Cloud (And Virtualization) Changes Everything!

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Agenda

- Changing The Business Of IT
- The Democratization Of Innovation
- Economies Of Specialization
- The Changing Role Of IT
- The Changing Structure Of IT Operations
- The Perfect Storm
- The Path Forward

Changing The Business Of IT Evolution Of The Application

- Fine grained functional disaggregation
- Separate optimization, deployment, scaling, management etc.
- Business focus on differentiating value/services
- Source others as a service from somewhere else, i.e. the Cloud, pay per use
- Everything is scale out: HPC (Grid), Web Tiers, App Tiers, Hadoop, Databases – Big Table, Cassandra et al.

The Democratization Of Innovation

Idea

- Code
- Upload via Cell Phone
- Pay with Credit Card

Economies Of Specialization

Traditional cost model dominated by people and apps, ~70%

Inability to deliver true economies of scale

- Large application portfolios
- Too much variety types of things, patterns etc.

The Changing Role Of IT

- External Cloud services changing the expectations of IT
 - Variable Cost/Billing CAPEX -> OPEX
 - Flexibility/Agility
 - Self Service
- Option to use external providers has destroyed the status quo between IT and the business
- True differentiation of IT organization is its intimacy with its own business and how to map it onto IT infrastructure



The Changing Role Of IT

It's all about...

- Services
- QoS
- Agility
- •\$



The Changing Structure Of IT Operations

Virtualization + Tooling is reshaping operations



The Changing Structure Of IT Operations Server Virtualization

- Efficiency and flexibility *plus* encapsulation of application, with required OS version, patches, libraries etc.
- Fixes long term provisioning, life cycle management issue
- Drives service centricity and alignment with business or organizational goals

The Changing Structure Of IT Operations Virtualization – More Opportunities

- Dynamic movement of VM images (in effect application instances)
 - Balancing workloads
 - Seamless upgrades to bigger VMs
 - High availability
- Fault tolerance
- Disaster recovery

Layers Of Complexity

Biz Processes/- Services	Payment Service	Trading Service	ERP Service	Mail Service	
Virtualized Platform	Database Clusters ^A	Aggregations	Web Server Farms	Clusters	Federations
Platform	Database	W \P	eb Server Applicatio	Message Bus on Server	
Virtualized Operating System	Distributed File Systems	1	Solaris Containers BSD Jails etc	-	Virtual IP in Clusters & Load Balancers
Operating System	File Systems	1	Operating Systems		IP, TCP, UDP etc.
Virtualized Physical	LUNs Volumes		Virtual Machines Hypervisors		VLANs Virtual Switches etc.
Physical	Disks, Controllers, SAN Switches Storage		lardware Partitions ervers, Blades, etc Compute		Switches, Routers, etc Network
	Proprietary				

The Big Problem



The Changing Structure Of IT Operations Simple Management

- Simplified management by hiding complexity
- Unintended consequences...

The Changing Structure Of IT Operations

Associated Tooling

- Shared virtualization and tooling inside the enterprise and out, i.e. private and public clouds = hybrid clouds
- Enables seamless movement of workload on and off premises
 - To manage cost
 - To cope with bursts
 - To be near data or other services
- Same management tools = zero friction
- Ultimate choice for the enterprise

The Perfect Storm

- Continued disaggregation of applications/biz processes
- Economies of scale and specialization
- Maturing and trusted virtualization technologies
- Infrastructure becoming de-facto homogeneous, flexible, virtualized resource fabric
- Compelling functionality and economics driving positive feedback loop
- Application encapsulation
- Converged management
- Impact of providers of biz expectations

The Path Forward

IT – Focus on its own differentiating value

- Its about mapping the business onto technology
- Don't be afraid!
- Implementation may be internal, but might not be for some things
- Place virtualization at the heart of the datacenter
 - Efficiency and set up for Agility
- Embrace integrated management/automation
 - Change processes
 - Adopt and use the tools
 - Get agility, availability, etc...

Thank You!

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