



Computer Measurement Group

Optimizing Performance and Capacity in Private and Hybrid Clouds

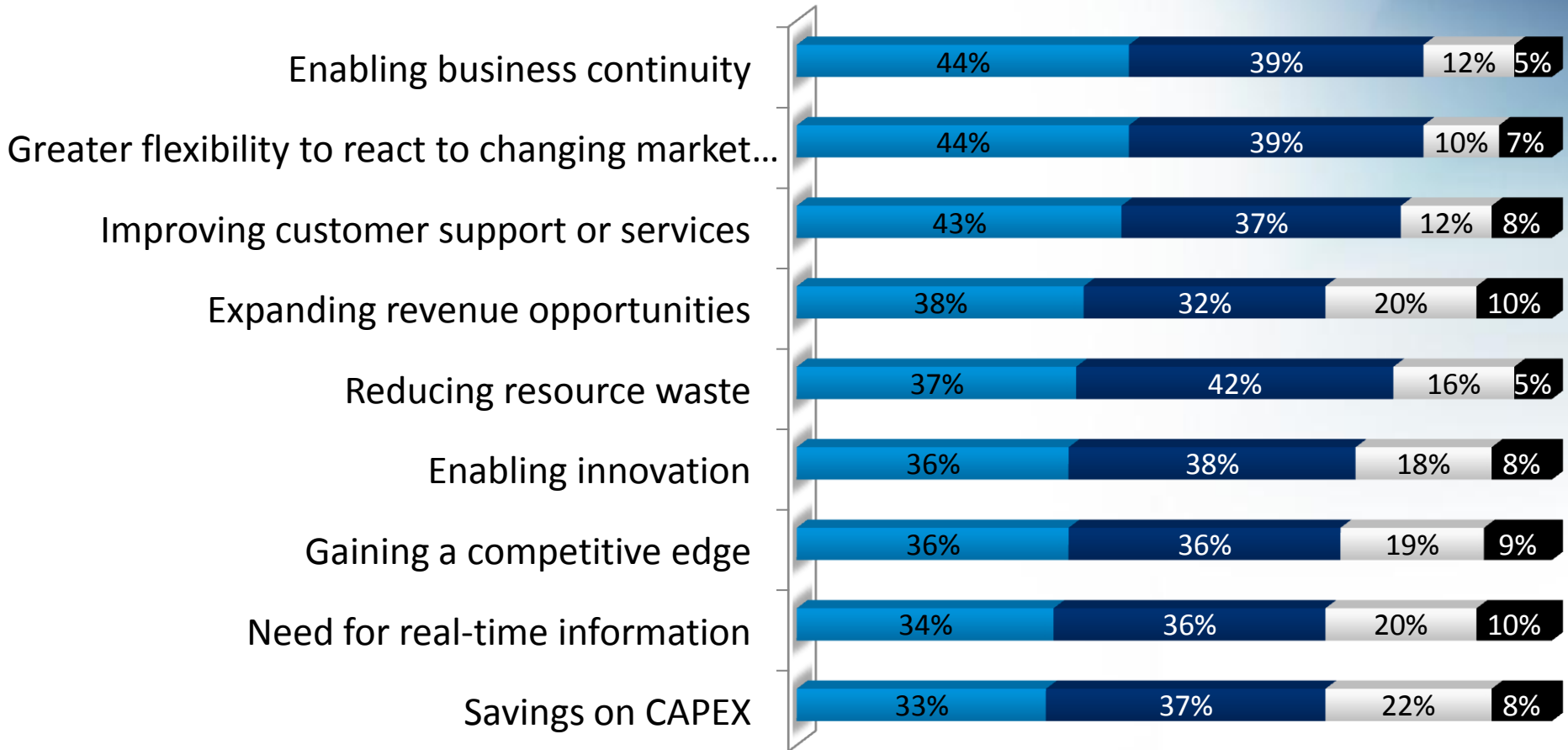
Russell Rothstein & Eva Tuczai
OpTier

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Agenda

- **Goals of cloud deployment**
- **The challenge: maintaining visibility in the cloud**
- **Best practices for optimizing performance and capacity**
 - Identify the right candidates for migration
 - Monitor SLAs and user experience in real time
 - Discover the causes of performance problems
 - Align capacity utilization with business priorities
 - Prevent overprovisioning
- **Summary: Ensuring the ROI of the cloud**

Business Drivers of Cloud Computing



■ Very Important
 ■ Somewhat Important
 ■ Not Very Important
 ■ Not at all Important

Source: 2011 CIO Cloud Survey, IDG Research, November 2010.



