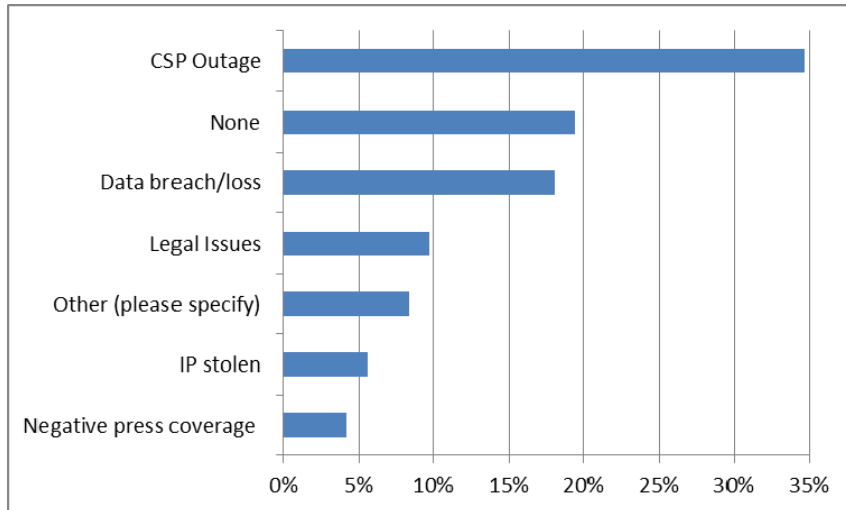
# Controls Implemented to Reduce Risks



- Top two controls implemented by customers to reduce the risks associated with Cloud Computing:
  - Encryption
  - Stronger Identity and Access Management Controls
- Cloud Service Providers that can provide these controls in an easy to implement manner for the customers could have an advantage over those CSPs that do not

Q16: Which controls has your company implemented to mitigate new or increased risks with cloud computing?  
(Multiple responses allowed) (N = 97)

# Has your organization experienced any of the following as a direct result of cloud computing?



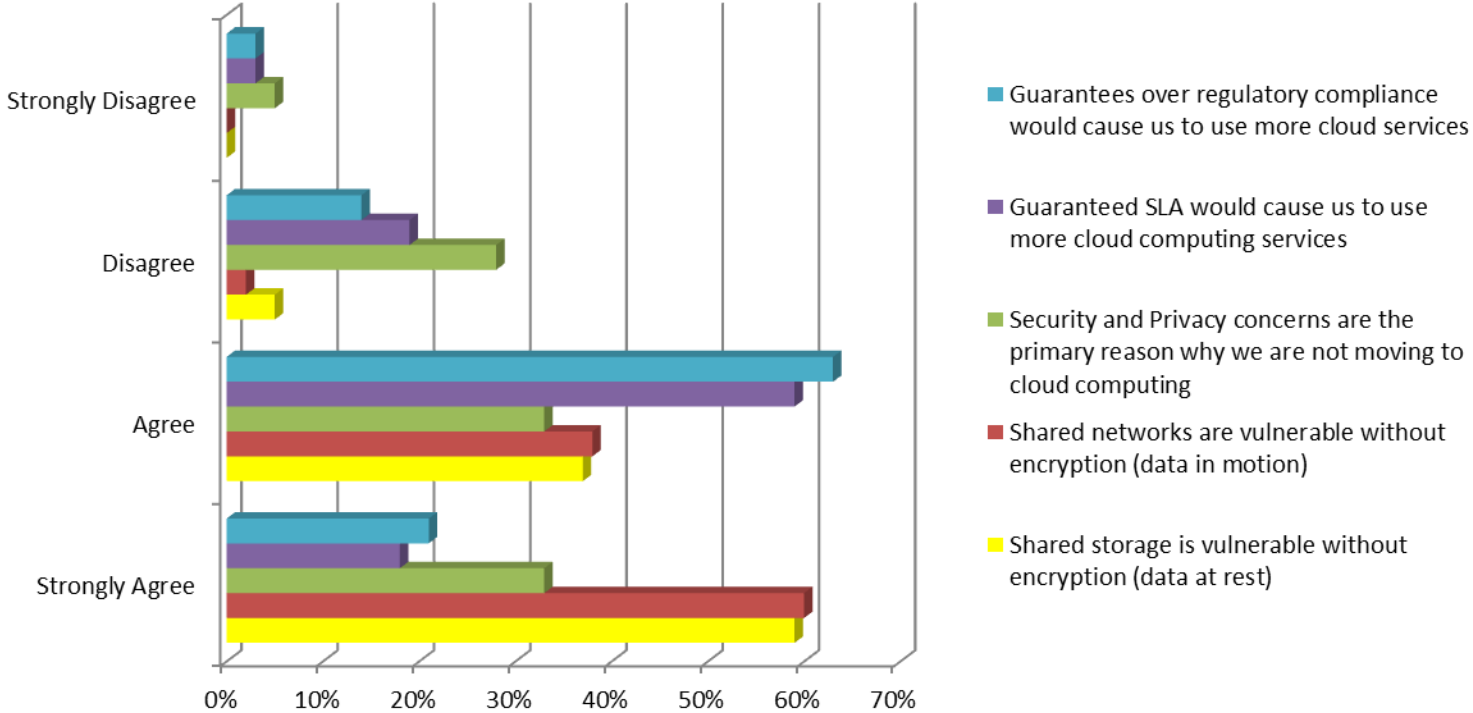
Answers	Response Count	Response %
Negative press coverage	3	4%
IP stolen	4	6%
Other (please specify)	6	8%
Legal Issues	7	10%
Data breach/loss	13	18%
None	14	19%
CSP Outage	25	35%
	<b>72</b>	<b>100%</b>

