The Opportunities and Challenges of Hosting on the Cloud - 2014

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Overview

• What is Cloud Computing?
  – Why Cloud?

• Cloud Benefits & Threats

• Cloud Demonstration

• Migration Issues
What is Cloud Computing?

• It is a model for enabling;
  – ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction.

• This cloud model is composed of five essential characteristics, three service models, and four deployment models

  (Mell & Grance, 2011)
The 5-3-2 Principle of Cloud Computing

Hybrid cloud

Application
Runtime
Virtual Machines

PRIVATE

PUBLIC

SaaS
PaaS
IaaS

On-demand self-service
Ubiquitous network access
Location transparent resource pooling
Rapid elasticity
Consumption-based chargeback model

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Why Cloud?

Library Expenditure as % of Total University Expenditure
(Average of 40 US Institutions Reporting Since 1982)
Why Cloud?
Library Projections: 2013

(PCG Plus Consultancy, 2013)
Why do SMEs Choose the Cloud?

Flexibility 50%

Increased Efficiency 46%

Hardware Cost Savings 49%

Space Savings 42%

Energy Savings 36%

Simplified Infrastructure 32%

Scalability 32%

Reduced Integration Issues 23%

Improved Interoperability 25%

Other 9%

98% of SMEs think that IT is important to success¹

The cloud has given companies the chance to adapt and compete more successfully in a changing market. Several industry estimates suggest that businesses can save around 25% of their IT outgoings by utilising cloud computing².

So what is the greatest benefit? Flexibility rather than cost savings alone was cited as the primary driver by those responding to the Cloud Industry Forum's research questions³.

The Cloud: Changing the Ecosystem

(KPMG’s, The Cloud: Changing the Business Ecosystem, 2011)
Cloud Demonstration (Amazon AWS)

Get Started for Free
Launch virtual machines and apps in minutes.

AWS FREE TIER
Gain hands-on experience with AWS free for 12 months.

WHAT IS AMAZON WEB SERVICES?
Learn about the AWS platform, products, and services.

GET STARTED WITH AWS
Learn how to start using AWS in under 15 minutes.

What's New with Amazon Web Services
Check List Prior to Cloud Decision

• IaaS & Paas
  – What are your approximate bandwidth requirements
  – The exact number of CPU cycles you require
  – Amount of storage
  – Redundancy

• SaaS
  – Interoperability
  – Lock in
  – License Agreements
  – Complete Data ownership of traffic
Check List Prior to Cloud Decision

- Ownership of data
- Data privacy and security
- Physical Location of data
- E-Discovery
- Governing laws and jurisdictions
- Forensics and criminal investigations
- Your responsibility for data security

- Your right to audit information security practices
- Service Level Agreements (SLA) - including penalties / compensation
- Insurance and liability
- Exit terms and conditions of cloud service
Cloud Adoption Framework for SMEs

(Cloud Compare, 2014)
Future Discussion

• Will the discussion on Network Neutrality create pinch points in the infrastructure?
  – Negates SLA with Cloud Provider

• Should the role of the Librarians evolve further?
  – gatekeepers for the era of “Big Data”
  – University of Ulster doing research on data obesity in the cloud.
    • No one ever deletes data
      – How will we store it?
      – How will we catalogue it?
  – The Fog (IOT)
Further Reading

• ‘Cloud Computing for Libraries’ – Breeding, M. 2012: Facet Publishing


• ‘Cloud Computing: Case Studies and Total Costs of Ownership’ – Han, Y., 2011, Information Technology and Libraries
Further Reading

• Sample of the Service Level Agreement between the City of Los Angeles & Google Apps

• Deloitte Consulting – Cloud Computing Risk Intelligence Map

• Brian Hickey & Damien Kettle – Cloud Demonstration
  – https://www.youtube.com/watch?v=7Yo7_c3_0GM&feature=youtu.be
Our Disaster Recovery Plan Goes Something Like This...
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