

Business Strategy and Innovation: Cloud Computing is Elevating the Role of IT Mainframes

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1. THE MARKET

Mainframe Platform Drivers

- Business Growth
- Hardware Evolution
- Mainframe Virtues



2. THE CHALLENGES

Control Costs

- Do More...
- "...with less"
- "...with nothing"

Sustain Critical Skills

- Build next generation team dynamically
- On ramp for next gen is long and complex

Increase Agility

- Provision services faster
- Multiplatform data center
- Solve critical issues

4. THE PROGRAMS

Promises Made

Maximize Value

Simplify Management

Practical Innovation

1

2

3

Promises Kept

MVP

Mainframe Software Manager

CA Compliance Manager for z/OS Enterprise APM

3. THE STRATEGY

Maximize Value

Simplify Management

Practical Innovation

Best in Class Quality, Support, and Customer Experience

what is cloud computing

Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model promotes availability and is composed of five essential characteristics (On-demand self-service, Broad network access, Resource pooling, Rapid elasticity, Measured Service); three service models (Cloud Software as a Service (SaaS), Cloud Platform as a Service (PaaS), Cloud Infrastructure as a Service (IaaS)); and, four deployment models (Private cloud, Community cloud, Public cloud, Hybrid cloud). Key enabling technologies include: (1) fast wide-area networks, (2) powerful, inexpensive server computers, and (3) high-performance virtualization for commodity hardware.

Source: National Institute of Standards and Technology

mainframe is important



85%

Source: CA customer surveys

the three Cs of the cloud

C-level executive focus on key qualities

Cost

Hardware/Software:

- Cloud computing delivers the same capability, with the same availability, reliability and other QoS *at less cost than traditional delivery of IT services*
- Cloud computing capability is priced in a *pay as you go* model
- There is a clear mapping of value back to cost

Cost

OPEX:

- Cloud computing reduces need for highly skilled (*expensive*) FTEs for managing infrastructure
- Allows the company to focus on their areas of expertise, delegating some workload to a provider who is expert at delivering that service

Cost

Agility, Competitiveness:

- Cloud computing enables a customer to rapidly add/delete capacity (elasticity)
- Cloud providers are focused on rapid deployment
- Reduces the “lost opportunity cost” in an “ossified datacenter”

what's so important about the advent of cloud?

Traditional IT

- Pay for hardware
- Pay for software
- Pay for services
- Pay for people
- Pay for systems management, security, and maintenance

Cloud based offerings

- Pay for the *result*



Cloud changes the economic game:

Which model do you think is more attractive to your management?

mainframe is essential



73% 79%

Source: CA customer surveys

cloud or clouds...?