Answered question	39
Skipped question	68
<b>Total Taking Survey</b>	<b>107</b>

- 39 Respondents answered this survey question
  - Due to multiple responses allowed, total count of responses was 72
- Additional follow up questions will be asked in this area in the next survey
- Responses indicate that:
  - Customers are ready to move to the cloud in spite of negative experiences

Q17: Has your organization experienced any of the following as a direct result of cloud computing?

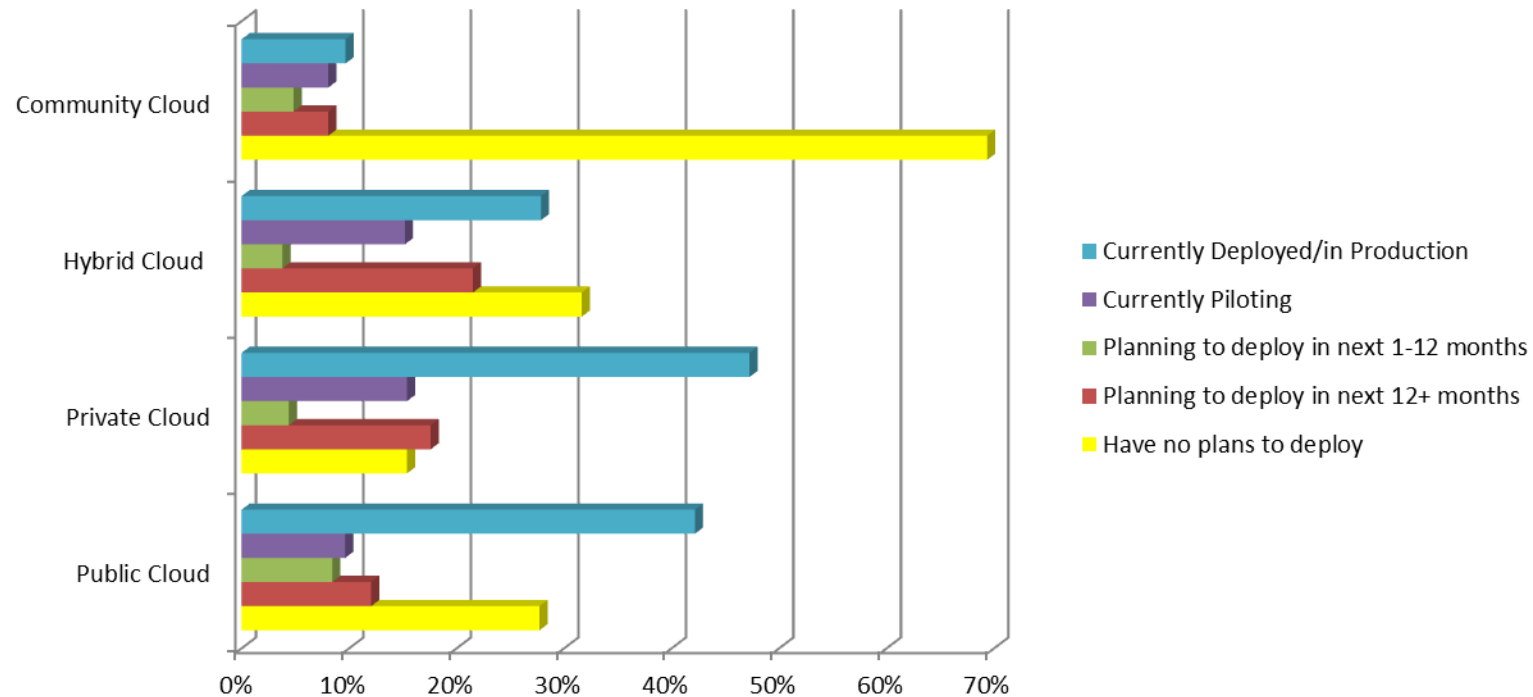
# How strongly do you agree or disagree over the following statements about Cloud Computing?



- Demand for Encryption is very high, based on strong agreement for:
  - Shared networks vulnerable without encryption (data in motion)
  - Shared storage is vulnerable without encryption (data at rest)
    - In question on top 3 concerns for cloud computing, less than 10% indicated a concern around multi-tenancy