Business & IT Shift to Cloud – Growing Complexity

Business

Improve Agility

Reduce Cost

Minimize Risk

Protect Experience

BU1

BU2

BU3

BU4

BU5

BU6

BU7

IT Delivery Model

Enterprise domain

Applications

Online Banking

Core Banking

Online Accounts

Loans & Savings

Credit Card Services

Operations

Web

App

DB

- Even before the cloud, architectures are complex and difficult to monitor

IT

Business & IT Shift to Shared Service Environment

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Web

Shared Middleware Service

DB

Virtualized Server Farm

- The increasing use of shared services increased the challenge of understanding application performance

IT

Business & IT Shift to Cloud – Private/Public Hybrid

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Shared Middleware Service

Virtualized Server Farm

Private

IAAS Cloud

Hybrid

Public Cloud

• Today's migration to private and hybrid clouds can lead to a total loss of visibility and insight into application performance

Manage Change

IT

Maintain Visibility and Control

Reduce Complexity

Increase Automation

Ensure Security and privacy

Top CIO concerns of private clouds



Source: IDC Cloud Computing Update 2010



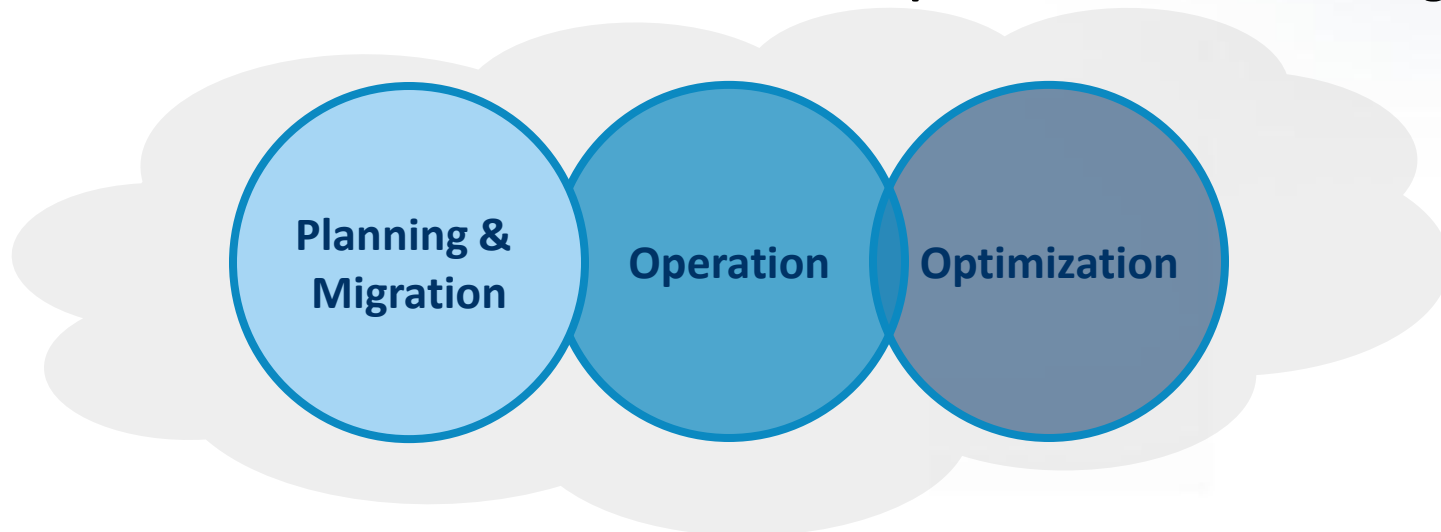
Best Practices for the Cloud

How to Optimize Performance and Availability

Will it work in the cloud?

How can you tell which parts of which applications are suitable for cloud, and plan a successful migration?

- **Identify potential problems such as chattiness and latency**
- **Create a performance baseline**
- **Get a clear picture of service dependencies and infrastructure usage**
- **Create a checklist that will ensure a complete and successful migration**



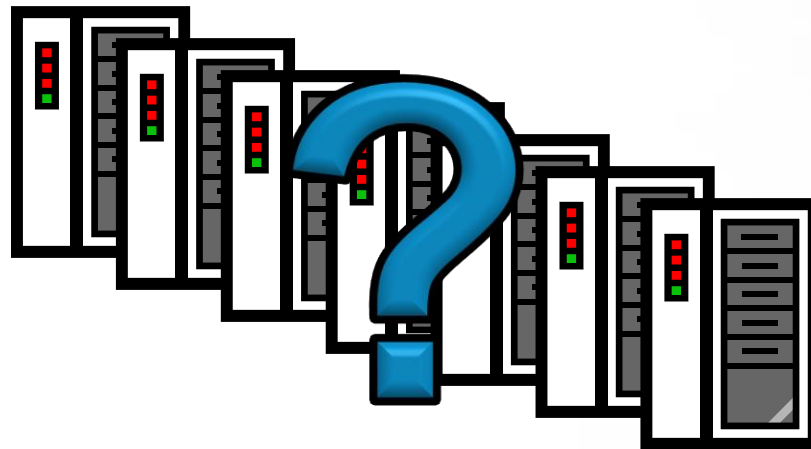
Indicators of Cloud Readiness

- **Application Bandwidth Cost**
- **Application Complexity**
- **CPU Usage**
- **Volume and Resource Volatility**
- **J2EE Dependencies**
- **Apdex Scores**
- **SLA Compliance**

Optimize Transaction Performance

If you don't know which physical servers your application is running on, how do you monitor performance in a business context?

