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Cloud Computing
Risk Management

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Inevitable Evolution?

or another service delivery option?

Cloud computing represents a major shift in information technology architecture, sourcing, and services delivery

Many IT applications and services can be structured and accessed as needed through virtualized architectures, either internally or through service providers

Cloud computing has emerged based on the convergence of Internet technologies and virtualization.

- Abstracted hardware resources
- Consumed as variable expense
- Increased elastic capacity and capability



Different types of cloud computing services are grouped into specific categories: Infrastructure, Platform and Software services

Cloud computing uses several types of delivery model, based on their characteristics and purpose

Cloud computing technology is deployed in different ways, with varying internal or external ownership and technical architectures

Vendor cloud (External)

Cloud computing services from vendors that can be accessed across the Internet or a private network, using one or more data centers, shared among multiple customers, with varying degrees of data privacy control. Sometimes called “public” cloud computing.

Private cloud (Internal)

Computing architectures modeled after vendor clouds, yet built, managed, and used internally by an enterprise; uses a shared services model with variable usage of a common pool of virtualized computing resources. Data is controlled within the enterprise.

Hybrid cloud

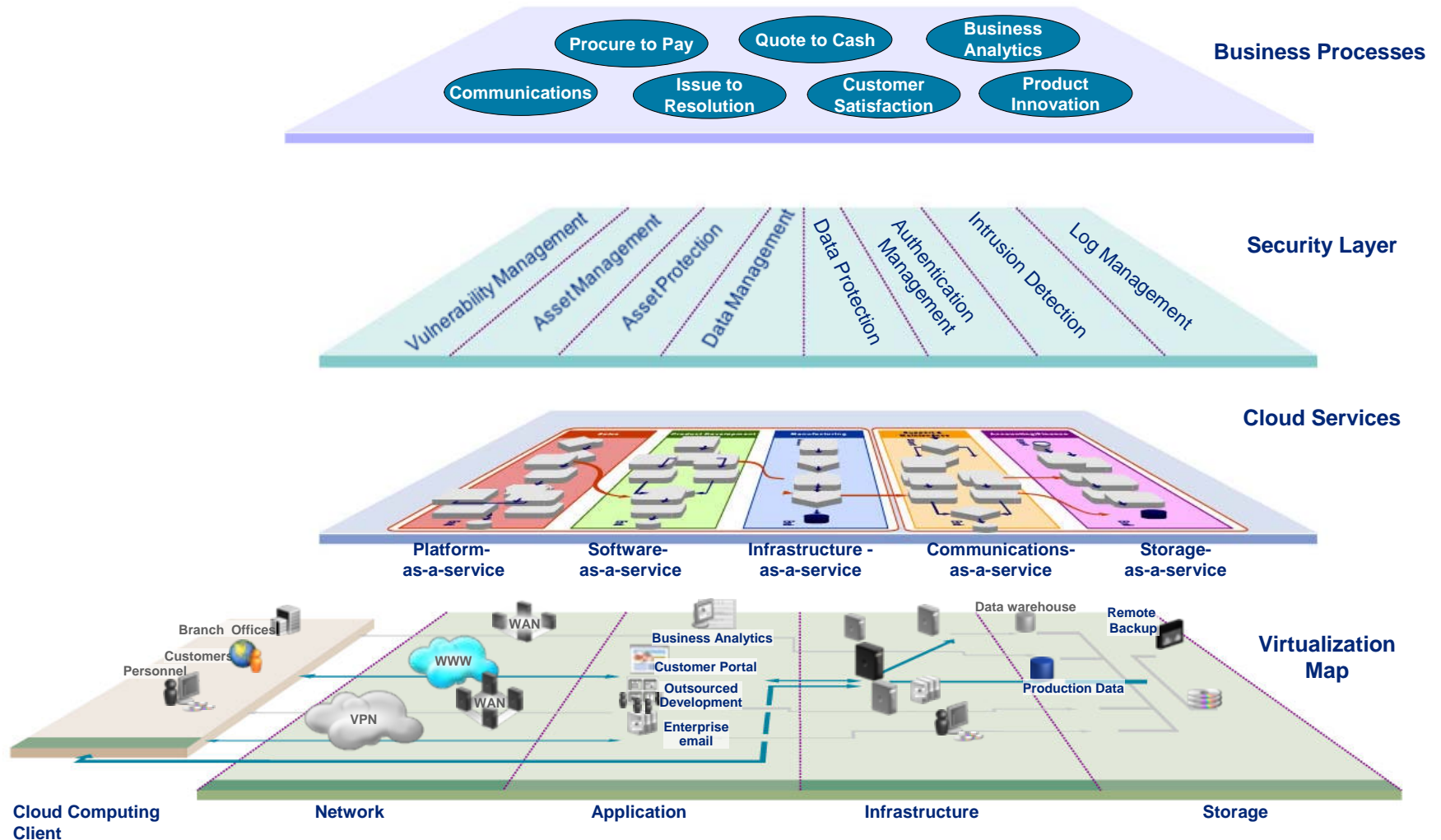
A mix of vendor cloud services, internal cloud computing architectures, and classic IT infrastructure, forming a hybrid model that uses the best-of-breed technologies to meet specific needs.