Public / Community

- Available to the general public or a group of customers

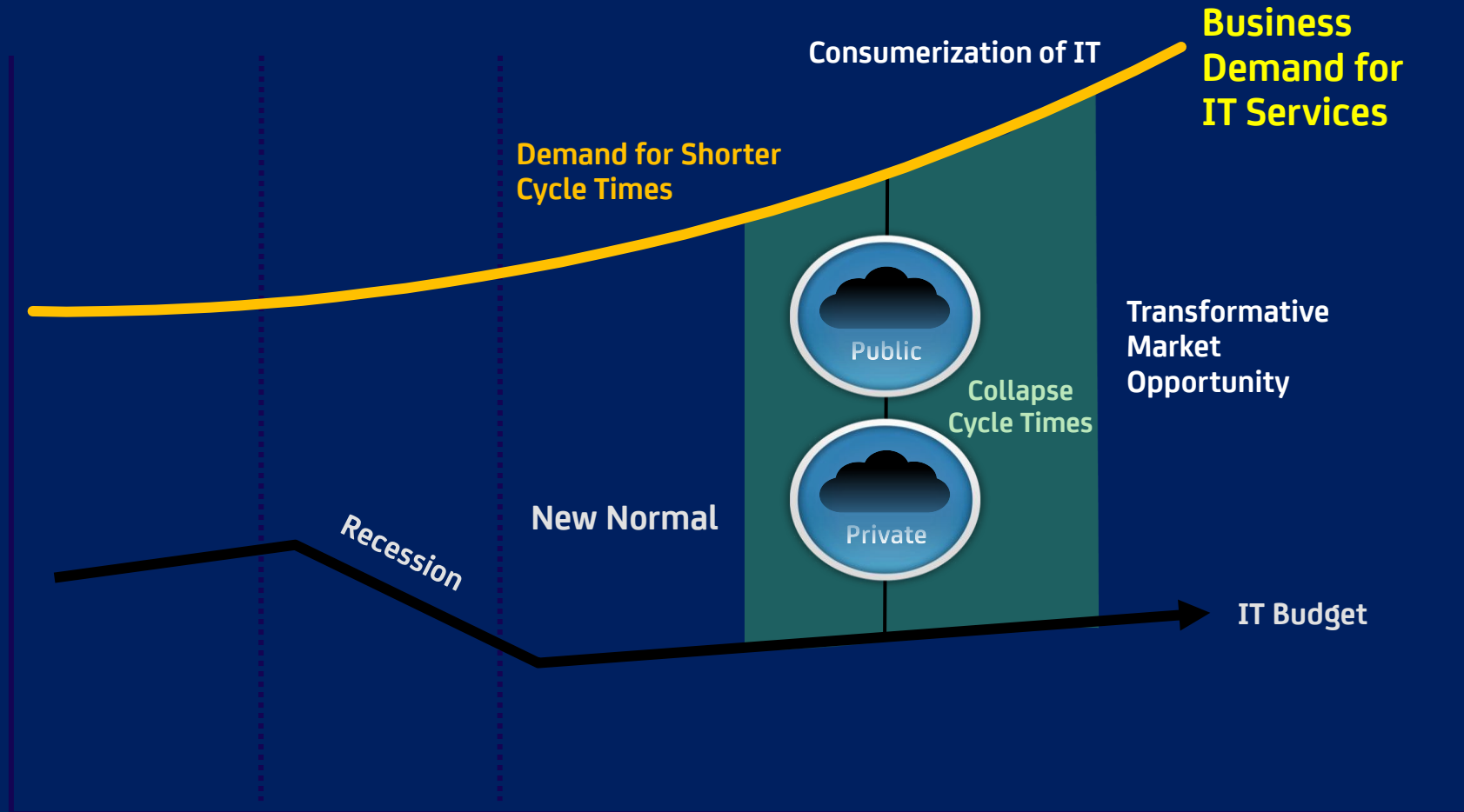
Private

- Infrastructure for a single organization

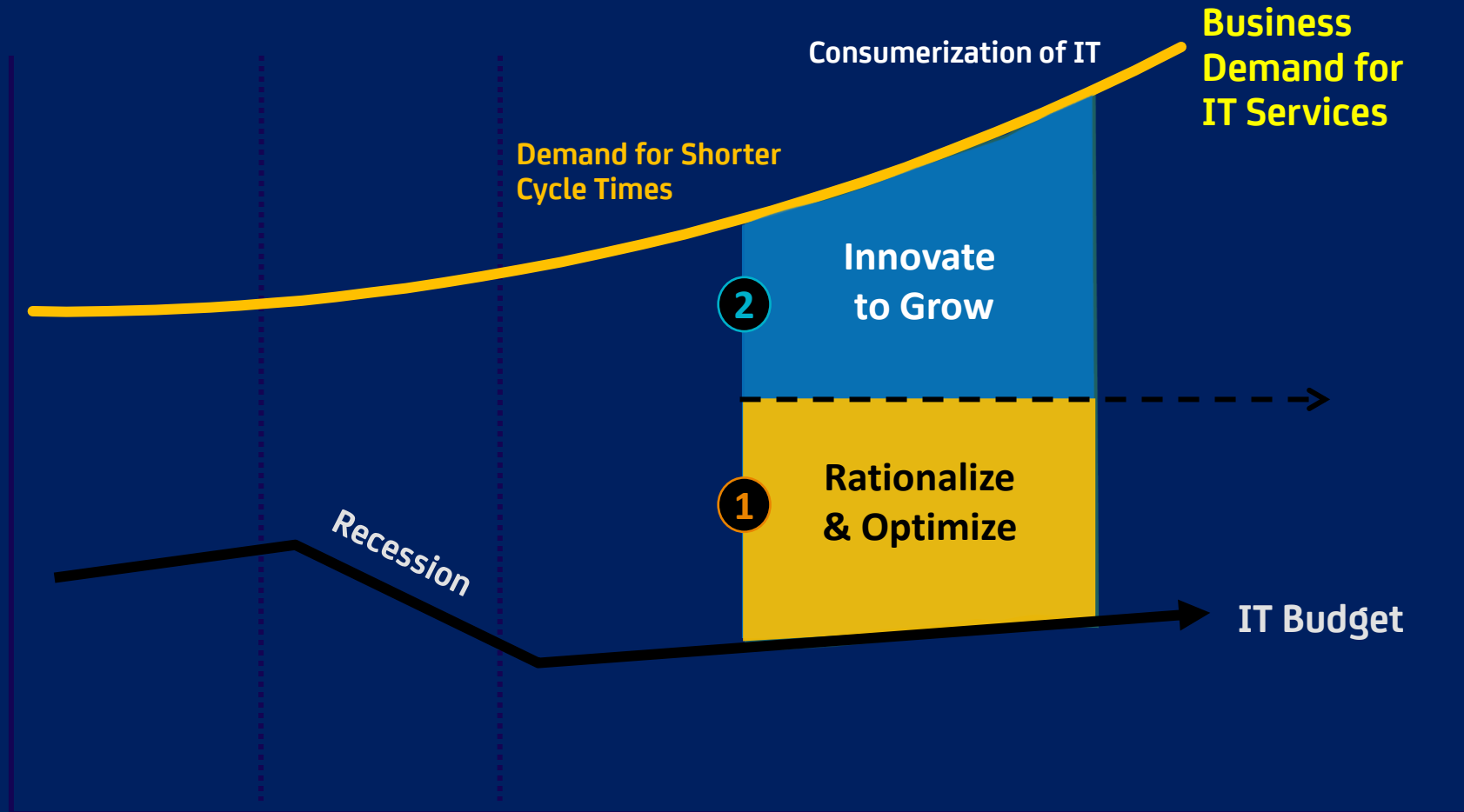
Hybrid

- Binds together 2 or more private and community clouds

CIO living with a “new normal,” but enterprise IT needs a game changer



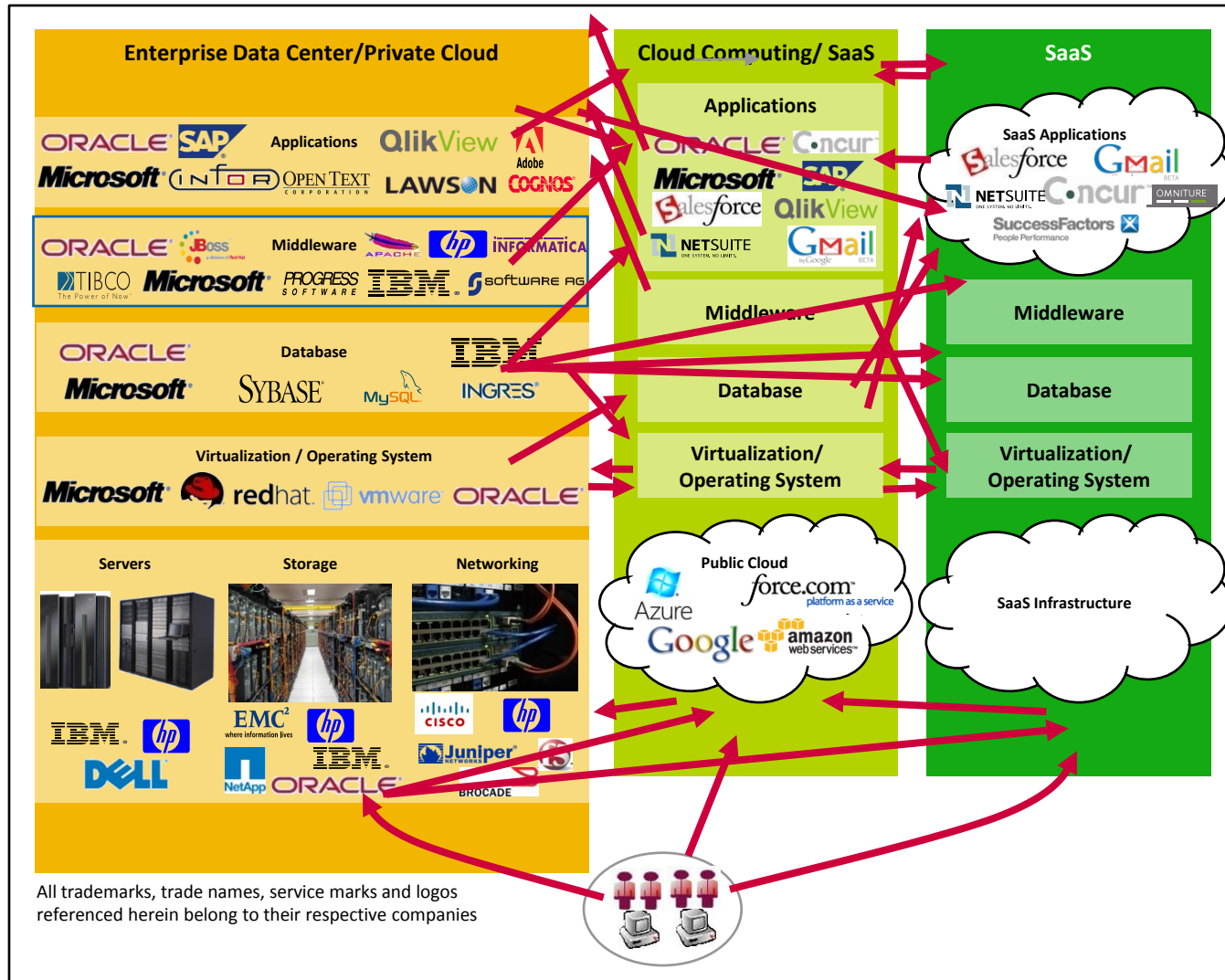
Business demand for IT services drives CIO priorities: Rationalize, optimize and innovate to grow