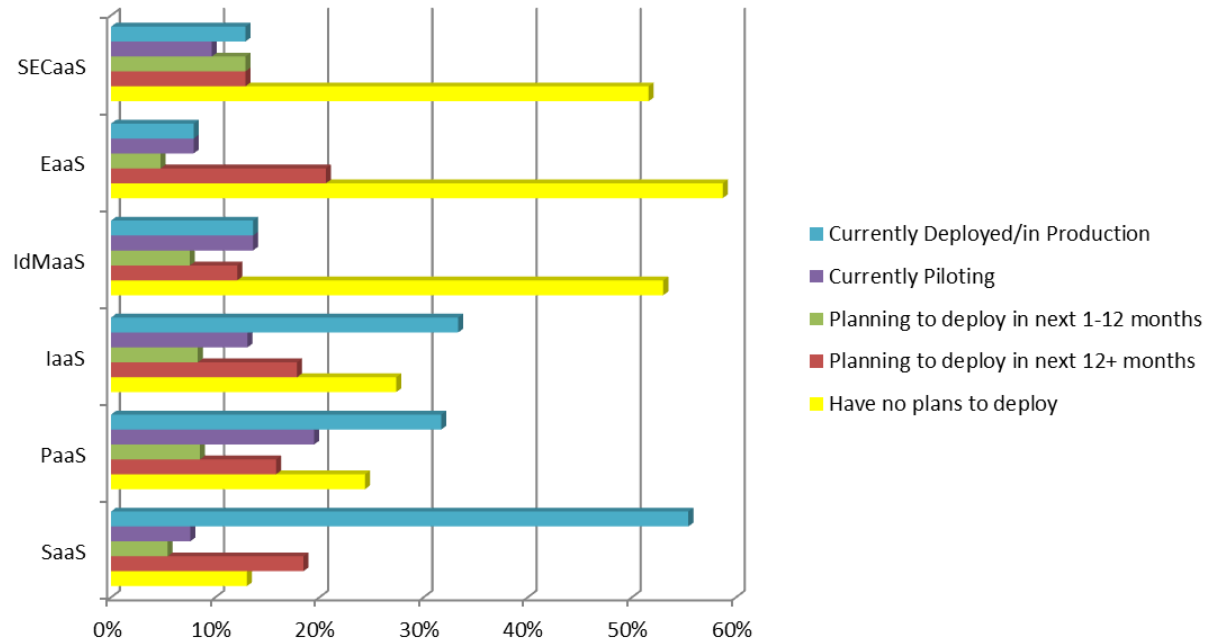


# Types of Cloud Services Using



- Highest reported use of Cloud Services:
  - Private Cloud at 47%
  - Public Cloud at 42%
- Moderate adoption of Hybrid Cloud Services at 28%
- Very little adoption of Community Cloud Services