ITIL in the Cloud

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Loose Agenda

- Is there a place for ITSM best practice with cloud computing?
- What are the new challenges?
- How should we adapt ITIL to be used in clouds?
- Benefits and risks of services and cloud computing

The Market is Buzzing

"IT Departments are likely to follow same path with Virtualisation as they did with SANs and IP networks; deploying a technically elegant solution without the right management tools …they've just sent themselves over a cliff at 60mph instead of 30mph"
Glasshouse Technologies

"Virtualization and Cloud Computing - The Death of ITIL or the Opportunity of a Lifetime?" **CA**

"ITIL vs. The Cloud: Pick one" **CIO.com**

"Every Cloud has a silver bullet to kill the dreaded ITIL…If ITIL doesn't evolve then yes, ITIL will loose relevance"
IT Skeptic.com

"Within 5 years, one out of five companies will have 100% Cloud-based IT infrastructures"
Gartner

"I don't see how you can do this [Cloud] without ITIL and Service Management" **Deloitte**

Basic definitions

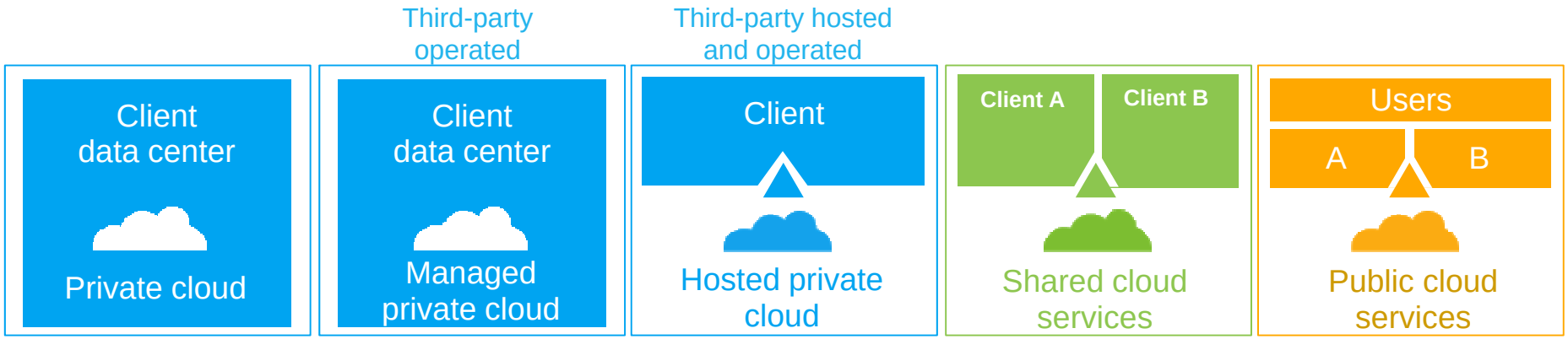
- Private Cloud – Service managed internally over intranet or over the internet
  - greater control but may not deliver the costs savings and ability to scale up or down
- Public Cloud – Service managed externally over internet, usually serving the needs of multiple customers
  - Cost saving but difficult to have multiple service levels
  - There may be difficulties verifying the security and compliance requirements to meet, for example data privacy laws
- Hybrid Cloud – Service managed internally and externally, combination of using a public and private cloud

