Benefits and Limits of Cloud Computing

by

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• Develop a basic understanding of cloud computing

• Learn how to apply the principals of cloud computing to your firm

• Benefits of utilizing the cloud

• Understand the limitations of the cloud in regards to BIM and interoperability
Summary

- What is the Cloud? 🌈?
- How can I use the Cloud? 🌞?
- What can the Cloud do for me? ☔️?
- What does BIM on the Cloud mean? ⚡️?
- When can I use BIM on the Cloud?
What is the Cloud?

Programs, tools or services using shared resources available over a network in lieu of being local.

You

Network

Shared Computers

The Cloud
Cloud Usage Examples:
Applications, Computing, Storage

Cloud Applications

Cloud Computing

The Internet

Cloud Storage

Yahoo! Mail

Google Docs

Gmail

Rackspace

Azure

Amazon Web Services

AIA
The Cloud vs Cloud Computing
Noun vs Adjective?

Cloud Applications: programs on the cloud

Cloud Computing: using shared computing resources

Cloud Storage: shared storage
Types of Clouds: Public Clouds

Benefits

- No upfront hardware costs, time, resources
- Per-usage pricing
- Scalability
Public Clouds

*Service available to anyone*

**Benefits**
- No upfront hardware costs, time, resources
- Per-usage pricing
- Scalability

**Drawbacks**
- Not as flexible
- Can be expensive with heavy usage
- “less” secure
Private Clouds
Private to your organization

Benefits
- Highly flexible
- Lower recurring costs
- “more” secure

Drawbacks
- Larger upfront costs
- Maintenance costs - IT
- Scalability
Cloud Storage

Public (service available to the public)

- 'Store and Forget'
- 'Infinite' size
- Access via Web Browser
Cloud Storage

Public
- 'Store and Forget'
- 'Infinite' size
- Access via Web Browser

Private
- Faster access
- Easier access
- Access via Network Places
Cloud Computing
Using shared computing resources

Benefits: Public Cloud

- Use a computer without paying full price
- Easily scale from smaller to larger systems as necessary
Cloud Computing Benefits

Private
- Pool resources
- Remote Desktop
- Easy administration
How do we access 'the Cloud'?

Cloud Storage: Web Browser/Windows Explorer
- Web Interface
- A folder in Network Places

Cloud Applications: Web Browser
- Web Interface

Cloud Computing: Remote Desktop
- Best with newer Windows versions (e.g. Win7/Server 2008 R2)
What can the Cloud do for me?

- Reduce/Consolidate IT infrastructure
- Manage costs more predictably
- Longer upgrade cycles
- Lower per-user costs
BIM Collaboration on the Cloud

- Integrated Project Delivery
- Shared BIM models

Construction – BIM Model – Engineers

Architects
Collaboration and Interoperability

Cloud allows collaboration between local and remote teams

The Cloud is **NOT** a magic connector between applications

Modified from source: http://wikihelp.autodesk.com/Product_Help/Revit_Architecture/Large_Team_Workflow
BIM with Cloud Computing

High Performance Workstation
BIM on the Cloud

- Model Conversion/Interoperability
- Model Collaboration
  - Revit Server
- Rendering
- Structural/Energy Analysis
- Green Analysis
  - Autodesk Labs
Cloud Limits and Considerations

- Large model sizes
- Specialized IT expertise
- Different BIM applications/ software
- Application support for Cloud technologies
Future of BIM on the Cloud

Integrated Project Delivery with shared BIM models

Remote/Global Users

Private clouds with shared High Performance Workstations

High Performance Workstation

More applications tailored to BIM

Integrated Project Delivery with shared BIM models

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High Performance Workstation

More applications tailored to BIM
Conclusion

- The cloud is the future
- Thank you to AIA NTAP and Kimberly Yoho
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