Factors Affecting the Adoption of Cloud Computing

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Cloud Computing

- Four deployment models – private, community, public, hybrid

- Three service models – software as a service, infrastructure as a service, platform as a service

- Five characteristics – on demand self-service, broad network access, resource pooling, rapid elasticity and measured service

Motivation for Study

- Cloud computing has the potential to transform a large part of the IT industry

- Despite rapid emergence of cloud computing, empirical research on adoption of cloud services is lacking

Theoretical Framework

- Tortnatzy and Fleisher Adoption Framework
  - Technology, Organisation, Environment (TOE)
- Technology– relative advantage, compatibility, complexity, trialability, observability
- Organisation– structure and processes of an organisation
- Environment – industry, competitors, regulations

Research Methodology

- Investigate the factors that impact cloud adoption
- Research Questions
  - What technological factors impact the adoption of cloud computing
  - What organisational factors impact the adoption of cloud computing
  - What environmental factors impact the adoption of cloud computing
- Case studies of service providers and their customers

Case Studies

Firm	Industry	Interviewees
Case Study 1 – SourceDogg (SaaS)		
SourceDogg (Service Provider)	Procurement software	Chief Executive Officer (1 interview Executive Director (2 interviews) Chief Technology Officer (1 interview
IBTB (Customer)	Public Sector Body (Health)	Purchasing Manager (1 interview)
APM (Customer)	Public Sector Body (Food and Drink)	Procurement Officer (1 interview)
Case Study II – AD Networks (IaaS)		
AD Networks (Service Provider)	IT and Networking Solutions	Chief Technology Officer (1 interview)
Information Mosaic (Customer)	Global Securities Processing	Product Manager (2 interviews) IT Manager (1 interview)
Case Study III – Almir (SaaS)		
Almir (Service Provider)	Consultancy	Managing Director (2 interviews) Developer (1 interview)
NDC (Customer)	Electronics	IT Manager (1 interview)

Technological Factors impacting Adoption

- Relative Advantage
  - Benefit: savings in terms of software and hardware costs, scalability, time-savings

- Compatibility
  - Benefit: ability to streamline and improve internal processes

    "a lot of the online and cloud tools are much easier to bespoke yourself and to continually update as you change your business".

  - Challenges: integration; bandwidth and connectivity

Technological Factors impacting Adoption

- Complexity
  - Benefit: cloud systems are 'simple to use'
  - Challenge: training and handholding are necessary; need to build systems intuitive to user needs

"people already know how they like to operate. So if you can make the system intuitive, they don't have to go and pick up a manual every time they turn on the screen"

- Trialablity
  - Benefit: can carry out pilot studies/ trials

Organisational Factors impacting Adoption

- Benefit: improves collaboration and promotes openness ('internal facebook')

  "we can all go in and just see what's going on. When people know what's going on…like from a work point of view…, they feel they are part of something".

- Benefit: increases traceability and auditability

  "transparency and integrity are very important with public and private sector bodies…for both sectors we need to demonstrate that we are doing things properly"

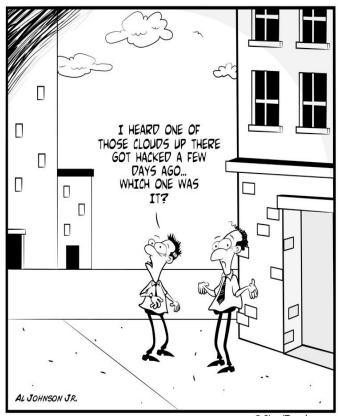# Organisational Factors impacting Adoption

- Challenge: cloud adoption represents shift in organisational norms and culture
  - IT managers fear losing control of IT environment

    "the guys who are actually in charge of the physical boxes- they don't like this idea of cloud"

    "What if it breaks, where are we left then"

  - Trust in service providers' ability to respond and sort out issues is imperative
  - IT managers need to adjust their skills to suit the cloud landscape

- ## Security and legal issues
  - – data jurisdictions, security risks and data confidentiality

"clients need to examine exactly what they are doing now to see if it is any more secure that what vendors are proposing in relation to cloud technologies. I guarantee it's not".

  - – Firms thinking of implementing a cloud system should start with a lightweight application

Environmental Factors Impacting Adoption

- Lack of cloud standards

  "if a hosting company takes my business, I would expect to see that they have addressed certain business continuity and data protection standards"

- Perception of the term 'cloud'
  - *"If the term cloud wasn't around, would we be better off?"*
  - Service providers in the study purposely tend not to talk about cloud but rather a new service delivery model

- Need for real world examples

- Once people are educated on how best to govern and manage the cloud process, cloud computing would be more rapidly adopted.

Discussion & Conclusion

- Cloud computing saves companies time, reduces costs, streamlines internal processes etc.

- One undocumented adoption factor is the desire to improve collaboration internally and externally

- Security and legal issues highlight the need for educational awareness of the regulatory and legal environment

Discussion & Conclusion

- Many of the issues are psychological or user-related

  - Perception of the term 'cloud'

- Employees need to be prepared for this new learning curve

- Future research needs to consider the role of the IT manager and changing skills-set

Thank you!

Any questions?