Deployment options for cloud computing

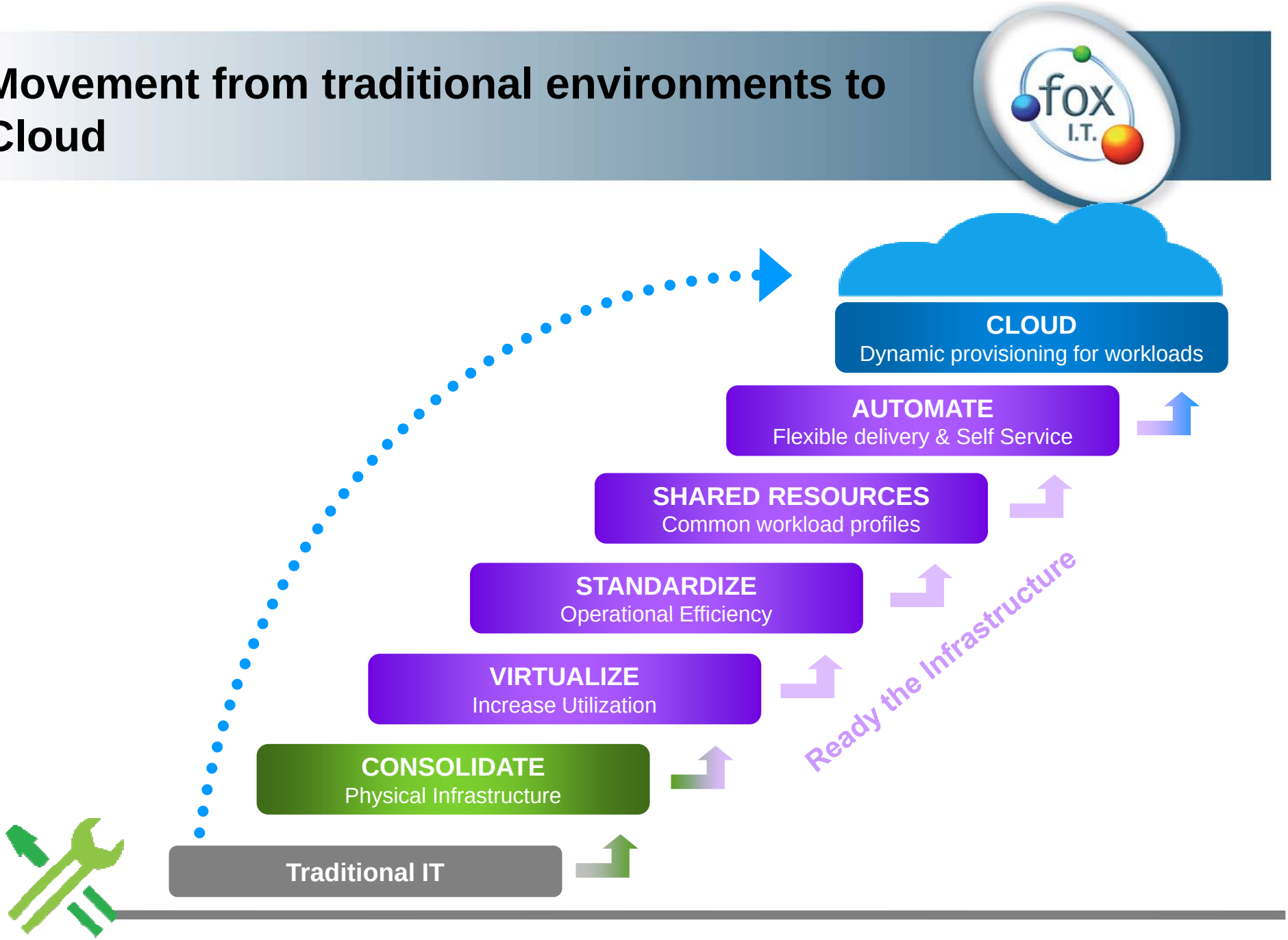
Internal/Private
IT capabilities are provided "as a service," over an intranet, within the client and behind the firewall

Hybrid
Internal and external service delivery methods are integrated

Public
IT activities / functions are provided "as a service," over the Internet



Movement from traditional environments to Cloud



Types of Cloud Services

- SAAS – Software as a Service, this type of service is an application that users access to provide a service which can be hosted internally or externally
  - Example Salesforce.com and several ITSM tools
- IAAS – Infrastructure as a Service
  - Example Amazon Elastic Cloud (EC2) - Customers rent computers or virtual instances to run their own applications and pay hourly charges per virtual machine or a data transfer charge
- PAAS – Platform as a Service must provide a development language and must be able to deploy, manage, test and maintain the developed applications
  - Example Microsoft Azure defined as an internet-scale cloud services platform hosted in Microsoft data centres which provide an operating system and a set of developer services

