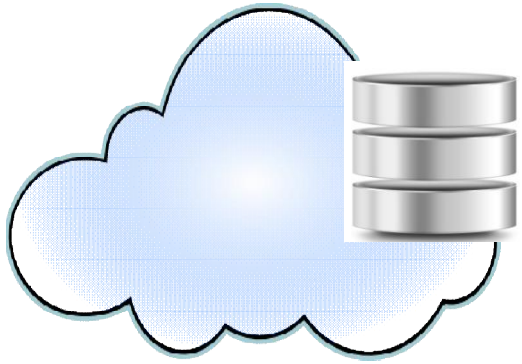
SOA Lightning – *Harnessing the power of SOA*

Data and the Cloud
DAMA Phoenix March 8, 2012



Data and the Cloud

Presentation Topics

- You will learn about and understand:
  - Cloud Definitions
  - How to evaluate the risks, complexities and rewards for a "Software as a Service" solution
  - The steps you need to take in order to enable data integration with the cloud solution
  - How can you plan and prepare – Contingency planning if your Cloud project goes bad

- Let's try to answer these important Questions:
  - Can your enterprise deliver a cloud solution faster and at a far lower cost than a more traditional IT developed solution ?
  - Risks and how to avoid them (or at least have awareness)
  - Are there hidden costs ?
  - Data Integration is key !
  - Techniques to make your cloud solution successful

- This session will also close with an interactive, audience participation session. Audience members will be encouraged to share their cloud experiences, their concerns and their approach to success.

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Cloud Definitions

Cloud Perspectives

Cloud Perspectives – Public and Private Cloud

- A simple way to distinguish between public and private clouds is to view the cloud offering or service from the perspectives of the provider and the consumer.

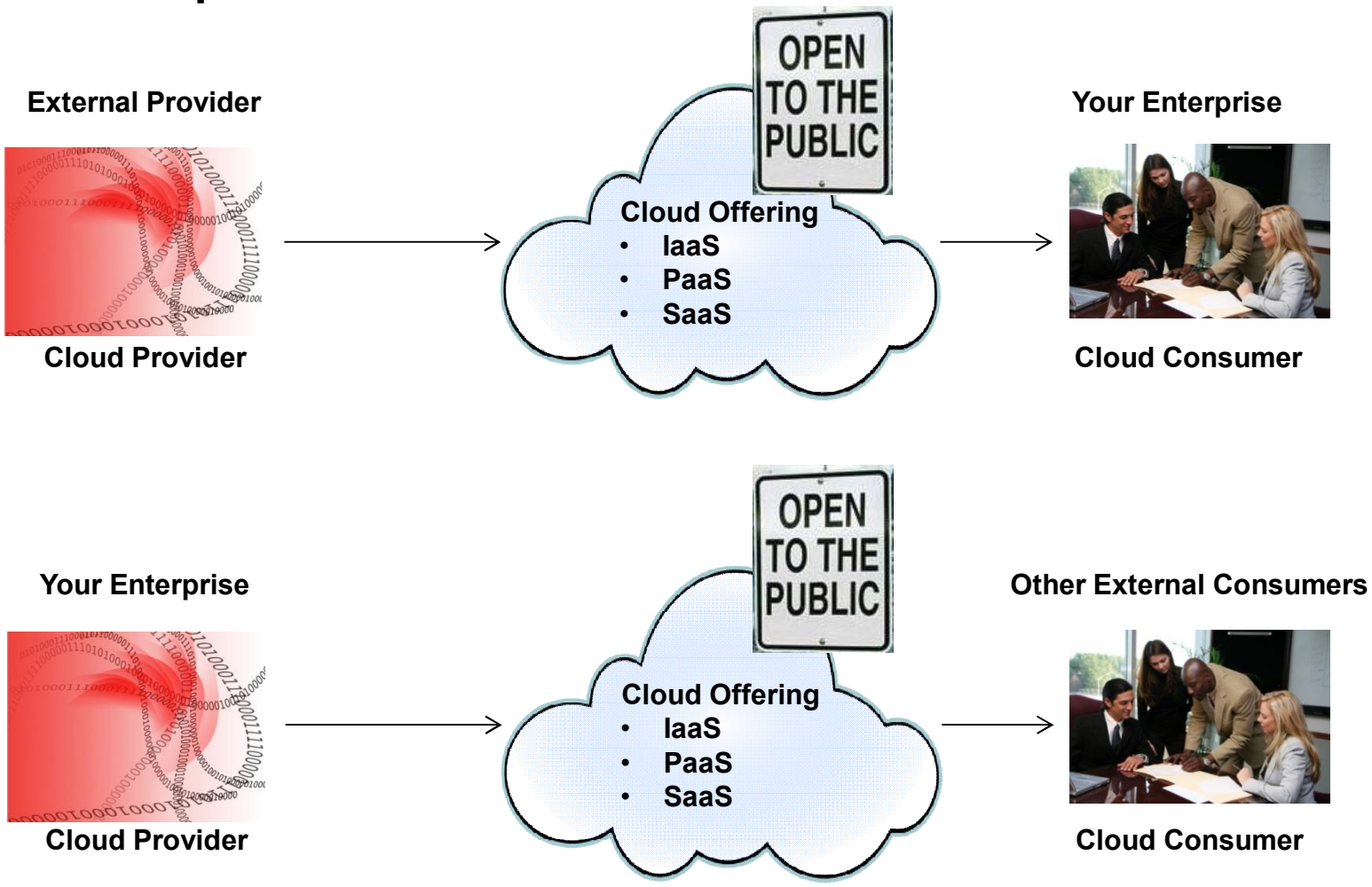
- If the cloud is being offered by your enterprise or organization, you are the provider.