Community cloud

Community clouds are used across organizations that have similar objectives and concerns, allowing for shared infrastructure and services. Community clouds can be deployed using any of the three methods outlined above, simplifying cross-functional IT governance.

Cloud computing services architectures

Cloud computing architecture includes multiple levels of processes, services, security, and virtualization of computing resources



Pressures to decrease IT costs and increase agility drive enterprise incentives to adopt cloud computing services
Enterprises are concluding that the traditional packaged software model is outdated and are considering cloud computing with other forms of outsourcing

Cloud computing is being driven by need to:

- Reduce amounts of IT capital equipment spending
- Gain flexibility and speed in implementations
- Leverage IT technology evolution

Risks

Key operational and governance issues must be resolved as cloud computing architectures are deployed in the enterprise, requiring new approaches

Data controls and ownership	Who will own the data when subscribing to a cloud computing service.? Is the data you create, use, and store within a cloud yours? Could your data be viewed, accessed, or used without your knowledge; sold to third parties; used for unknown purposes?
Backup, retention, and disposal	Is data retention meeting your policy requirements? Is deleted data "really" gone or still preserved somewhere within the cloud? How are data backups and restores handled?
Availability and reliability	How is reliability, access, and availability "guaranteed" by cloud services providers? Is it through service level agreements?

Risks

Key operational and governance issues must be resolved as cloud computing architectures are deployed in the enterprise, requiring new approaches

Disaster recovery	Is your data protected in the event of a disaster? What are the recovery time objectives and service level agreements?
Legal compliance	Is your cloud provider adhering to laws/regulations for your industry and in every jurisdiction which applies?
Assurance	How will you provide your customers with a level of comfort and assurance on the protection and controls in the cloud environment, especially when involving third parties?
Scalability	Can your service provider support growing demand from all clients and provide reliable services at high scalability? Are there vendors with mature offerings?

