Session 12879: Building a Platform for Enterprise-Wide Datacenter Operations

Scott Fagen
Distinguished Engineer & Chief Architect - Mainframe

agility
made possible™

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abstract

As mainframe and distributed systems converge, cross-platform automation is key to successfully delivering enterprise-wide IT services. Come to this session to understand steps you can take to help provide seamless automation of IT processes and events across functional and technological silos.

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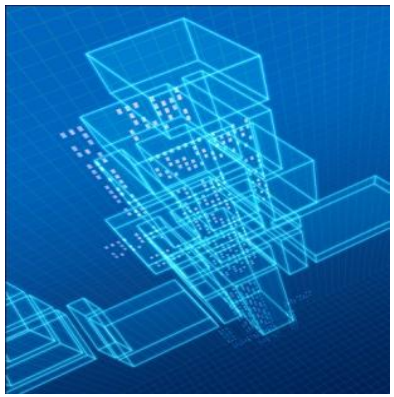
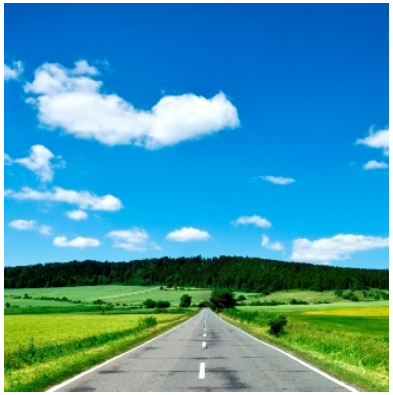


88%
Enterprise Commercial Apps Moving to the Cloud

Can you keep up with business demand for innovation?

Sources: See addendum



30%
of IT budgets being allocated to cloud deployments

74%
Companies have deployed hybrid cloud services

73B
Estimated for Public Cloud in 2015

1 IDC, "Top 10 Predictions, Worldwide CIO Agenda 2012 Top 10 Predictions," David McNally, Meredith Whalen, January 2012. IDC #232816. Volume 1.

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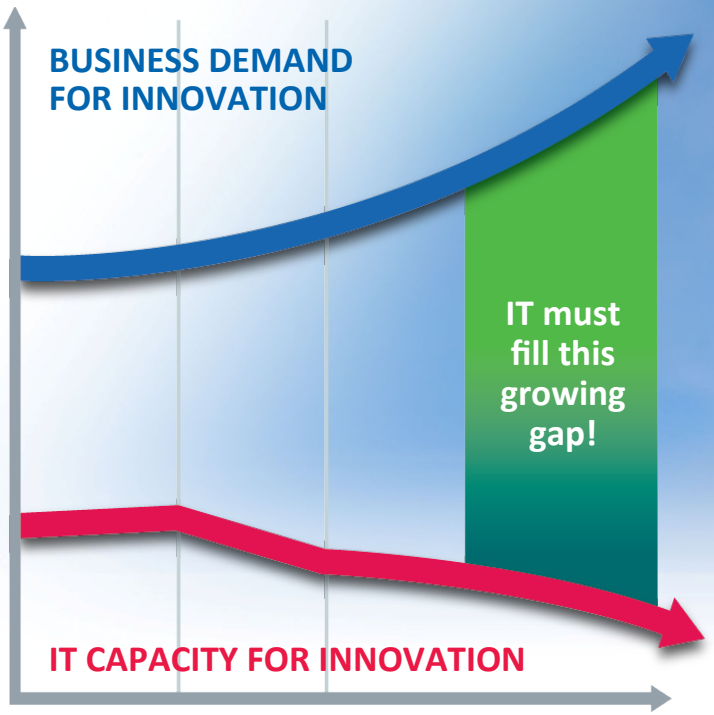
the “New Normal” and the shift to innovation



IT must deliver new services that ACCELERATE INNOVATION

Mobility | Social | Big Data | SaaS | Client Experience

While TRANSFORMING delivery of mainstream IT

Rationalization | Agile Cloud Delivery | Standardized Infrastructure | Automation Reengineering | Bring Your Own Device