- A "**Public**" Cloud is most often offered to consumers outside of your enterprise or organization. Your enterprise might be the provider of the Public Cloud offering, or it might be provided by another organization.

- A "**Private**" Cloud is most often offered to consumers within your enterprise or organization. Further, a Private Cloud is also usually offered by your enterprise or organization (sometimes referred to as an "Internal" Cloud).

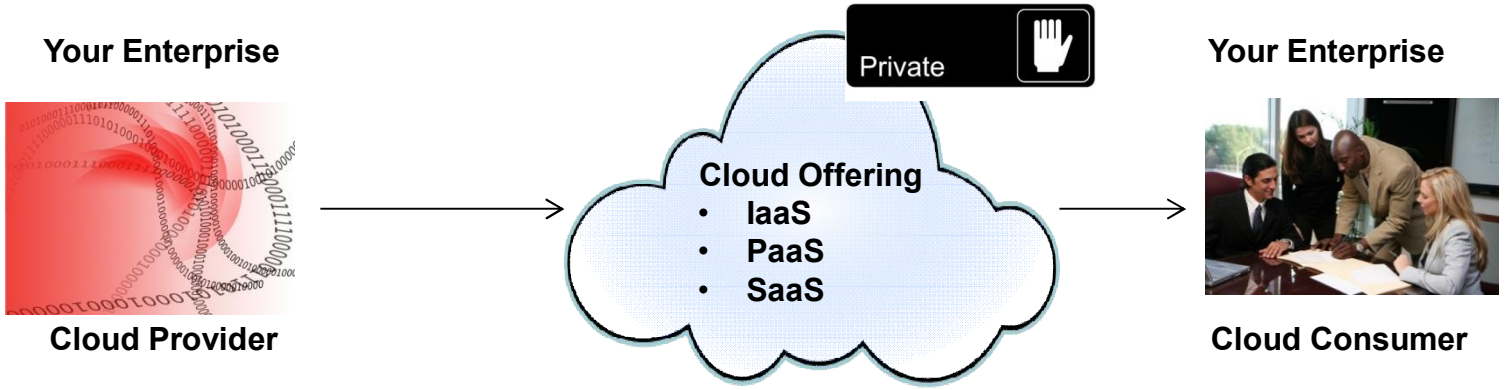
Cloud Perspectives

Cloud Perspectives – Public Cloud



Cloud Perspectives

Cloud Perspectives – Private Cloud (internal)