Risks

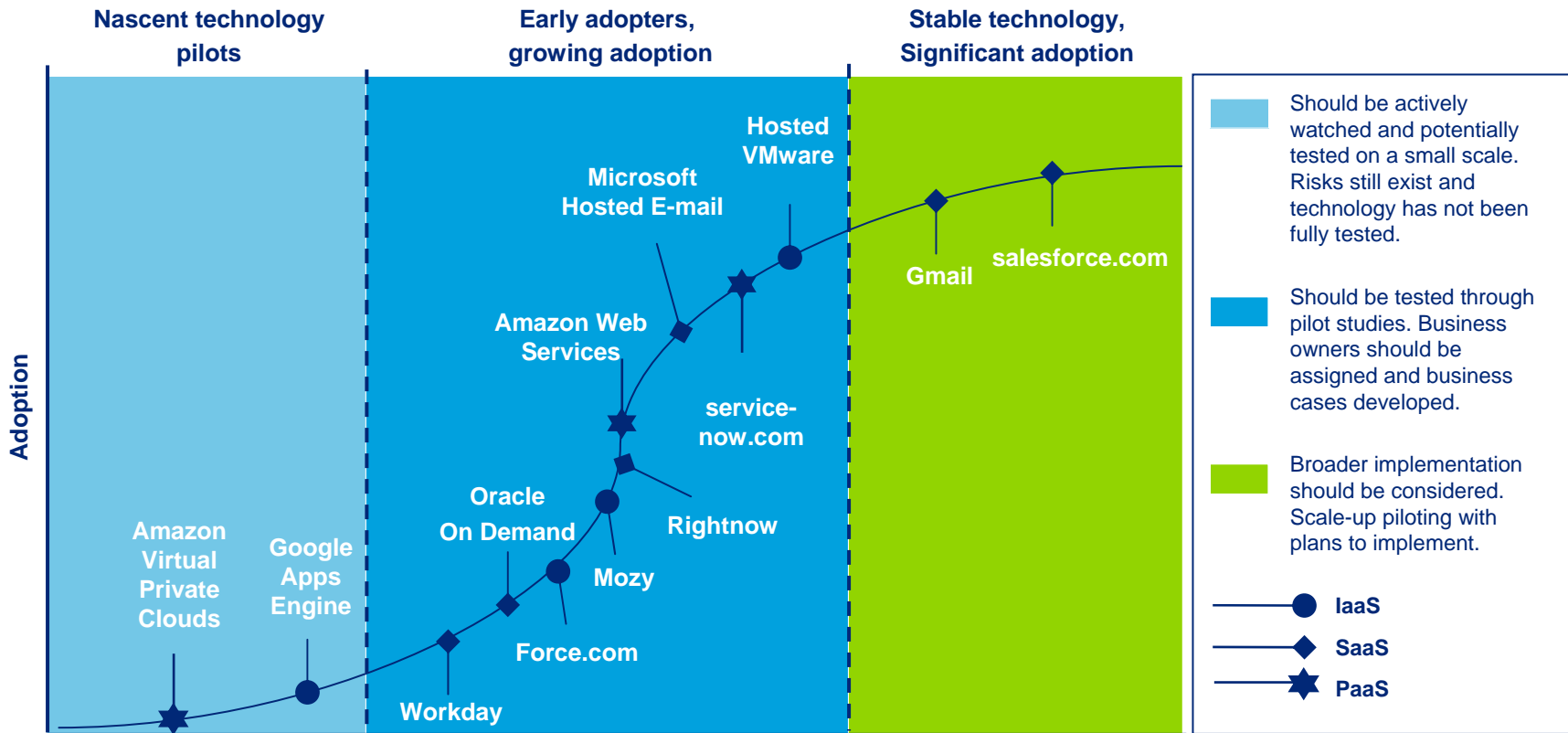
Key operational and governance issues must be resolved as cloud computing architectures are deployed in the enterprise, requiring new approaches

Security and encryption	Is data secure within the cloud environment? How is security enforced and confirmed? What level of encryption is required to enhance security, and how will this impact operational service levels?
Auditing and monitoring	Are you ready to apply enterprise risk management and controls, and auditing and monitoring practices to applications and data residing in cloud environments?
Vendor “lock-in”	What happens if you want to move your data back in house or into another cloud? How open is the existing cloud and what support will the vendor provide?
Tax implications	Is your enterprise ready to adjust tax processes to meet new needs?

Adoption

Considerations include performance, reliability, and resilience

Vendors at various stages of maturity



Sharing Risk?

Security and Compliance: Blankety Blank

What's the missing word?

Cloud computing can reduced burden of security & compliance, pushing the _____ to vendors.

a.risk

b.responsibility

c.authority

d.workload

e.cost

Data Governance

Key Issue: Data governance focusing on enterprise risk helps protect data in cloud computing environments

Data governance in cloud computing is important, as certain types of data must be protected against theft, loss, and misuse

Types of information that must be closely managed when using vendor cloud service providers include:

- Personal information
- Patent or trade secret
- Customer information
- Corporate information
- Medical information
- Financial information
- Other sensitive information

Cloud users must devise effective methods to:

- Discover data to apply the appropriate security controls to it
- Classify data, and understand the importance and sensitivity of the data
- Control data, restrict access to data, prevent misuse of it, and secure it at rest and in transit
- Audit data and its usage; enforce the security controls

No matter what the technology, enterprises need to adequately protect data throughout its life cycle in the enterprise and into the Cloud.

Case Studies:

English University had fallen way behind the curve in both staff and student facing IT systems.

Global Manufacturing Company implementing it's first ERP system.

Questions & Answers

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