additional complexity is created by the cloud, but the concerns remain the same

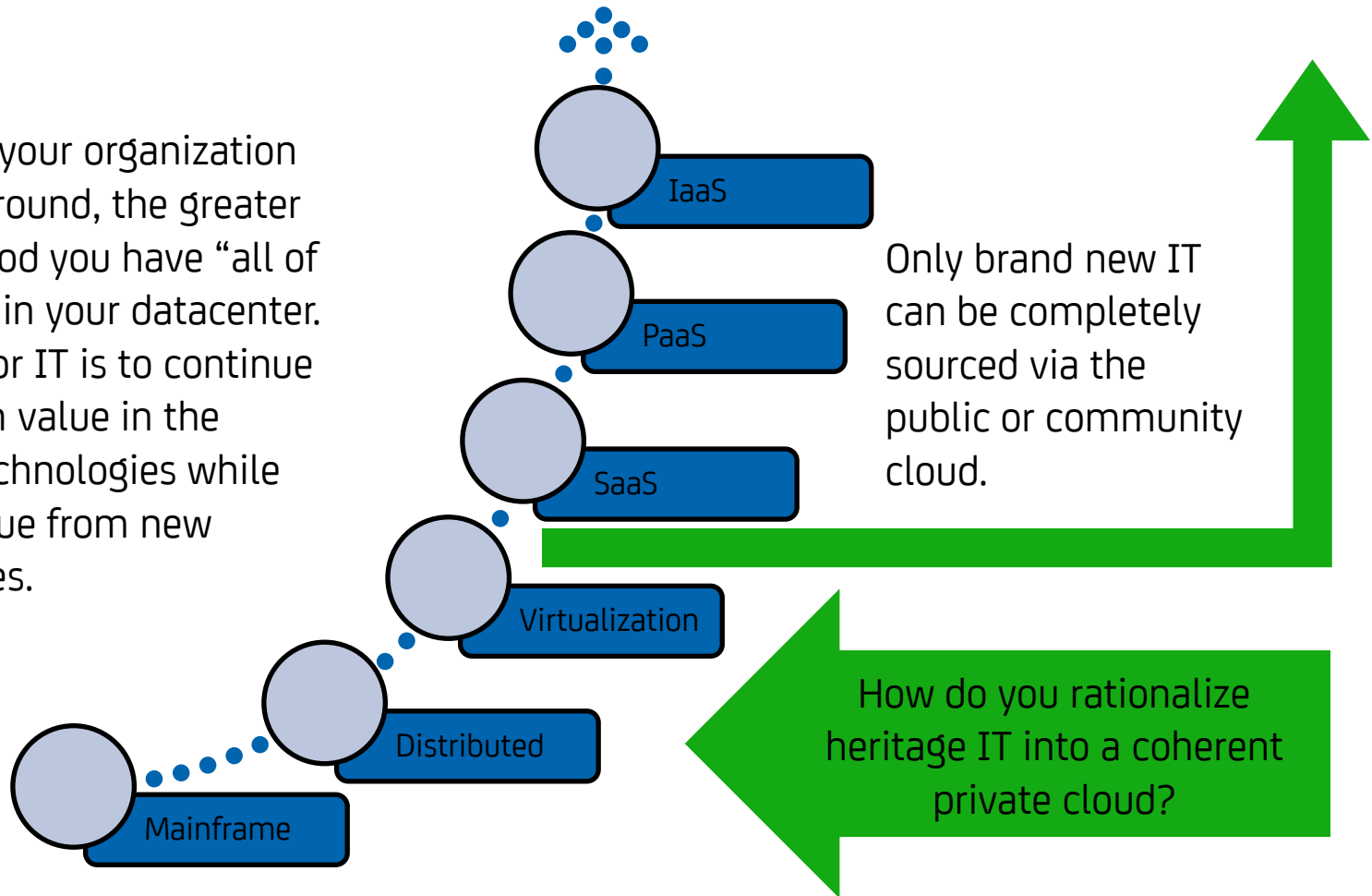
Top 5 challenges of cloud computing

- Management of hybrid world
- Performance monitoring
- Reliability/service assurance
- Automating service delivery across platforms
- Security



IT maturity influences how you will engage with the cloud

The longer your organization has been around, the greater the likelihood you have “all of the above” in your datacenter. The issue for IT is to continue to maintain value in the heritage technologies while gaining value from new technologies.



Only brand new IT can be completely sourced via the public or community cloud.

How do you rationalize heritage IT into a coherent private cloud?

the important first step

IT must partner with the business to shift from delivering ***diverse technologies*** (that shine through to your internal and external customers) to collaborate on the production of ***business services*** that have specifiable and measureable performance criteria (or qualities of service), for example:

- Speed/transaction rate
- Availability/uptime/SLA
- Cost per unit of service delivered
- Recoverability, RPO, RTO
- Adherence to regulations

QoS – how much and at what cost?



QoS – how much and at what cost?



QoS – how much and at what cost?



QoS – how much and at what cost?

- **Not all business services are created equal**
- **QoS requirements should be tied to the business service being delivered and that decision should influence the underlying infrastructure**

Platinum

Gold

Silver

Wood

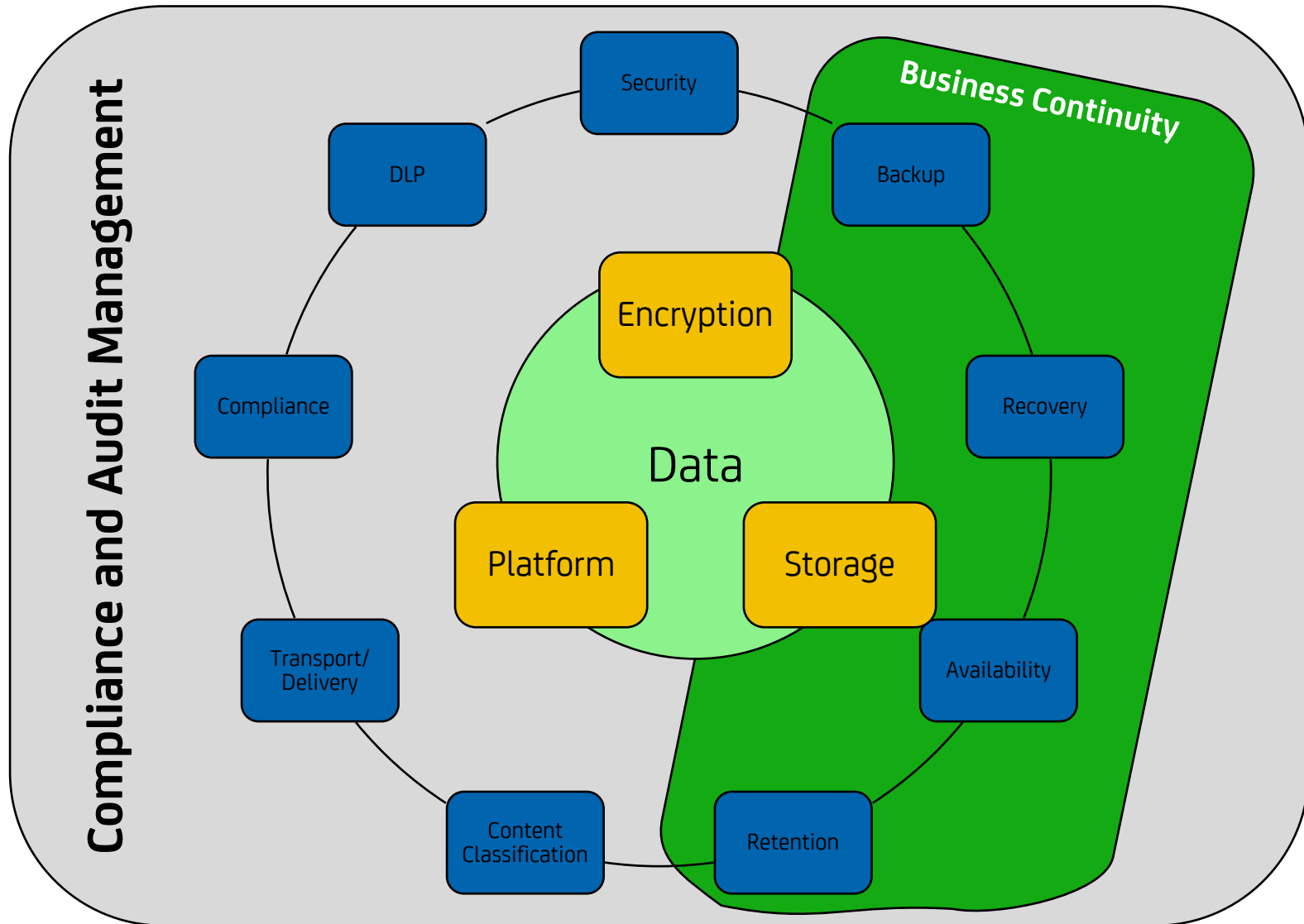
what services should run where...?

- Decision criteria
 - Can you model your price-performance?
 - Can you model your technical performance?
 - What is your current SLA?
 - What is the SLA you need?
 - How can you manage performance relative to the SLA?
 - What are the regulatory issues?

what is most core and critical asset your business can least afford to lose?



it's the data, stupid...



it's the data, stupid...

- How do you maintain DR readiness/availability
 - Who owns the data? How are security/integrity maintained?
 - How fast do you need to recover data?
 - Where is the data physically located? What platforms are involved? Is encryption required at rest? In flight?
 - How do you keep up with ever changing regulations?
-
- What elements of your core data can be stored/transmitted into the cloud?



everything old is new again...