IT must shift from

Managing Technology To Delivering Innovation

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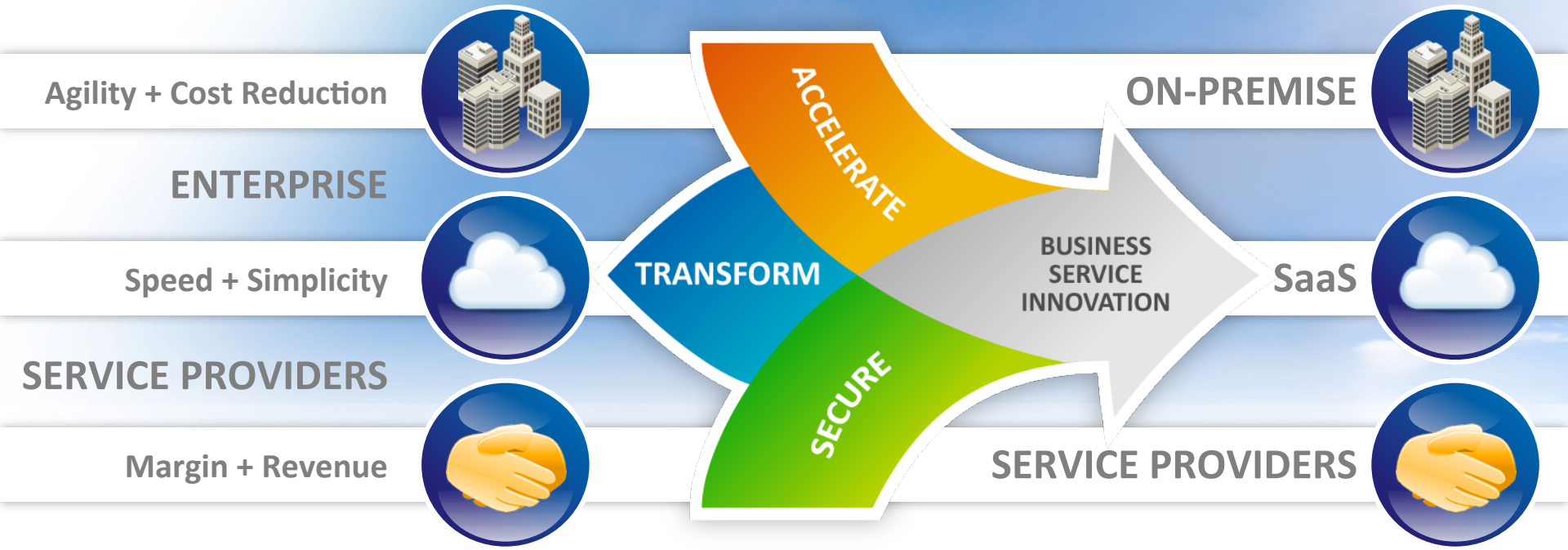
cloud as key enabler to innovation and its benefits