Cloud Definitions

Cloud Definition and Characteristics

(derived from Gartner, and modified)

- Cloud Computing:

  The set of disciplines, technologies, and business models used to deliver IT capabilities (software, platforms, infrastructure) as an on-demand, scalable, elastic service.

- Cloud Characteristics:
  - Dynamic, virtual, multi-tenant, and shared infrastructure
  - On-demand and self-service provisioning
  - Elastic and scalable
  - Priced by consumption, users or connections, data volumetrics, and user specified configuration
  - Available across common networks (e.g. Internet)

- Cloud Offering Types:
  - IaaS - Infrastructure as a Service
  - PaaS - Platform as a Service
  - SaaS - Software as a Service

Cloud Definitions

IaaS - Infrastructure as a Service

- Individual hardware components and capabilities
  - Computational / Processor
  - Storage
  - Network

- Infrastructure as a Service offerings can be combined as needed
- Infrastructure as a Service components can be assembled from different providers and also from brokers

- When might an IaaS Cloud solution be a good idea ?
  - You need additional, temporary disk space
  - You need additional computational power for a short period of time
  - You need to augment your network.

Cloud Definitions

PaaS – Platform as a Service

- Configurable technology platforms:
  - IaaS components (Storage, Computational Power, Networks)
  - Operating Systems
  - Databases
  - Application Servers
  - Web Servers
  - JVM's
  - Application Software (development, testing and run-time)

- Platform as a Service offerings can be configured as needed (e.g. "turn-key")
- Platform as a Service components are usually assembled from one provider. However, individual PaaS components might be provided by brokers

- When might a PaaS Cloud solution be a good idea ?
  - You need a quick, temporary test environment
  - You need temporary environment redundancy
  - You need to evaluate a platform configuration that you will be building in-house

Cloud Definitions

SaaS – Software as a Service

- Configurable application software and development platforms:
  - Application development tools (often proprietary and business user focused)
  - Application run-time software
  - Application integration tools (simple API's)
  - Batch or streamed processing tools

- Software as a Service offerings might allow some level of simple configuration
- Software as a Service offerings will often include some form of volumetric governance or metering
- Software as a Service components might be assembled from one provider, or from many providers. However, SaaS consumers will usually not be aware nor have the ability to control the providers

- When might a SaaS Cloud solution be a good idea ?
  - You need a quick, simple, easy to develop application
  - The application does not require extensive regulatory, PCI or PII controls
  - Operational risks such as availability and performance are acceptable to your enterprise
  - Your internal IT development team does not have bandwidth