at this time, 70% with no plans to deploy

# Plans to Deploy



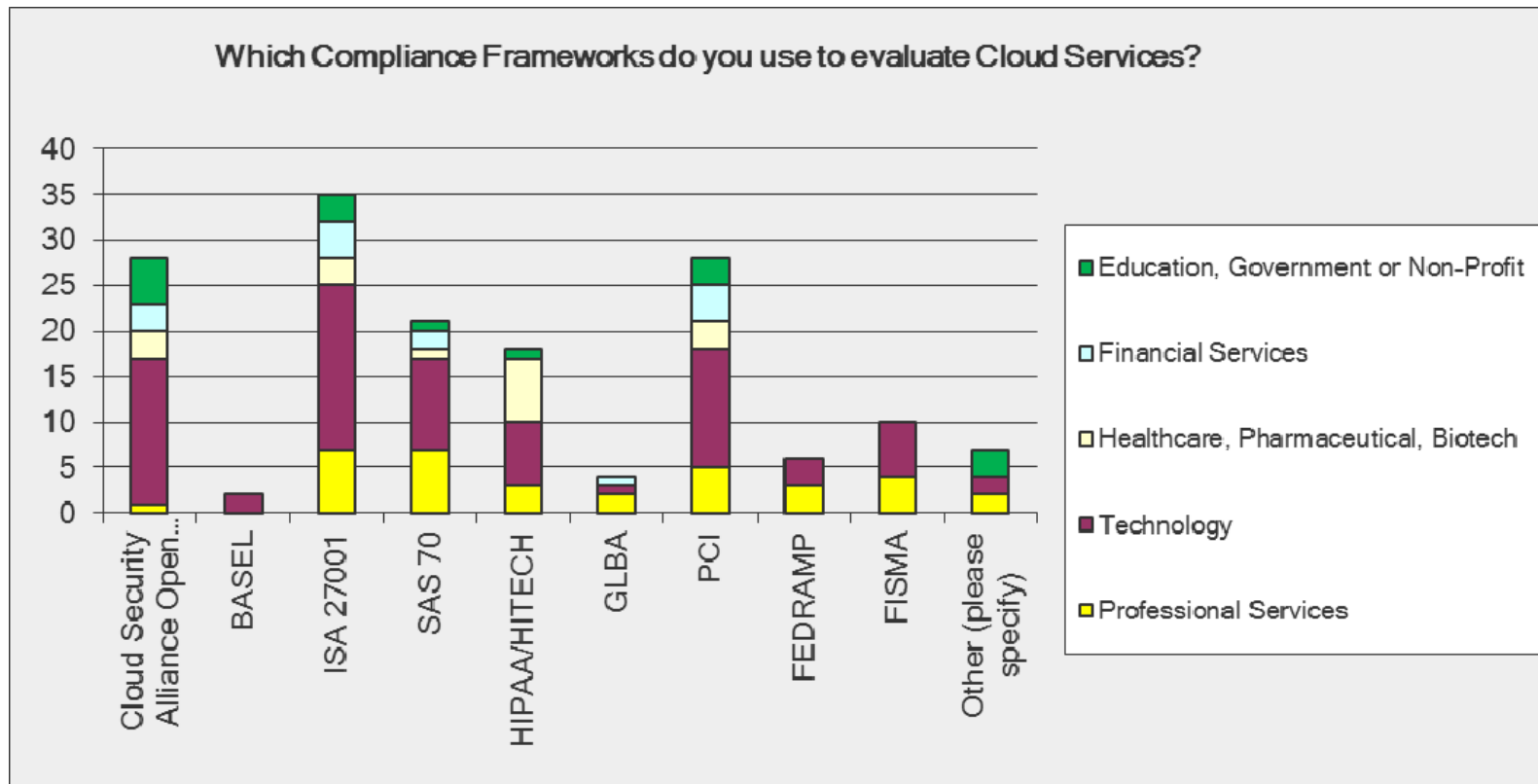
- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)
- Identity Management as a Service (IDMaaS)
- Encryption as a Service (EaaS)
- Security as a Service (SECaaS)