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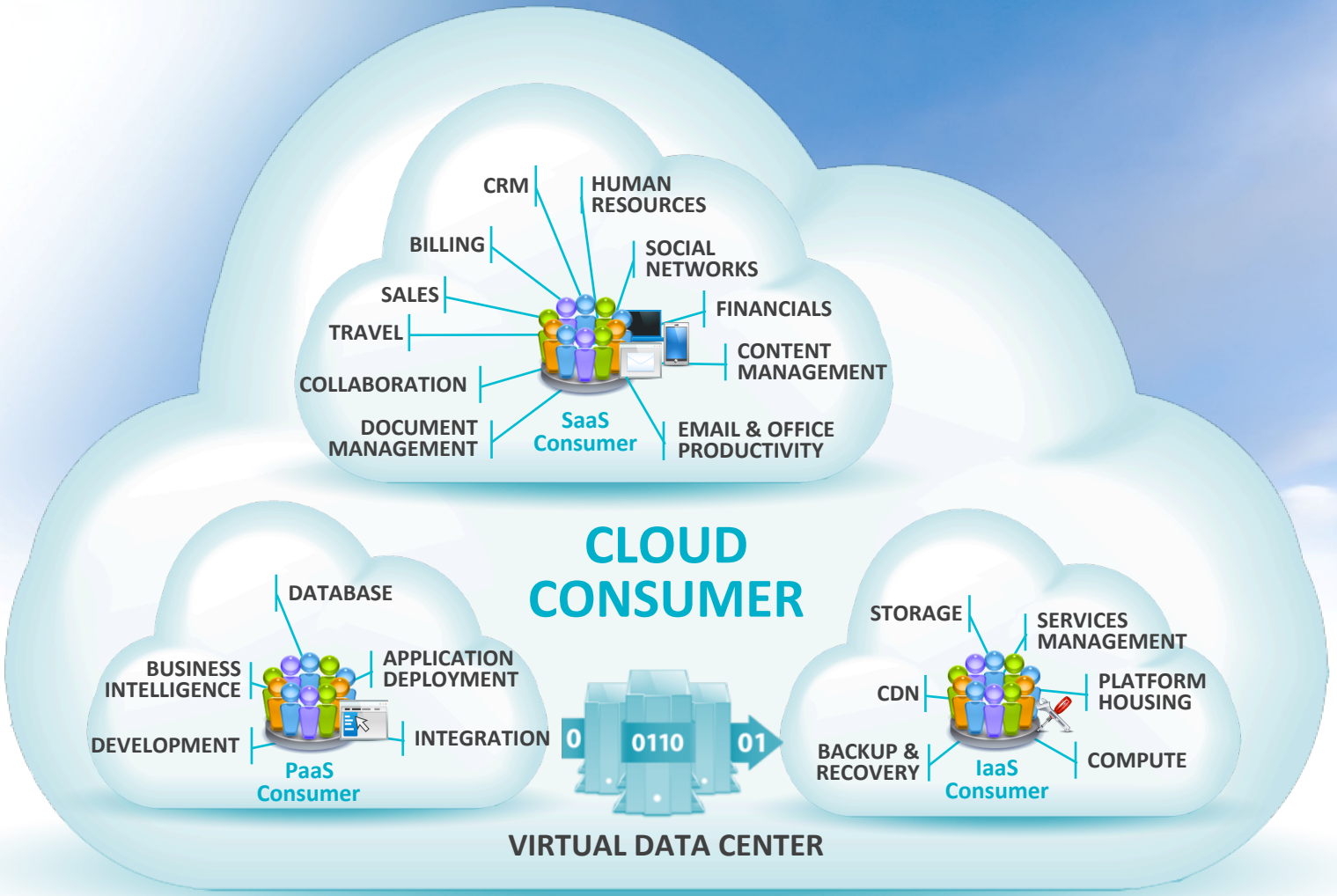
the innovation mandate: everything as a service