Cloud Service Providers operate on a similar sales model as the “departmental server” providers did 20 years ago

Bypass your traditional IT department and get to Nirvana

- Reduce costs
- Improve QoS
- Gain superior flexibility and control

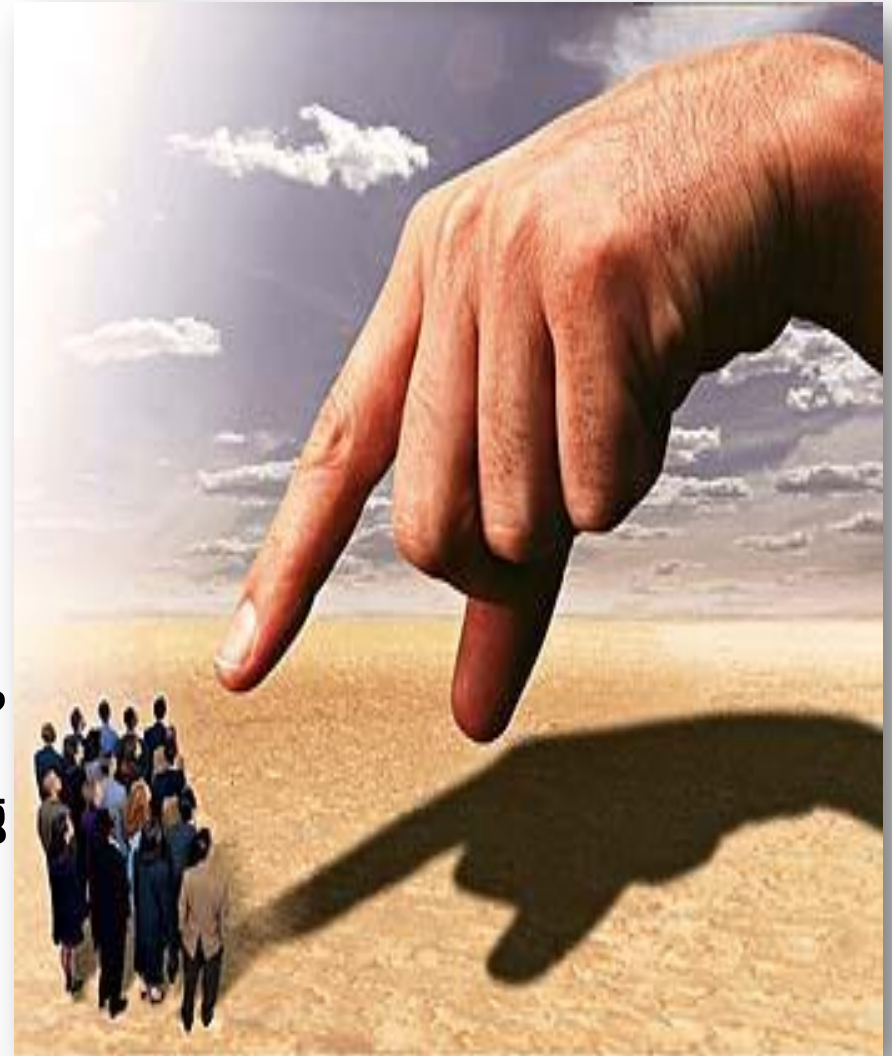
Question: *Is this really true?*

Answer: *It depends!*

“It’s your fault!”

- **It’s the mainframe!**
- **It’s the network!**
- **It’s the database!**
- **It’s the application!**

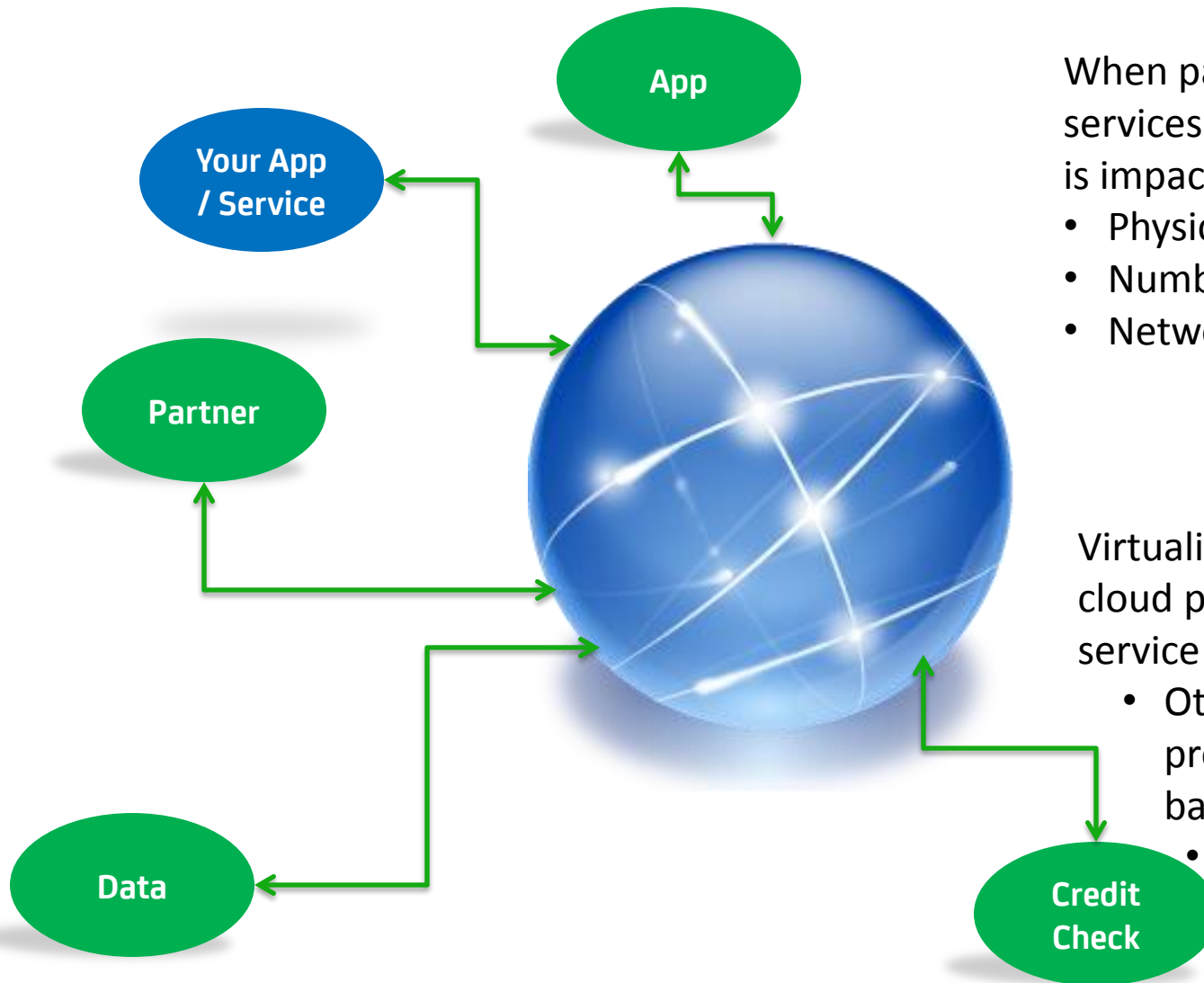
- **Do you have integrated monitoring across your systems?**
- **How do you integrate monitoring cloud services into your current infrastructure?**



from where to where...?



what's different in the cloud



When parts of your business services are in the cloud – QoS is impacted by:

- Physical distance
- Number of hops
- Network bandwidth

Virtualization effects at the cloud provider can impact service delivery to your apps:

- Other users can overrun processor or network bandwidth
- DoS attack against cloud provider may affect all customers

what's missing?