- Deployment of SaaS leads all other services
  - Followed by:
    - IaaS (33%)
    - PaaS (31%)
- Generally speaking, respondents have no significant plans to deploy:
  - Identity Management as a Service (IDMaaS)
  - Encryption as a Service (EaaS)
  - Security as a Service (SECaaS)
- It is interesting to note that these are the solutions customers are asking for in order to move to the Cloud (esp. IDMaaS and EaaS)

# Appendix

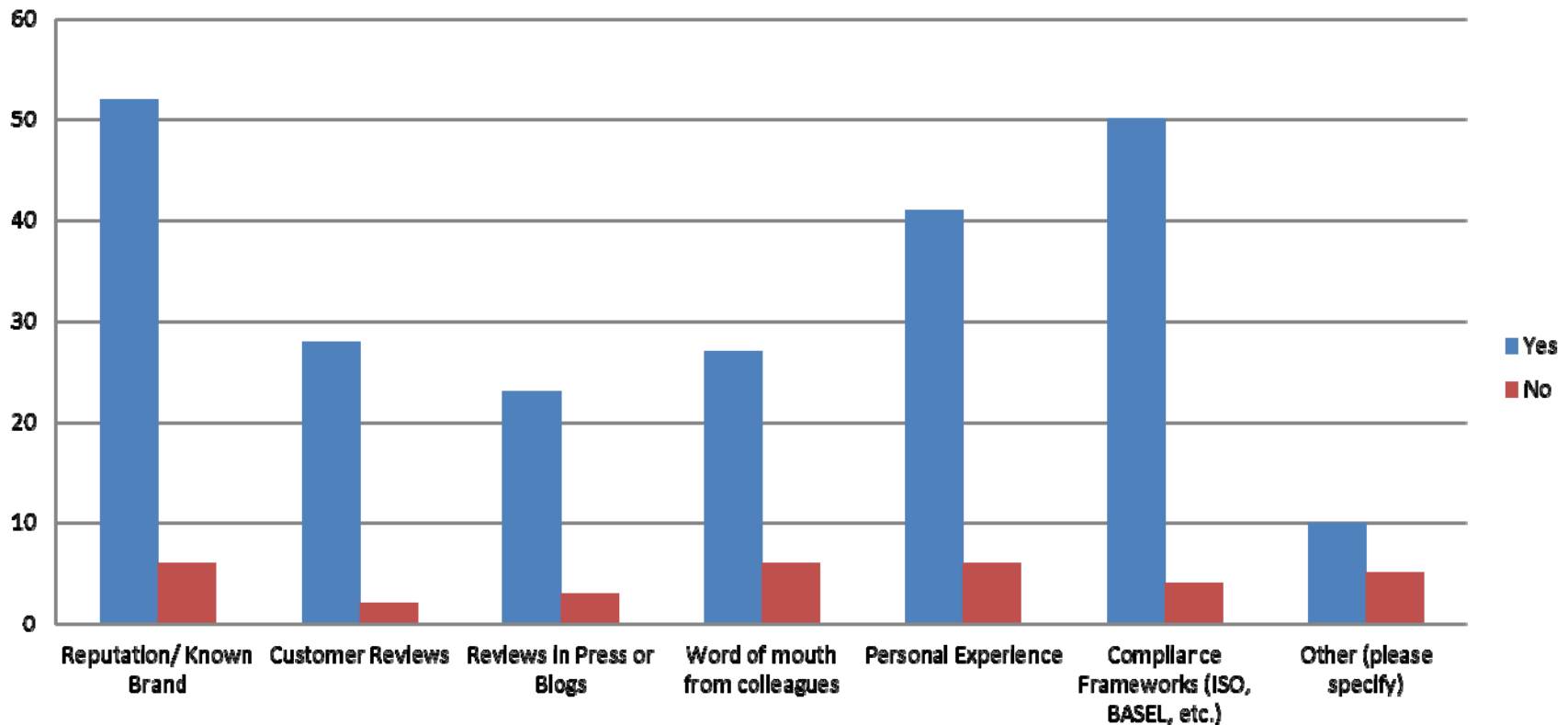
- Selected Crosstabs for additional analysis of the data