complexity of hybrid service delivery



Source: NIST Cloud Computing Reference Architecture | Version 1, March 30, 2011

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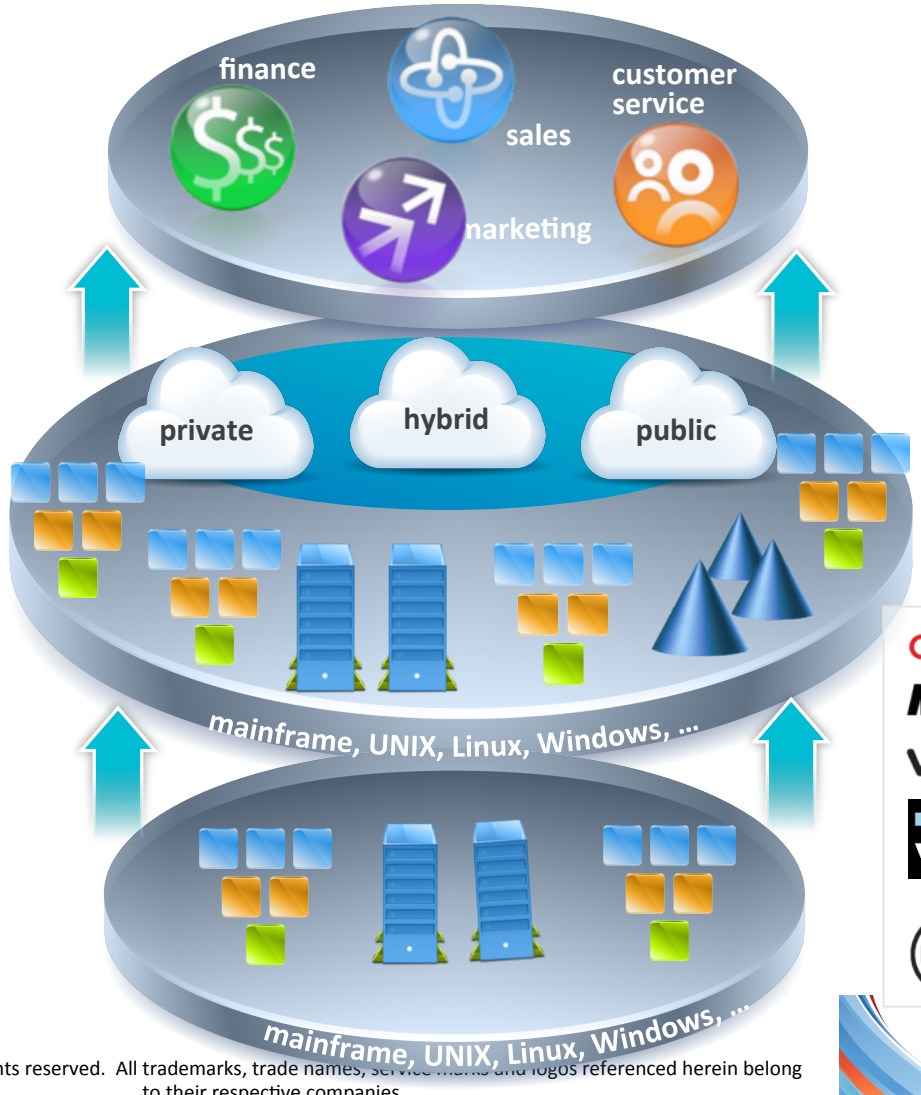
service delivery in vast heterogeneous, hybrid IT ecosystem



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it should be simple, easy and safe to deliver innovation

Business Service Innovation can be achieved in a complex and constantly evolving technological world

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getting started:
how do you know?

CRITICAL QUESTIONS FOR TODAY'S IT STAFF

- *WHICH* apps should we host *WHERE*?
- Which services do I want to create?
- Do I have enough or too much capacity?
- Do I have transparency to services performance, cost and its value to the business?
- How do I accelerate application development and test cycle times?
- Should we buy, build or outsource?
- What about performance, security, and compliance and risks?
- What is the cost of a mistake…?

IT MUST MANAGE APPS AND SERVICES ACROSS HYBRID DELIVERY MODELS

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getting started: what do you need?

TO BECOME MORE AGILE, A PLATFORM IS NEEDED

- Think of cloud as a management paradigm, *not* a place or a thing
- Work across traditional silos to remodel today's applications as "business services"
- Look at products and tools that do more than just "enable the cloud" – they must "enable the transition to the cloud"
  - Does my platform protect my investments?
- Products and tools should work together to form a consistent platform
  - Does provisioning work with capacity planning, performance management, service assurance…?
  - Do the tools support my hardware and operating environment choices?
  - How flexibly can I move services between my operating environment choices?

IT MUST MANAGE APPS AND SERVICES ACROSS MULTIPLE DELIVERY MODELS

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getting started: what do you need?

WHAT IS A PLATFORM?

A successful platform implementation improves flexibility and agility by reducing complexity, while supporting the reuse of existing, proven implementations

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a roadmap to successfully delivering enterprise-wide IT Business Service Innovation

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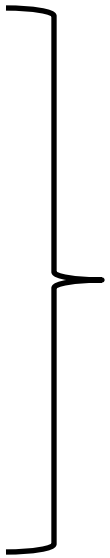
the state of the business today

- For historical reasons, systems management is done along platform lines
  - There may even be subdivisions along functional lines
- What comprises a “management domain”?
  - People
  - Process
  - Hardware
  - Software
  - Tools
  - Measurements
  - Schedules