Worldview

- MARJO41A
 - ManagedObjectRoot
 - Domain
 - NetMaster Services
 - MARJO41(CA31)
 - MARJO41(SERVICE)
 - TCP/IP Network
 - 141.202
 - 0
 - 141.202.0.0
 - usilca3
 - usil
 - 155.35

ca | wily technology

Mainframe Network Overview

Components

Overall	IP Stacks	NetworkInterfaces	IP Applications	IP Nodes	IP Connections

IP Stack Health

All Stacks	IP Packet Fragmentation	TCP Retransmissions	UDP Datagrams Discarded

Active TCP/IP Connections

FTP and Telnet Totals

Time of latest network event ABC

[*SuperDomain*...] Tes...String Event= Impacted

powered by **NetMaster**

regulatory challenges – you are still responsible



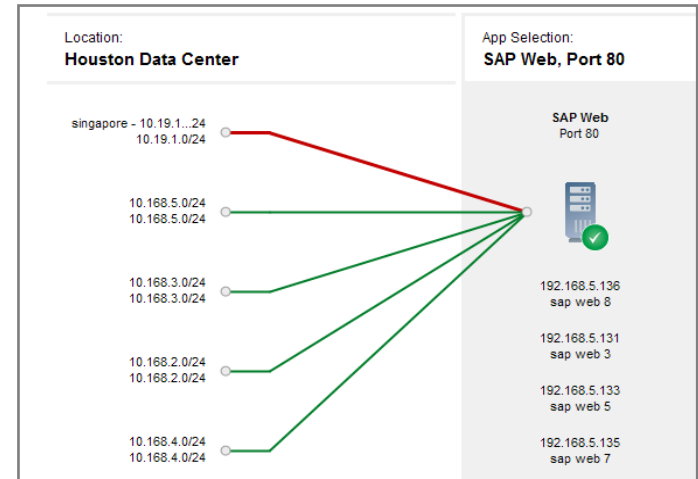
what can you measure?



the cloud management challenge

“You Can't Manage What You Don't Measure”

CA NetQoS Performance Center



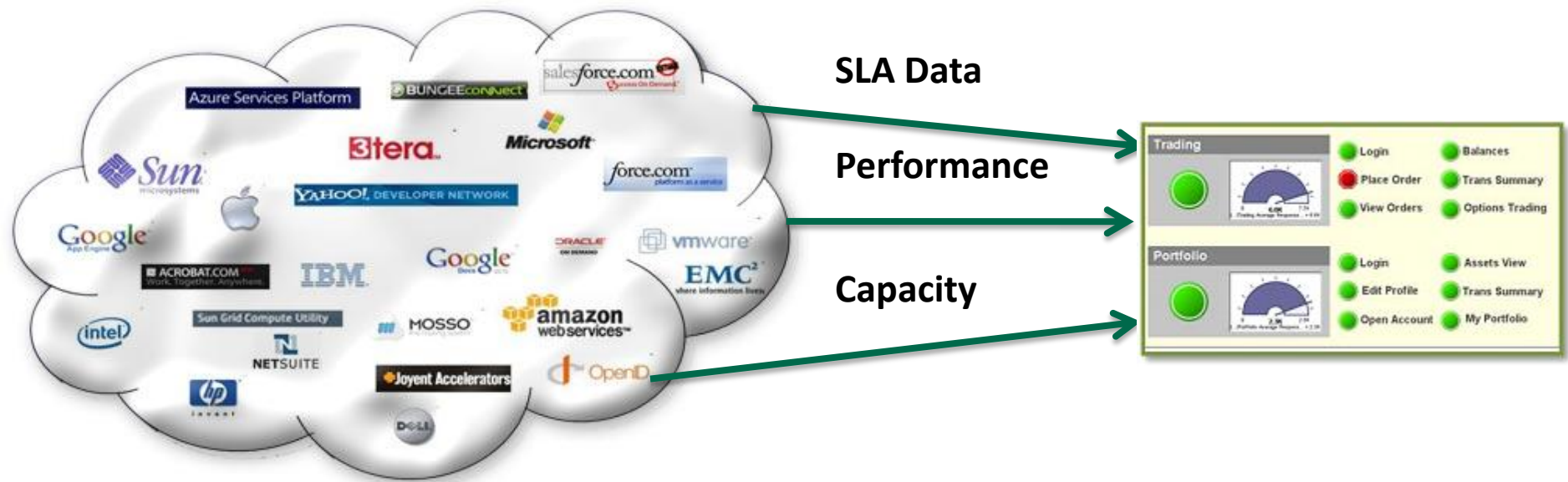
Interfaces Over Threshold

Status	Interface	Traffic Direction	Speed (bps)	Average Utilization
■	Boston::Boston - Serial 2/0.0 - T1 Link	In	1.54 Mbps	88.77 %
■	Boston::Boston - Serial 2/0.0 - T1 Link	Out	1.54 Mbps	88.93 %
■	London::London - Serial 2/0.0 - T1 Link	In	1.54 Mbps	59.84 %
■	London::London - Serial 2/0.0 - T1 Link	Out	1.54 Mbps	59.27 %
■	Houston::Houston - Serial 2/0.1 - T1 Link	In	1.54 Mbps	56.56 %

the cloud management challenge

Do your providers:

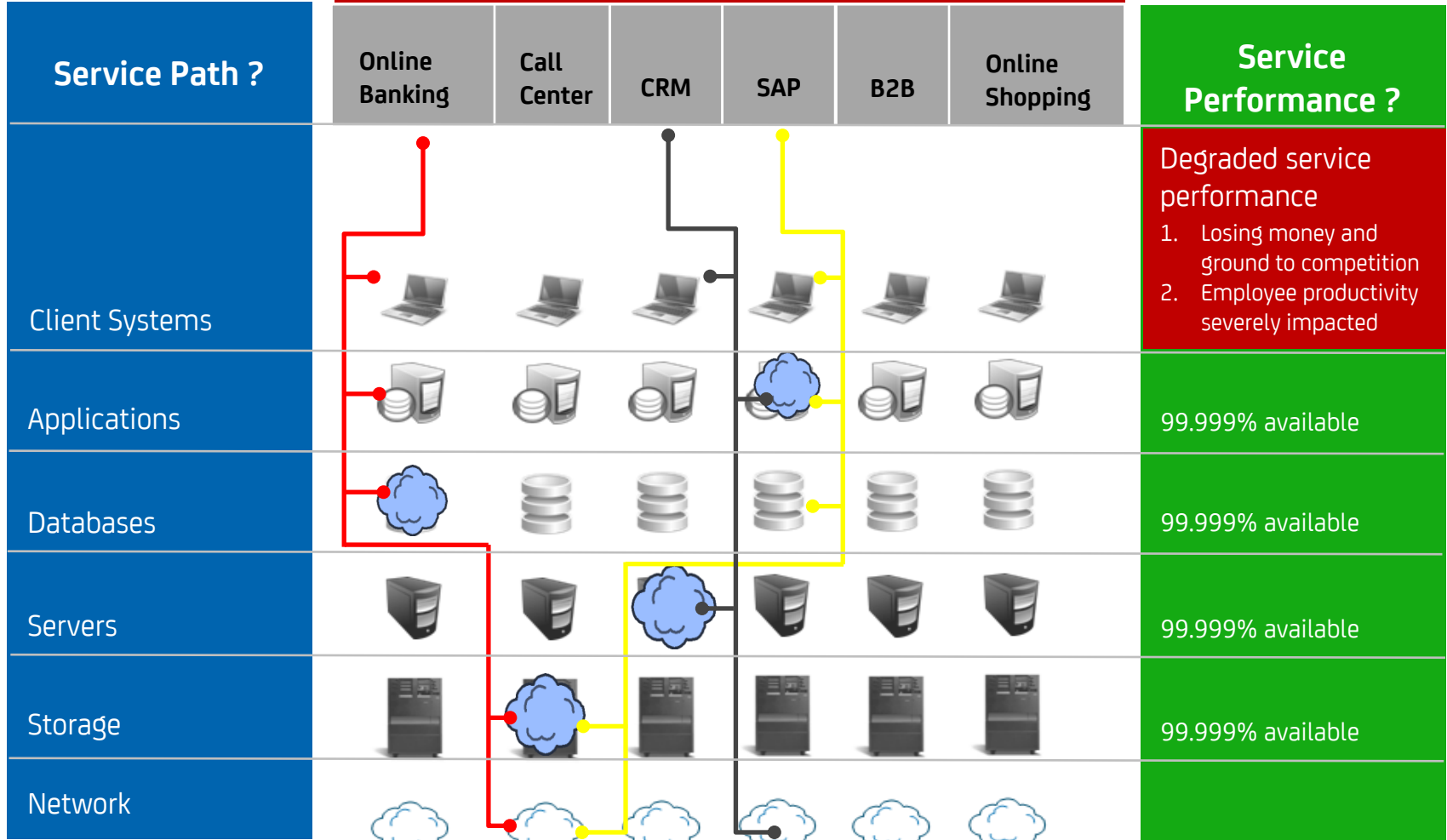
- Give you the metrics you need?
- Give you the metrics in the form you need?