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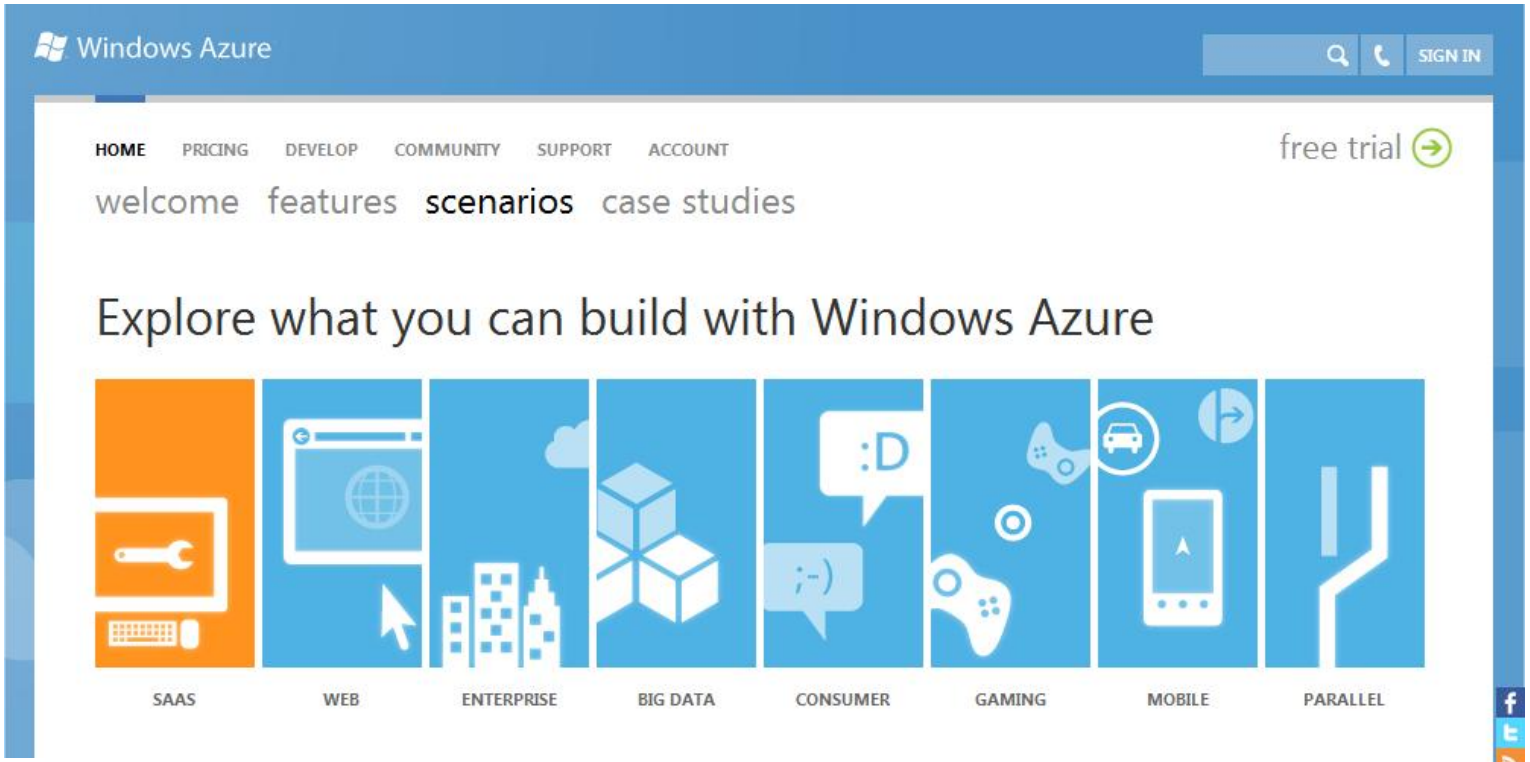
A few examples of well-known Cloud Providers and Offerings