Politics

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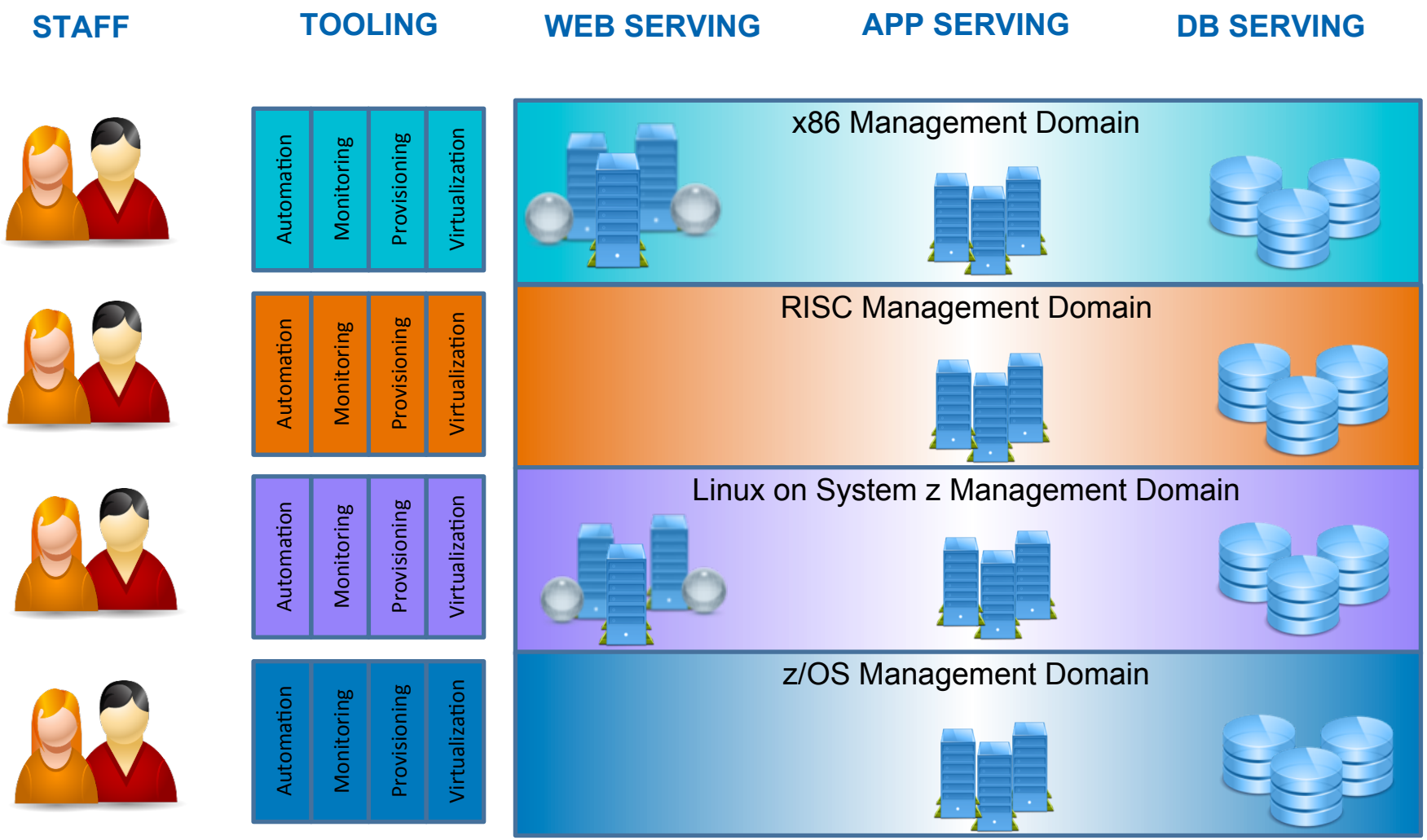
the state of the business today…platform silos



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business should be focused on outcomes, not technology

The business has a problem to solve:

- Inputs
- Outputs
- Metrics & SLAs
- Cost

Application architects and developers will use whatever they have on-hand to create and deliver new value to the business

IT takes these criteria and uses them to deliver a service

- Resources are decided based on the requirements delivered by business
- Historical deployment greatly influences the delivered architecture
- Often, there is external pressure to use particular technologies
  - "Cloud"…"not mainframe"…"Oracle"…"Linux"

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IT needs to deliver on business requirements

- IT needs to take business requirements and produce a system that meets those demands
- Cost efficiency and flexibility are always implied
  - Reuse of existing infrastructure should be considered but not be the only guiding influence
- Attributes of the workload will help determine implementation, but IT should also provide multiple paths to support different QoS objectives
  - Do you need Platinum, Gold, Silver, Copper or Wood QoS?