# Crosstab: Vertical vs. Compliance Framework (%)



Cross tab of Q4: Which Industry / Vertical best describes your organization? and Q7: Which Compliance Frameworks do you use to evaluate Cloud Services?

# Crosstab of 'Ext Certification (Y/N)' vs. 'Evaluating Security of CSPs'



Crosstab of responses to 'Q12: Importance of External Certification' and 'Q6: Evaluating the Security of Cloud based Applications':

- For those responding 'Yes' to 'external certification would increase cloud adoption', the compliance framework is nearly as important as Reputation and Brand for CSPs

# Crosstab: 'Organizational Loss' vs. 'How do you Evaluate the Security of Cloud based applications you use'?

Of the Cloud Computing security concerns listed below, please identify your top three?

Answer Options	Has your organization experienced any of the following as a direct result of cloud computing?					Response Percent	Response Count
	Customer, employee, or organization data breach/loss	Intellectual Property misappropriated/stolen	Cloud service provider system outage	Negative press coverage due to leaked information that causes embarrassment	Legal Issues		
Physical/Geographic boundary controls	3	1	8	3	1	23.1%	9
Access Control	5	1	5	1	1	23.1%	9
Multi-Tenant	1	2	6	0	1	23.1%	9
Attesting to the integrity of the Hosting platforms	4	0	8	0	2	30.8%	12
Inability to measure security services	7	1	8	1	4	41.0%	16
Concerns about providers security capabilities	4	3	11	1	2	41.0%	16
Lack of transparency / inability to perform audits	7	2	11	2	4	46.2%	18
Lack of control over data	5	1	14	0	3	48.7%	19
<b>Total</b>							<b>108</b>
						<i># of Respondents</i>	<b>39</b>
						<i># who skipped question</i>	<b>0</b>

- For Organizations that have experienced some form of loss in the cloud:
  - Compliance Frameworks are the most important factor in selecting Cloud Service Providers
  - Reputation/Brand is second
- This is a different ranking order than for those who have not suffered a loss, who ranked brand and reputation first

Crosstab of Q17: Has your organization experienced any of the following as a direct result of cloud computing? And Q6: How do you evaluate the security of Cloud based applications you use?