Integrated monitoring and performance management is critical

the key challenges? systems & infrastructure complexity

Who's monitoring REAL user experience, based on a BUSINESS SERVICE view?



what do you know?



end-to-end transaction visibility: link transactions to the infrastructure

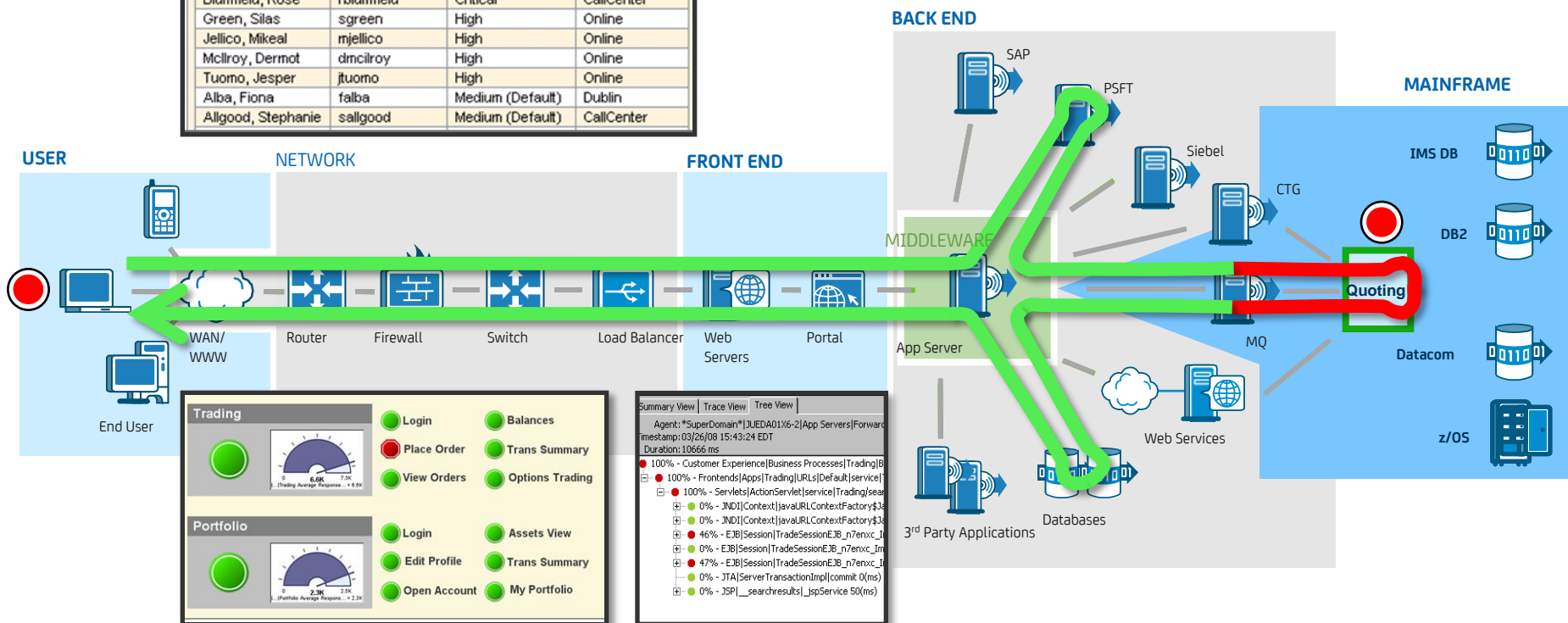
Understand
End-User experience;
establish SLAs

Monitor business transactions
through the IT infrastructure;
measure response & SLAs

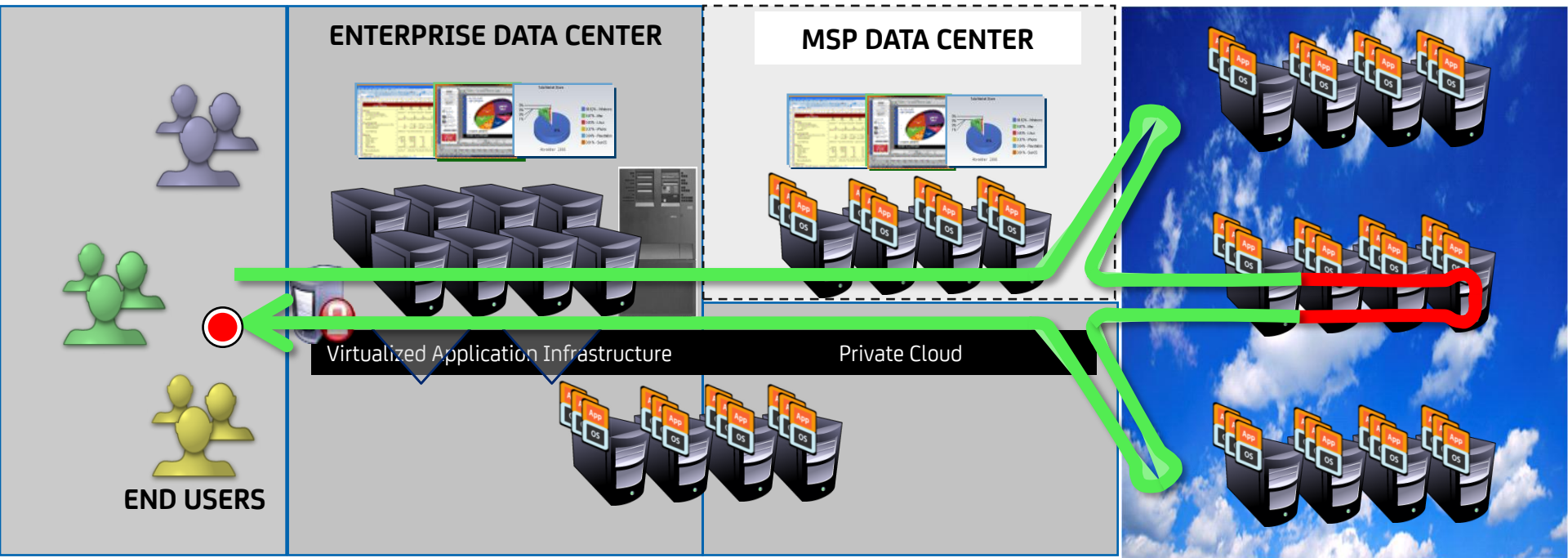
Proactively detect issues; diagnose root cause
of application-based problems

Affected User List for Incident 1009

User	Login Name	Impact Level	User Group
Thorson, Jane	jthorson	Critical	Online
Blumfield, Rose	rblumfield	Critical	CallCenter
Green, Silas	sgreen	High	Online
Jellico, Mikeal	mjellico	High	Online
McIlroy, Dermot	dmcilroy	High	Online
Tuomo, Jesper	jtuomo	High	Online
Alba, Fiona	falba	Medium (Default)	Dublin
Allgood, Stephanie	sallgood	Medium (Default)	CallCenter



how cloud changes the game.... the new application monitoring reality



**the best approach...
put the work where it makes the most sense**

“...in the long run the marketplace rewards those that make the optimum use of the right computing resources in the right way as evidenced by business performance”