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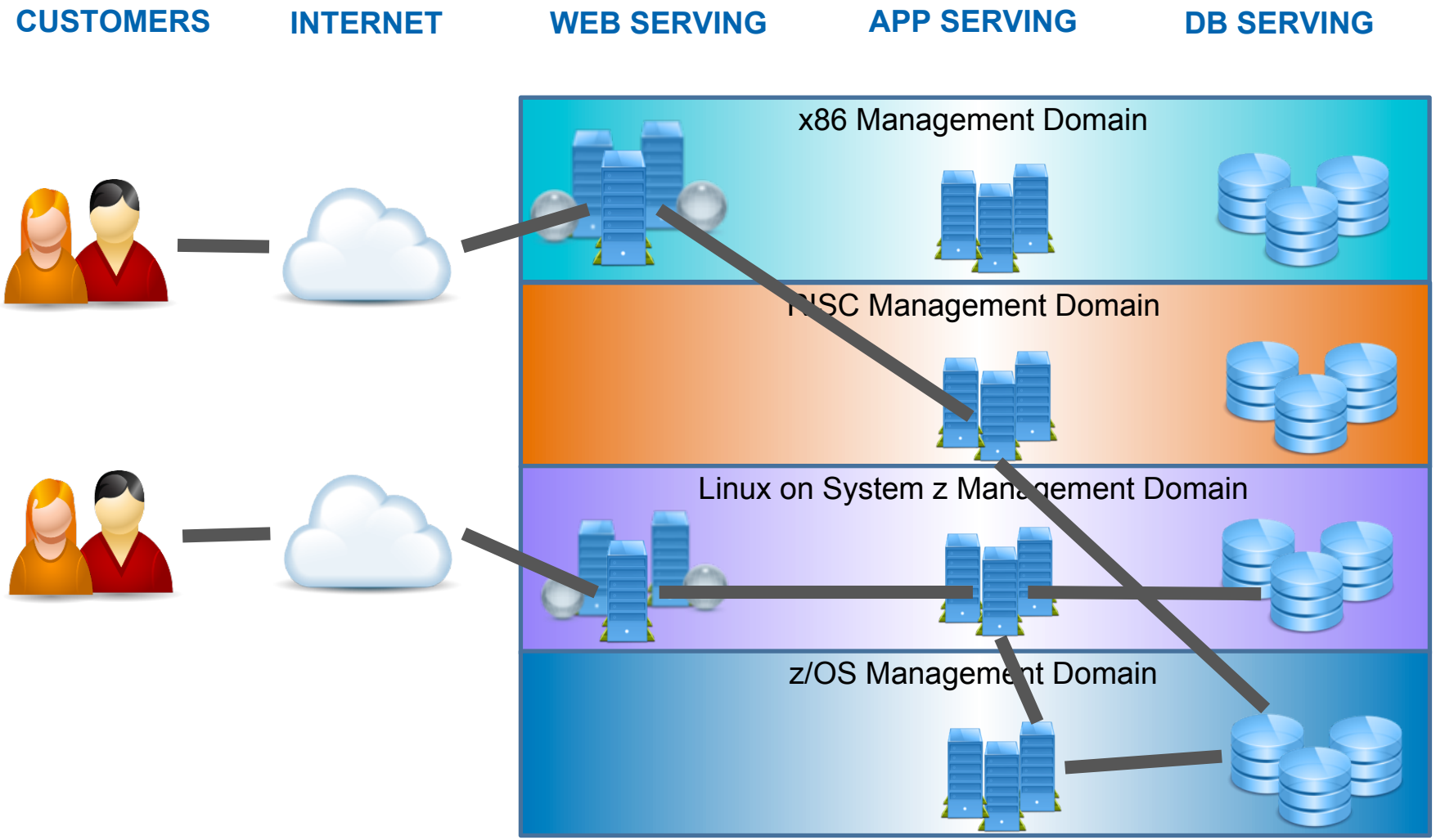