Example Cloud Providers

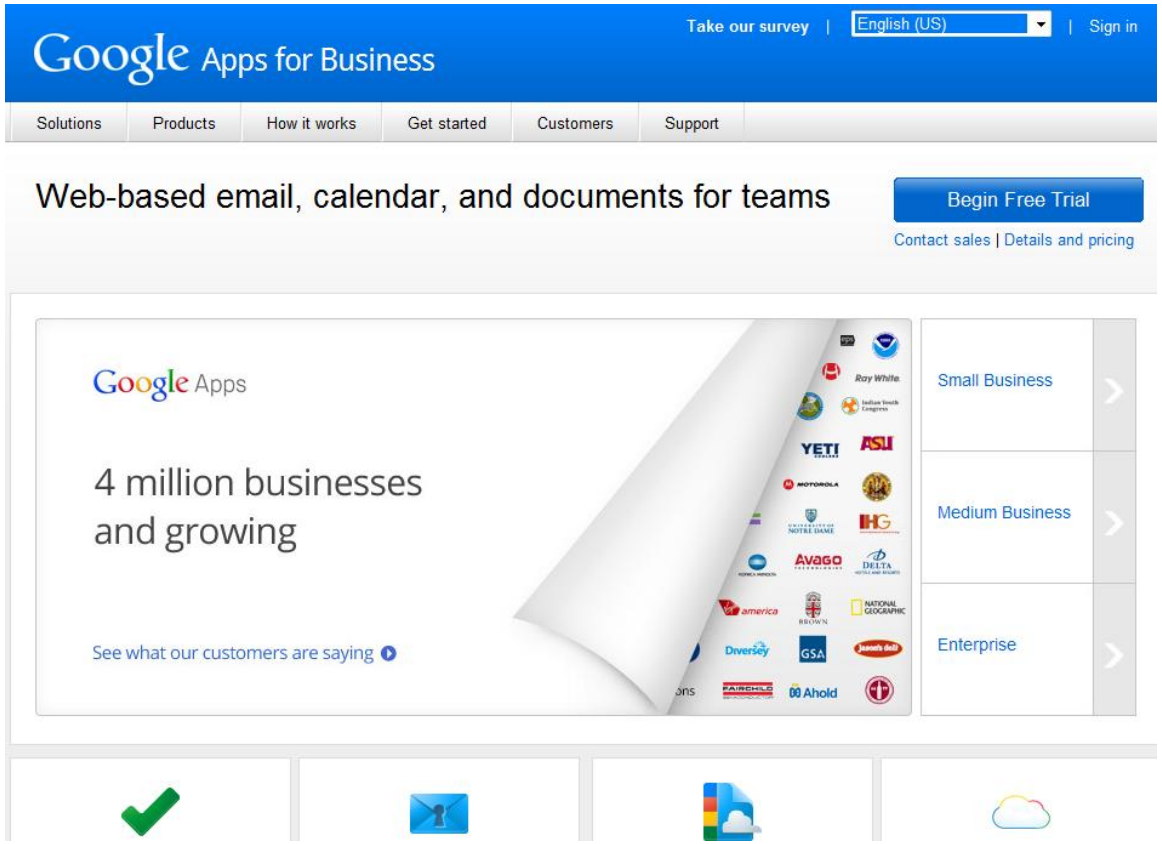
Windows Azure



Microsoft ™
http://www.windowsazure.com/en-us/home/scenarios/saas/

Example Cloud Providers

Google Apps



Google™
http://www.google.com/apps/intl/en/business/index.html

Example Cloud Providers

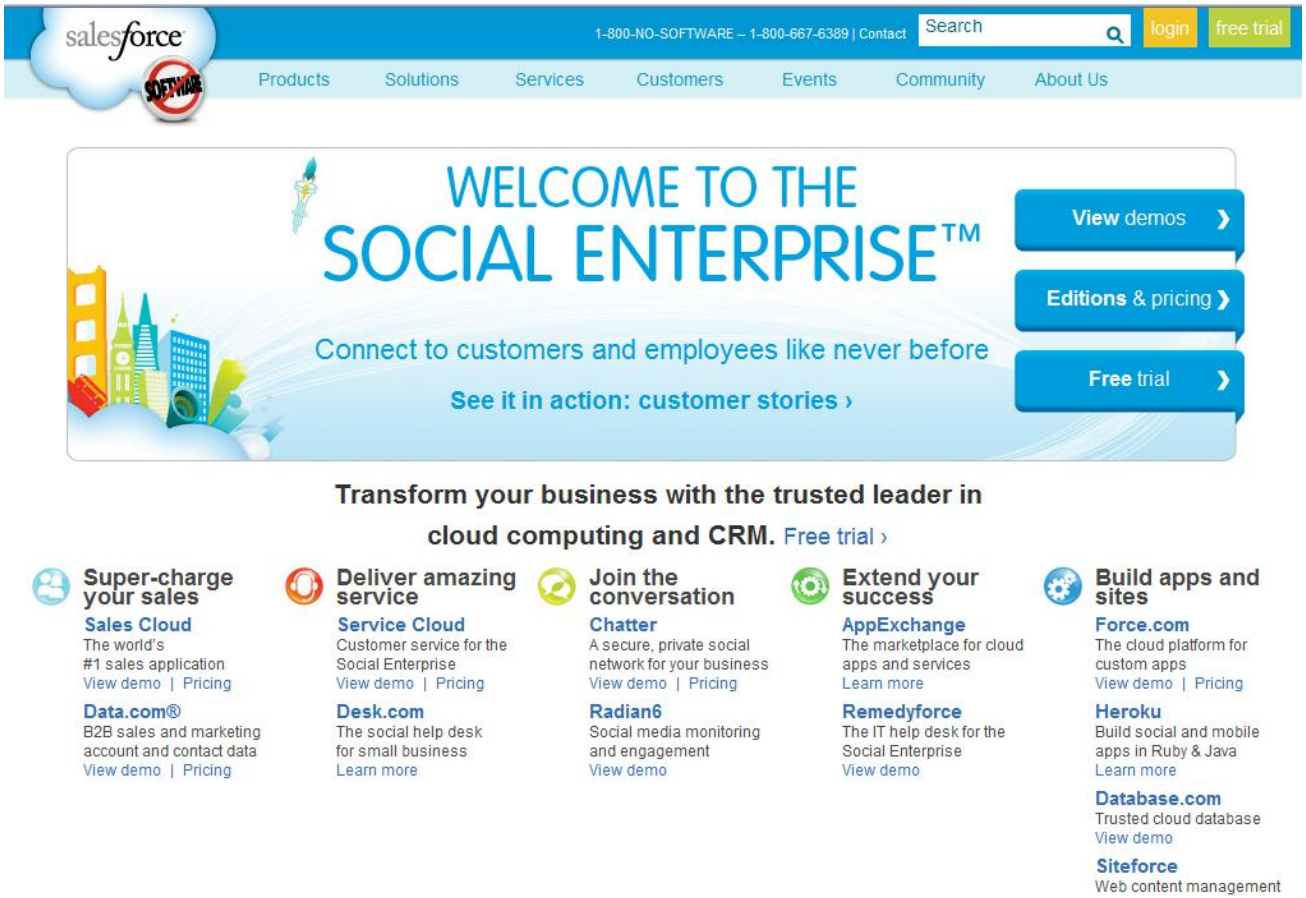
Amazon EC2

amazon

Amazon™
http://aws.amazon.com/ec2/

Example Cloud Providers

Salesforce



Salesforce™
http://salesforce.com

Example Cloud Providers

How would you classify each of the following Cloud offerings ?

- IaaS – Infrastructure as a Service
- PaaS – Platform as a Service
- SaaS – Software as a Service

Example Cloud Providers

How would you classify each of the following Cloud offerings ?

- IaaS – Infrastructure as a Service
- PaaS – Platform as a Service
- SaaS – Software as a Service

Is it Market-Hype, or is it “real” ?

Information Management, “KPMG: Cloud Investments To Skyrocket in 2012”
Seth Fineberg, OCT 12, 2011 10:17pm ET
http://www.information-management.com/news/KPMG-Cloud-Investments-Skyrocket-2012-10021301-1.html

- KPMG found that **economic factors were cited by 76 percent of the companies surveyed as their reason for cloud adoption** ...

- The research also found that **81 percent of participants said they were either evaluating cloud applications, planned a cloud implementation, or had already adopted a cloud strategy and timeline for their organization** ...

- Additional survey findings revealed that **75 percent of total respondents globally said they need to show a cost savings to justify a move into the cloud**.

  The KPMG survey was conducted in 15 countries from February to April 2011, and canvassed 806 senior executives—nearly 50 percent of them from the C-level—in companies that use or plan to use the cloud, as well as 123 executives from cloud service providers.