Potential benefits

- Cost savings
- Speed to market
- Rapid provisioning of services, capabilities and resources to support business and IT transformation and change
- Easier implementation of a new or enhanced business application
- Better global coverage
- Access to specialised services
- Less administration overheads

Important considerations

- **Determine what you want to achieve and why**
  - IT is about delivering improved business services, so make sure you understand what you want to achieve as an organisation and why. Both public and private cloud options should be thoroughly reviewed alongside non-cloud alternatives with the benefits and drawbacks of each being given fair consideration
- **Understand your business drivers as well as the IT drivers**
  - It is essential that any changes made to IT infrastructure are suited to the needs of the business first rather than being modified to fit the IT department's preferred cloud platform
- **Fail to prepare, prepare to fail**
  - It might seem obvious, but make sure you plan thoroughly and decide how your chosen cloud solution is going to be integrated, managed and monitored.

Different Charging Method

- The "pay-as-you-go" nature of cloud computing breaks the link between component and service performance: typically, organizations pay for capacity or throughput, rather than specific components
- The highly dynamic nature of the computing infrastructure that exists in the cloud makes traditional CMDB difficult or virtually impossible to implement for all components
- Since there is no way to predict which cloud computing infrastructure components are accessible at any point in time, service delivery processes in the enterprise - and SLAs from cloud computing service providers need to be concerned with service reliability rather than component reliability

Deployment

- Deployment will be more successful if you have a relative high level of maturity in your existing processes
- Cloud Computing offers more options, more flexibility, more opportunities for efficiency and automation – but automating chaos will only give you one thing: **automated chaos**.
- ITSM frameworks like ITIL and COBIT are crucial to the cloud's chances of success

ITSM and ITIL

- The aim of service management is to make services available to the customer at acceptable levels of quality, cost and risks
- Organizations that use best practices for service management will be confident about designing and delivering solutions that support new business and IT strategies without the risk of downtime, unpredicted cost and increased risk
- ITIL provides proven best practices and service models that can help organizations to adapt to cloud computing solutions accordingly
- Many of the ITIL strategies, delivery models and service models are relevant to cloud computing – examples being shared services, utility computing, web services and mobile commerce

Opportunities & Risks

Service Options

- Companies use IT to engage directly with a huge variety of customers and individual consumers
- There is no pre-defined standard service, rather a range of service options that can be combined in any number of service packages – probably driven by the consumer directly
  - For example, consumers log onto a website, and create an account. They create profiles and select the combination of services that suits their particular needs

Service Level Packages

- In the case of cloud computing the customer is able to pick and choose their own combinations of services and service levels, so in effect are choosing their own packages and Service Level Package
- Example –
  - A cloud service provider offers a range of core service packages. Each core service package is offered at 3 levels of service, at 3 different price levels. Customers will choose which core services they will use, and at what level. In this way they will choose multiple services and service packages to create their own service package, consisting of 3 service level packages

Service Level Agreement (SLA)

- In the event of a business-critical application going down, you need to be reassured that your cloud provider has the expertise and skills to get it up-and-running again as quickly as possible
- Ensure that your provider offers SLAs that are appropriate for your business needs which cover all foreseeable eventualities
- Do not commit mission-critical services to the cloud without negotiating appropriate SLAs

Service Strategy

- New technologies and practices in the industry may make it possible for the organization to stretch the boundaries of its existing strategy
  - Cloud solutions make it possible for the business to change its positioning, rework its service portfolio and reach new customers. In this way the IT strategy helps to mould the business strategy, even while being moulded by the business strategy

Service Strategy Cont.