*Dr. Howard Rubin, CEO and Founder Rubin Worldwide



mainframe – the original private cloud



Scalability, Virtualization, Elasticity, On-demand Provisioning, Multi-tenancy,
SLA Management, Charge-back and Billing

account for everything

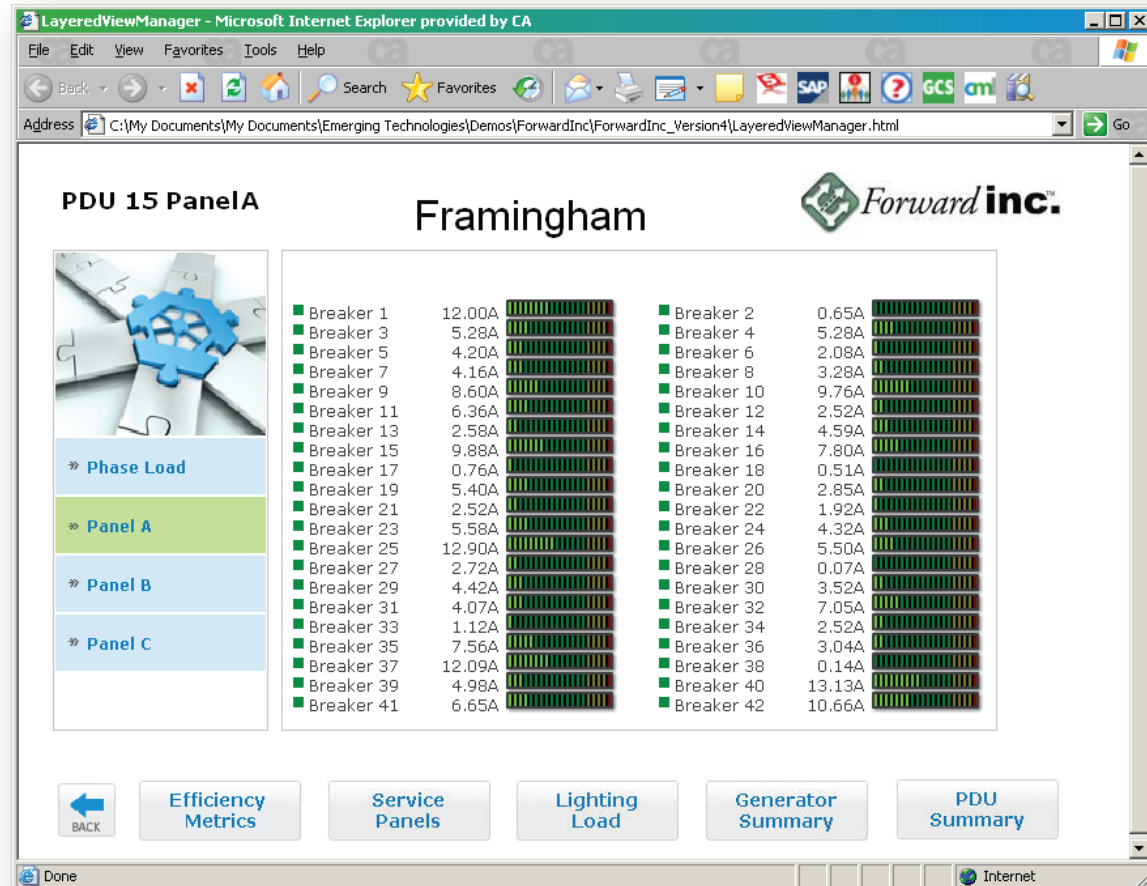
— Don't just measure the obvious

- Hardware cost
- Software cost

— How about?

- People
- Power
- Air conditioning
- Floor space

— Check into EAGLE and RACE studies from IBM



System z lowers IT spending across many industries



44%

lower IT cost per
credit card transaction



31%

lower IT costs per
consumer loan



25%

lower IT cost per
megawatt hour



24%

lower IT cost per
hospital bed



20%

lower IT cost per
airline passenger



26%

lower IT cost per
new vehicle



25%

lower IT cost per
retail store



23%

lower IT cost per
barrel of oil

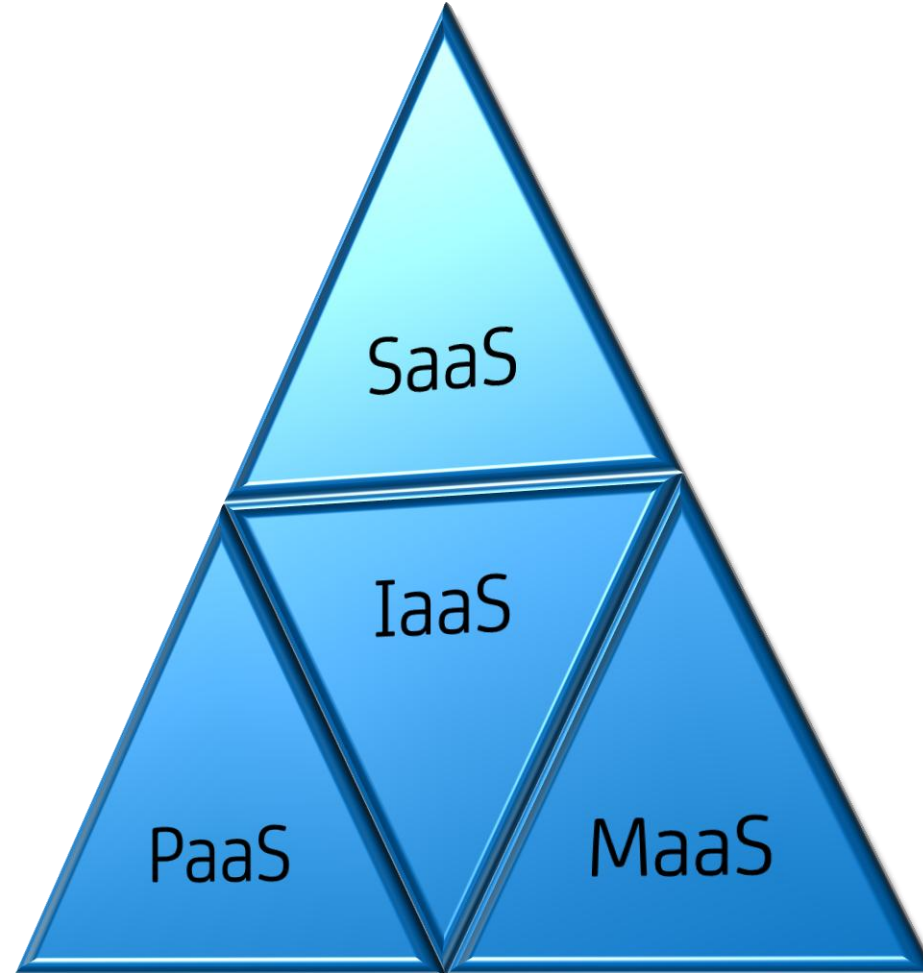
Source: Dr. Howard Rubin, CEO and Founder Rubin Worldwide
•<http://www.rubinworldwide.com>

mainframe cloud benefits...

1. Security
 2. Scalability
 3. Lower management costs
- More...
 - Increased agility/responsiveness
 - Rapid on-demand provisioning

many are already leveraging cloud services

Can you leverage any of these to your advantage?