Is it Market-Hype, or is it “real” ?

Information Management, “U.S. Dominates SaaS

By Valerie Valentine SEP 15, 2011 3:52pm ET

http://www.information-management.com/news/us-dominates-saas-10021132-1.html

- Gartner’s regional SaaS forecast research shows that North America will account for 63.6 percent of revenue in 2011.

- **By the end of 2015, North America's share will represent 60.8 percent of worldwide SaaS revenue** …

- Worldwide SaaS revenue is on pace to reach $12.1 billion in 2011, a 20.7 percent increase from 2010 of $10 billion, according to Gartner analysis.

  Gartner report "Forecast: Software as a Service, All Regions, 2010-2015."

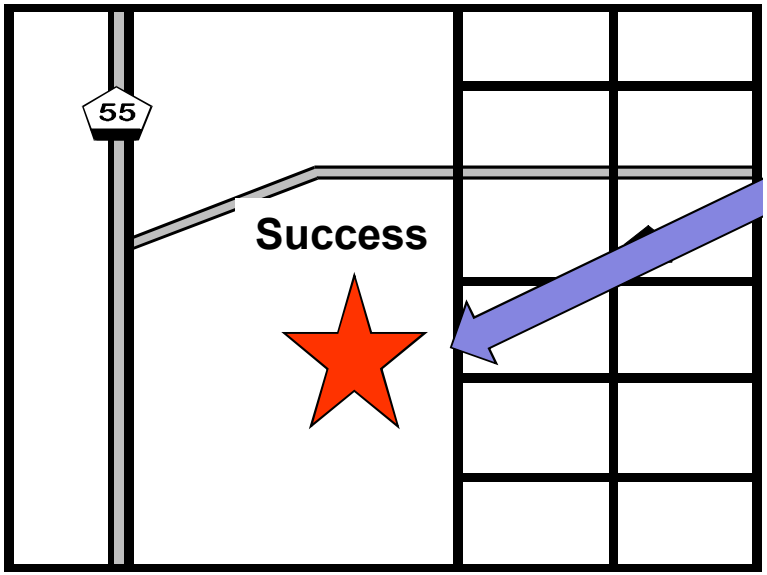
Is it Market-Hype, or is it “real” ?

Cloud Impressions

A few of the more common “impressions” that business executives have about Cloud computing

- **Cloud is Less Expensive**
  Cloud is less expensive than hosting and developing the technology internal to their environment
- **Cloud offers Faster Time-to-Market**
  Cloud avoids the need for internal technology involvement. It simplifies the technology to a level where the business user can easily onboard and develop a cloud application
- **Cloud is Lower Risk**
  Since the public Cloud offering is completely hosted and managed by an external provider, they take on all of the risk
- **Cloud is Flexible**
  Cloud resources can be increased or decreased to meet my demand. They only have to pay for what they need or use

Which of the above do you think are real, or might be market hype ?



Cloud Success Criteria

A Cloud project can provide a tremendous value proposition for your enterprise. However, and in order to meet expectation, there are a few important criteria to consider:

1. **Market-hype.** As technology professionals, we should look past the hype and perform reasonable due diligence to ensure that requirements will be effectively met.

2. **Cost** . The obvious costs for a Cloud solution (license, resource consumption, etc.) are often far less than the (internal) enterprise technology route.

   However, there are many other costs to consider. Three of the most significant, impactful and overlooked costs of a Cloud solution are:

   - **Integration Costs** – Onboarding, integration development, testing

   - **Regulatory Compliance Costs** – Ensuring the Cloud solution meets all of your regulatory and compliance needs (data standards, information protection, security)

   - **Data** – Unless the Cloud solution is truly stand-alone (which is VERY rare), data plays a key and critical role. Getting your data into the cloud, managing your data in the cloud, ensuring a high degree of data quality in the cloud, protecting your data in the cloud, enriching your data in the cloud, and re-integrating your data back into the enterprise from the cloud are significant

Cloud Success Criteria

3. **Solution Placement**. Remember that as a Cloud consumer, you are relying on the Cloud Provider for things like availability, resiliency, performance.