- **Can't use infrastructure metrics to diagnose performance issues**
- **Silo-centric metrics don't show service-centric performance**
- **Need a real-time topological map of service delivery across all tiers**



Monitor SLAs and User Experience

How can you monitor the experience of your end users in a hybrid cloud?

- ▶ Both real-user monitoring and synthetic transaction monitoring
- ▶ Need cloud-ready deployment architectures based in the cloud or in the application client



OR

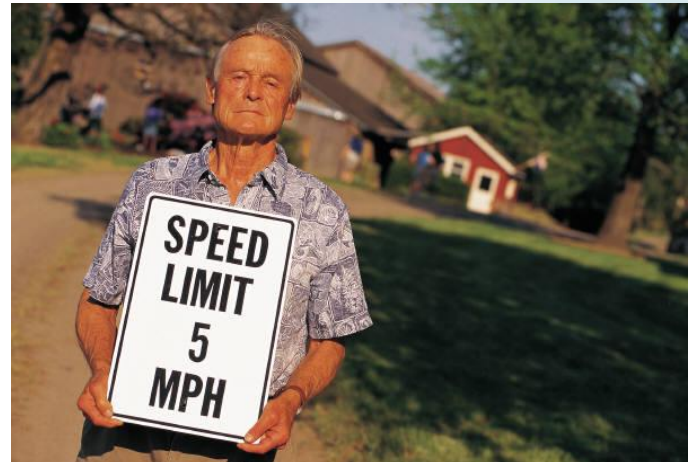


Uncover the Source of Problems

How can you maintain a real-time up-to-date view of how each service flows through the cloud and identify the source of problems?

In the cloud, you need:

- A dynamic picture of service dependencies
- Complete top down visibility across the infrastructure
- Automatic, continuous transaction discovery technology



Optimize Resource Utilization

How can you right-size capacity and prevent over-provisioning that undercuts the ROI benefits of the cloud?

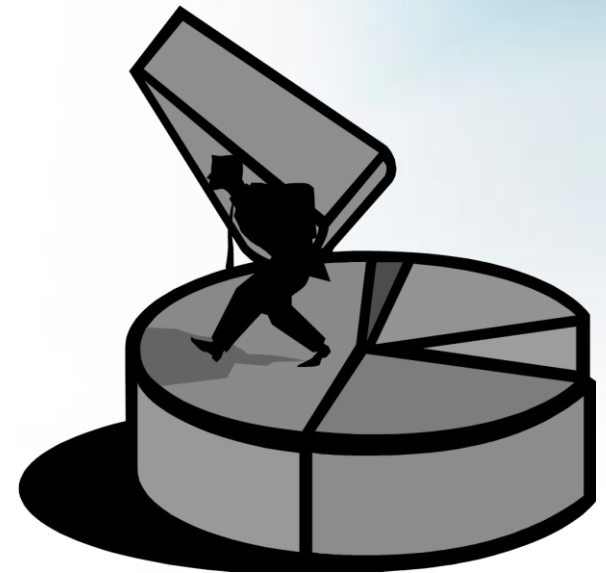
- **Get an accurate picture of resource usage for each service**
- **Measure how the allocation is related to SLA compliance**
- **Prioritize the allocation of resources**
- **Plan future capacity accurately with consumption metrics**



Align Consumption with Business Priorities

How do you ensure that services are allocated according to business priority?

- ▶ You must prioritize the allocation of resources
- ▶ Need a clear picture of resource consumption at the transaction level
- ▶ Need business intelligence about the impact of each infrastructure tier



Summary: ROI throughout the Cloud Lifecycle

Business

Improve Agility

Reduce Cost

Minimize Risk

Protect Experience

Enterprise/cloud provider

Planning & Migration

Operation

Optimization

Manage Change

IT

Maintain Visibility and Control

Reduce Complexity

Increase Automation

Ensure Security and Compliance

Thank You

OpTier at a Glance

Mission: Enable enterprises to manage their mission critical, automated business services in Dynamic Environments

- **The de facto leader in Business Transaction Management**
- **Proven Value in Shared Services, Private Cloud Projects**
- **Funded by leading VCs, Cisco and Morgan Stanley**
- **Growing business, 200+ employees**