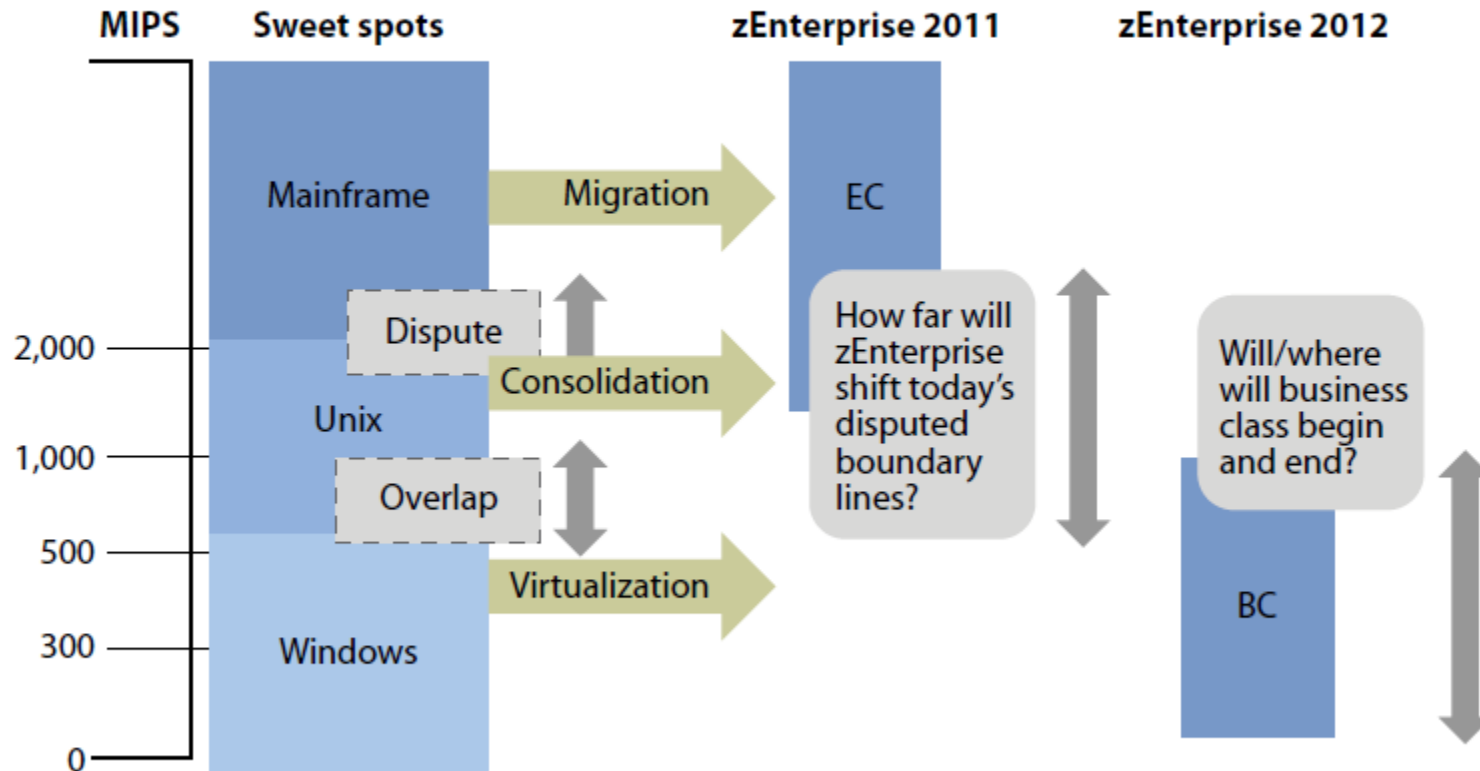


consider...

- Some things run better on a Mainframe
 - Some things run better on Distributed
 - Some things run sufficiently well in the cloud
 - And some do equally well on any/all/a combination
 - Some services need everything to run
 - What areas do you have the skills...?
 - What existing infrastructure do you have...?
 - Avoidance of platform proliferation
-
- No bias, simply a business decision

zEnterprise - intensified boundary line conflict

zEnterprise Will Intensify The Conflict Around The Boundary Lines

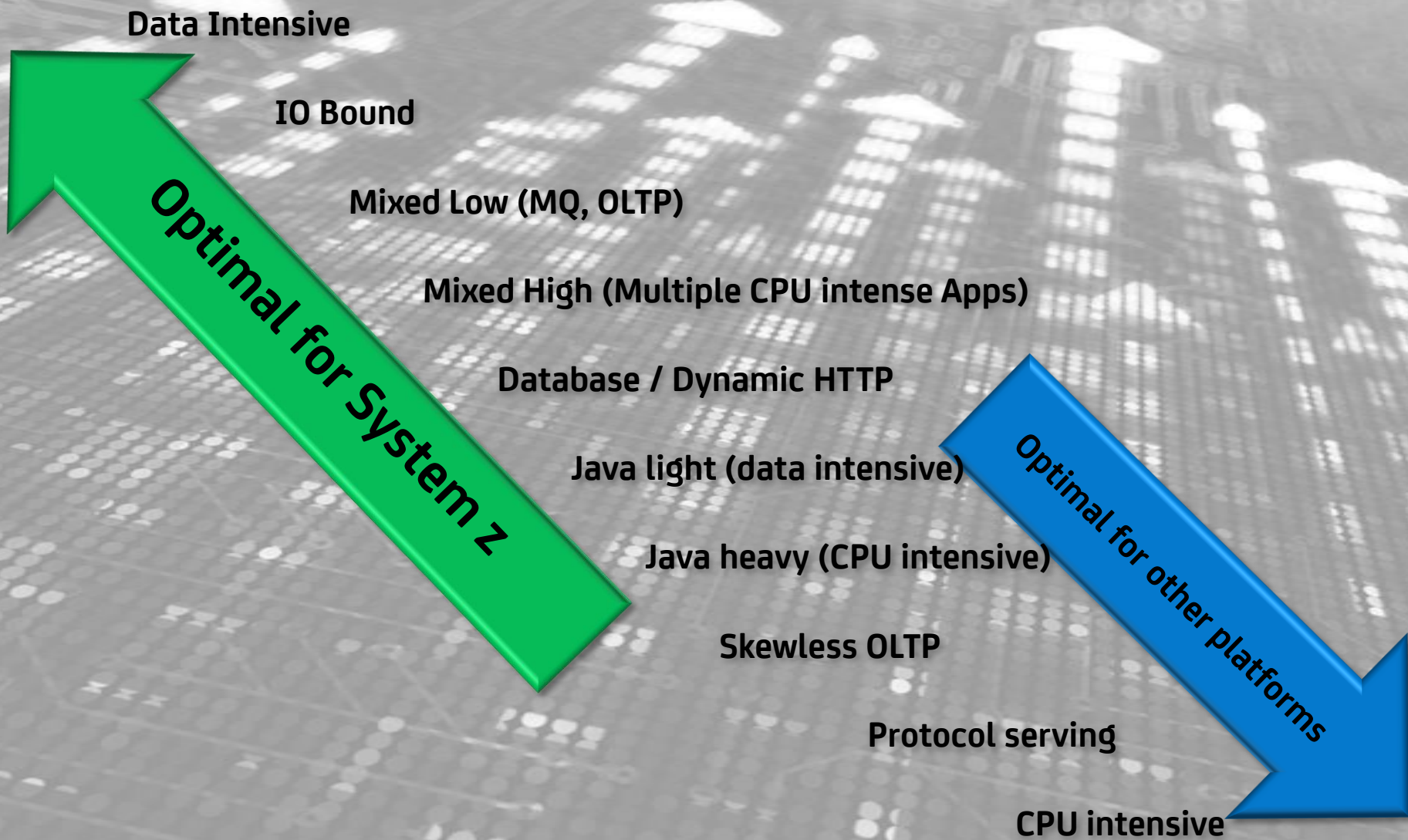


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Source: Forrester Research, Inc.

Forrester Research Inc., "zEnterprise Should Change The Role Of The Mainframe In Application Strategy Decisions", August 27, 2010

where should the work go?



- To enable hybrid cloud services...
- To deliver internal, private cloud services...
- To support use of public cloud services...

food for thought...

Customers of IT do not care about the infrastructure; they only care about the service, its availability and its cost

- Your organization probably has some set of initiatives underway – figure out a way to “help”
- The most obvious means to a mainframe private cloud is by leveraging Linux on System z
 - IFL cost per “core” is a fraction of z/OS processing cost
 - with the right set of management and security tools in place
- Providing System z qualities of service, hardware, software and *systems programming staff* can elevate the platform to indispensable status – making it the de facto platform for private cloud

talk to the business

IT must recast its role as a partner in delivering business services, providing leadership in the exploitation of technology to automate and increase the velocity of those services.



Summary

- IT complexity is still an issue
- Cloud is happening and has the potential to both increase or decrease complexity
- Monitoring and measurement remain crucial to achieving success in the cloud connected world
- The Mainframe will NOT go away
- The power of your applications is in YOUR data
 - Integration of cloud and Mainframe is inevitable
- The Mainframe can already be used to deliver the “Cloud advantage”
- IT needs to partner with the business to deliver a set of continuously improving services

mainframe is important



85%

Source: CA customer surveys

mainframe is essential



73% 79%

Source: CA customer surveys

discussion

thank you