   Is a Cloud offering the right solution, when your requirements represent:

   – Enterprise scale, mission critical functionality
   – A market-facing customer application

4. **Regulatory Compliance**. You need to determine if your Cloud provider can meet applicable regulatory compliance. Additionally and if your business users are now the "developers", you will need to ensure that they are also in compliance
   (e.g. Capture of and exposing PCI or PII data, requisite controls – access rights, authentication, encryption – in motion and at rest, display obfuscation)

5. **Backup and Recovery**. Ensure that your Cloud provider has a proven backup and recovery framework in place, and that you can effectively restore to meet your RPO

6. **Provider Viability**. Even some of the largest companies can struggle during today's economic climate. Financial, historic, and reference due diligence are strongly recommended

Data and the Cloud

What happens “if” your Cloud solution goes wrong ?

Cloud Contingency Planning

Cloud Contingency Planning

While we hope that your Cloud program is successful, there is always some risk that it might not be. Risks might be from any number of events, but a few to consider are:

- Cloud provider viability
- Unplanned or unforeseen economic impacts
- Technology infrastructure failure (yes, the Web does fail)
- Cloud provider pricing models becoming excessive
- Hitting governor thresholds

So what can you do ?

Plan for risks and develop contingencies. However, your contingencies might need to be somewhat different than that of an internally developed solution:

Departure Planning. Plan for departure from your current Cloud provider. Have a plan in place in case you need to bring the solution in house, or you need to move to another provider. Standards compliance by your provider can play a significant role

Cloud Contingency Planning

Data. Whether your data is in the Cloud or not, it is the life-blood of your enterprise. Treat it as such. Plan for re-acquiring and re-integrating the cloud data back into your enterprise.

Remember that Cloud providers will often use a multi-tenant, shared schema or schemas based upon meta-object models. The internal representation of your data might not be in a form that can be easily re-hosted anywhere else. Plan for this contingency.

When you plan for data backups or exports, consider that you might need to have the data reformatted into an industry standard, SQL model for export. Also ask if your Cloud provider can provide a representative and contextual model, with descriptive metadata for the export.

Security and Compliance Due Diligence. Do not limit your security and compliance review to the initial vendor qualification. Also ensure that you have periodic and follow-up security and compliance reviews.

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The Data Role

The Data Role

It's still data !

It doesn't matter where it is captured, hosted, managed, or displayed – it is still data !

The Data Architect and DBA still have a role to play. A strong recommendation is to embed these roles into your SDLC for Cloud scenarios. There are still many "data" activities to consider:

1. **Metadata and definitions**. Even for a proprietary, SaaS development language and resulting UI, metadata is critical. Data might be sourced from or to this new Cloud application and ensuring a complete understanding of the data is critical

2. **Data Standards**. Ensuring a high degree of data quality and reintegration of the Cloud data back into the enterprise can be simplified by compliance with well-defined enterprise data standards

3. **Information Protection and Controls**. Your enterprise will most likely still be subject to some form of regulatory compliance for PCI and PII data. Ensuring proper controls are in place is also critical.

The Data Role

It's still data !

4.Integration. Some type of data loading and integration (bi-directionally) will be needed. This might include complex architectures and solutions like ETL, CDC, singleton API or Web Service calls. Further complicating integration will be data volumetrics, formatting, protection (encryption over the wire), and governor thresholds.

5.Data Exports and Recovery. The need to consider and address a recovery strategy either internal or at another provider will be important. Complexities might involve the frequency and timeliness of an export/backup, as well as the format and how it can be reloaded or consumed external to the Cloud provider

Data and the Cloud

Your Experience, Recommendations, Questions ?

And…. THANK YOU !!!!

References

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