# Crosstab of Organizational Loss vs. Top 3 Cloud Security Concerns

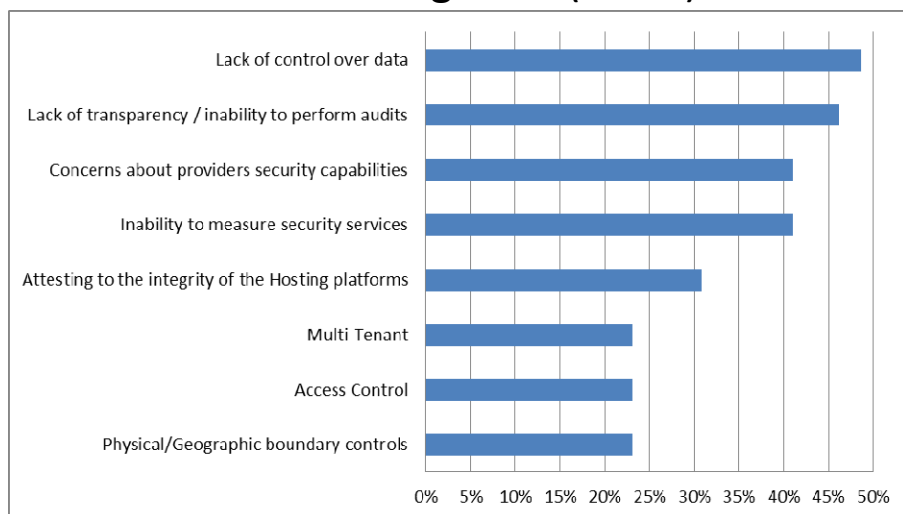
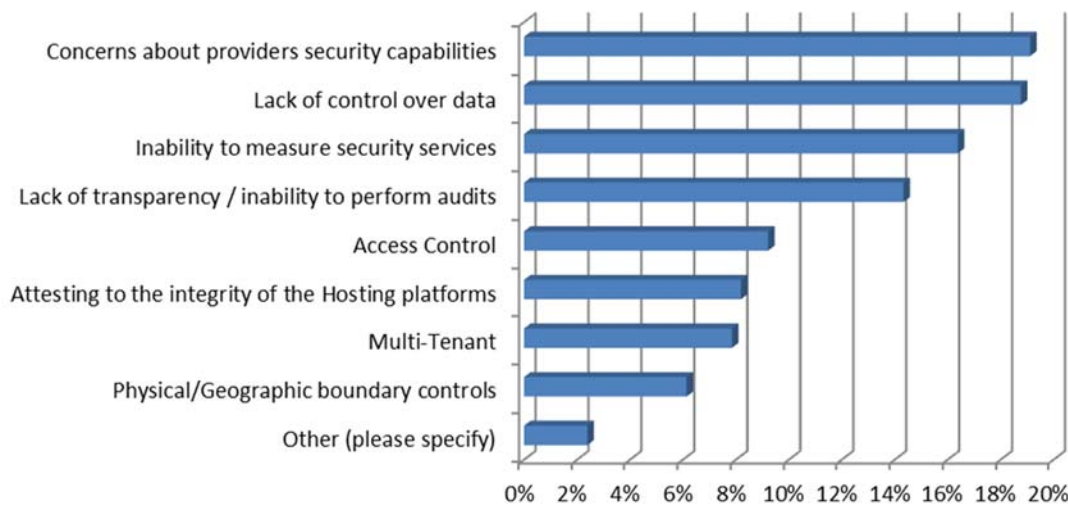
- Results from all respondents (N = 109) are included to the right



- Results from Organizations that have experienced loss are below



Organizations that have experienced loss:  
Criteria for evaluating CSPs (N=39)



Crosstab of Q17: Has your organization experienced any of the following as a direct result of cloud computing? and Q11: Of the Cloud Computing security concerns listed below, please identify your top three?