- Cloud computing will not change the strategic objectives or the market spaces of a service; it provides new avenues to reach those objectives
- The nature of cloud computing may require changes in how services are charged, and how IT organizations allocate cloud services costs
- Cloud computing forces IT to look at the services they deliver, and how these are bundled to add value for varying stakeholders
- A service portfolio must be augmented to include cloud services being provided, what level of investment is being made in these services, how they are being sourced, bundled, and providing value to the business

Some Issues During Service Design

- What are the real cost savings?
- Is the web application easy to use? Does this result in doing more work with less people?
- Do you understand the risk?
- Have agreements and contracts been reviewed before making decisions?
- How easy and what does it cost to change the number of users?
- What information security is provided? How is data stored and who can access it? What controls are there to ensure that data is only accessed by authorized personnel? Can the supplier provide an audit trail for data access?

Service Design Cont

- Design the cloud computing solution to provide maximum benefits to the business instead of treating it solely as technology innovation
- Cloud computing requires a renewed effort in supplier management processes and contracting rigor to ensure meeting terms, conditions, and target of agreements
- Selecting the correct tools to support a well-defined service design program can dramatically improve the maturity level of your cloud services capability

Service Design Cont

- Not all servers deliver the same capacity
- Even in the cloud you need to control hardware purchases and plan network resources
- You must monitor performance – for example
  - Percent uptime
  - maximum security – there is a leap of faith on security when handing over information
- You must ensure the cloud provider can prove it has met its obligations

Service Transition

- Organizations that are implementing cloud architectures must consider the impact on Service Transition
- These environments can be very dynamic, often requiring the rapid provisioning of virtual servers to support changing workloads
- Moving a virtual server from a physical server can lead to both difficulties and opportunities in implementing effective service transition processes
- Cloud architecture may require the creation of new CI types and change models to properly balance agility and risk management
- Change and Release and Deployment processes must be designed to work seamlessly across both physical and virtual servers

Service Operation

- Monitoring for security compliance, privacy and access, reliability, and availability of IT services and components pose increased challenges when services are hosted in vendor clouds
- As you refine your, and integrate, cloud delivery with your overall service management capability, look to improve operations through automation

Service Operation

- Problem Management
  - IT Service Providers and Cloud Service Providers must work together to make sure they plan how to work out data exchanges and plan how they work together
- Incident Management
  - Outages and faults will happen so roles and responsibilities need to be clearly defined as well as escalation procedures
  - Even more important when multiple providers

Continual Service Improvement

- The melding of cloud centric approaches with CSI by IT can dramatically speed up realignment and improvement processes by providing a vastly wider array of potential options to solve complex business problems and improve services
- The nature of cloud computing may lead to challenges for CSI such as misalignment between business needs and technical solution
- Establishing KPIs and SLAs with cloud vendors helps communicate the expectation

Summary

- IT is devolving into a network of services that can be provided from anywhere – aided and abetted by advancements in cloud computing technology.
- The service mindset that ITIL brings is key to operating in a cloud world – the disciplines still exist but may have shifted emphasis from the IT organization to the cloud vendor.
- Continuing to operate as bundles of technologies and capabilities might lead to serious operational risk.
- The ITIL service lifecycle supporting its processes can be leveraged as a design, build, deploy and operate vehicle for constructing cloud-based solutions

Summary

- Having a capability to abstract this value chain in the form of services is critical to the future success of IT and its mission of delivering business value
- Alternatively, the lack of a service approach will expose the business to unnecessary complexities with no accountability for the end services being delivered
- Operating in this way as bundles of technologies and capabilities poses serious risks for any IT organization migrating to cloud solutions
- Core IT management disciplines have not changed – just shifted from the IT organization to the cloud service provider, and ITIL is well positioned to help. Nearly all the ITIL disciplines can be used when leveraging service delivered via the

Summary

- Do not simply think about the technology but also all of the ITSM areas and the softer people side of the equation

Any Questions