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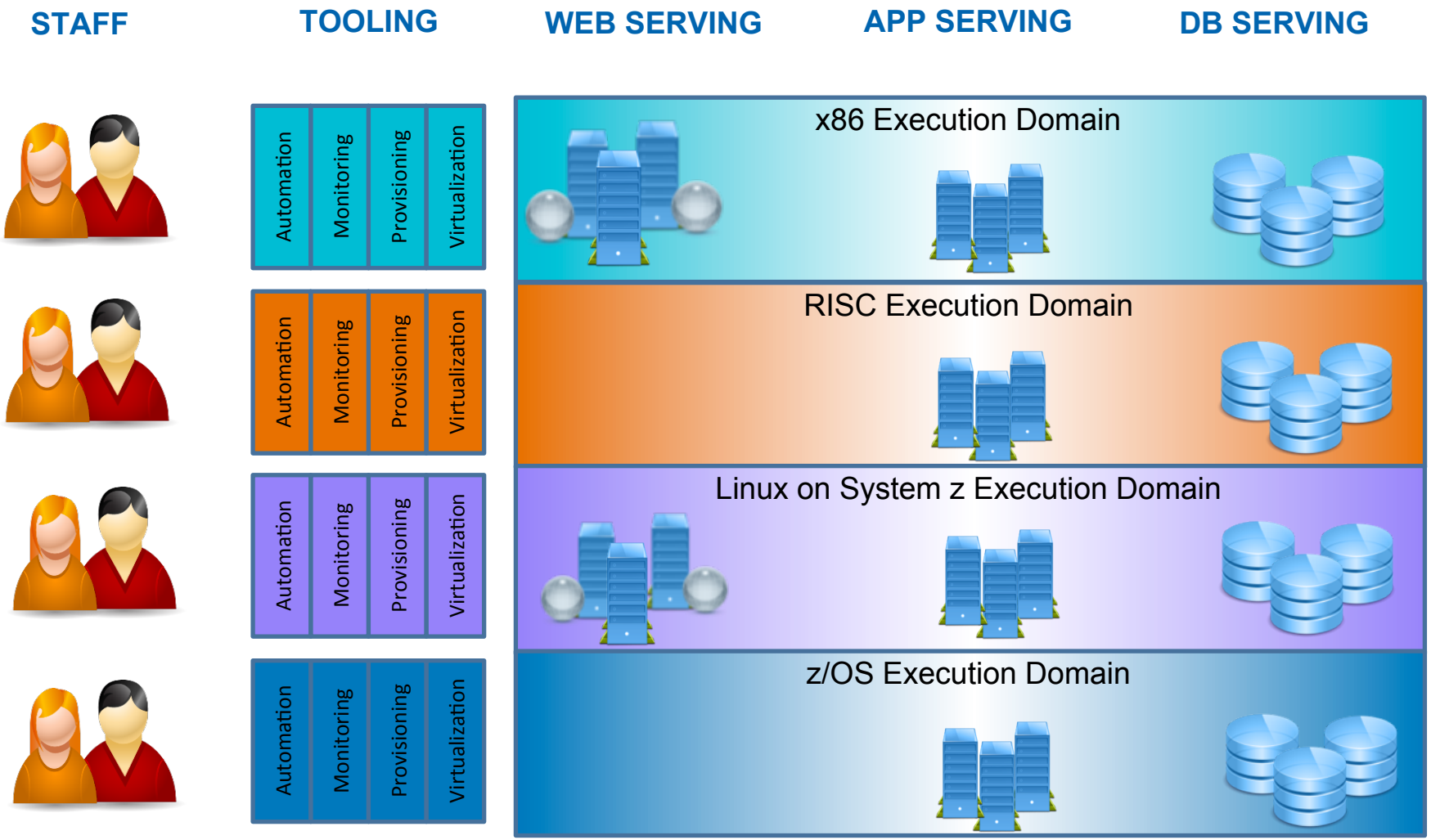
adopting a platform mentality can help eliminate silos



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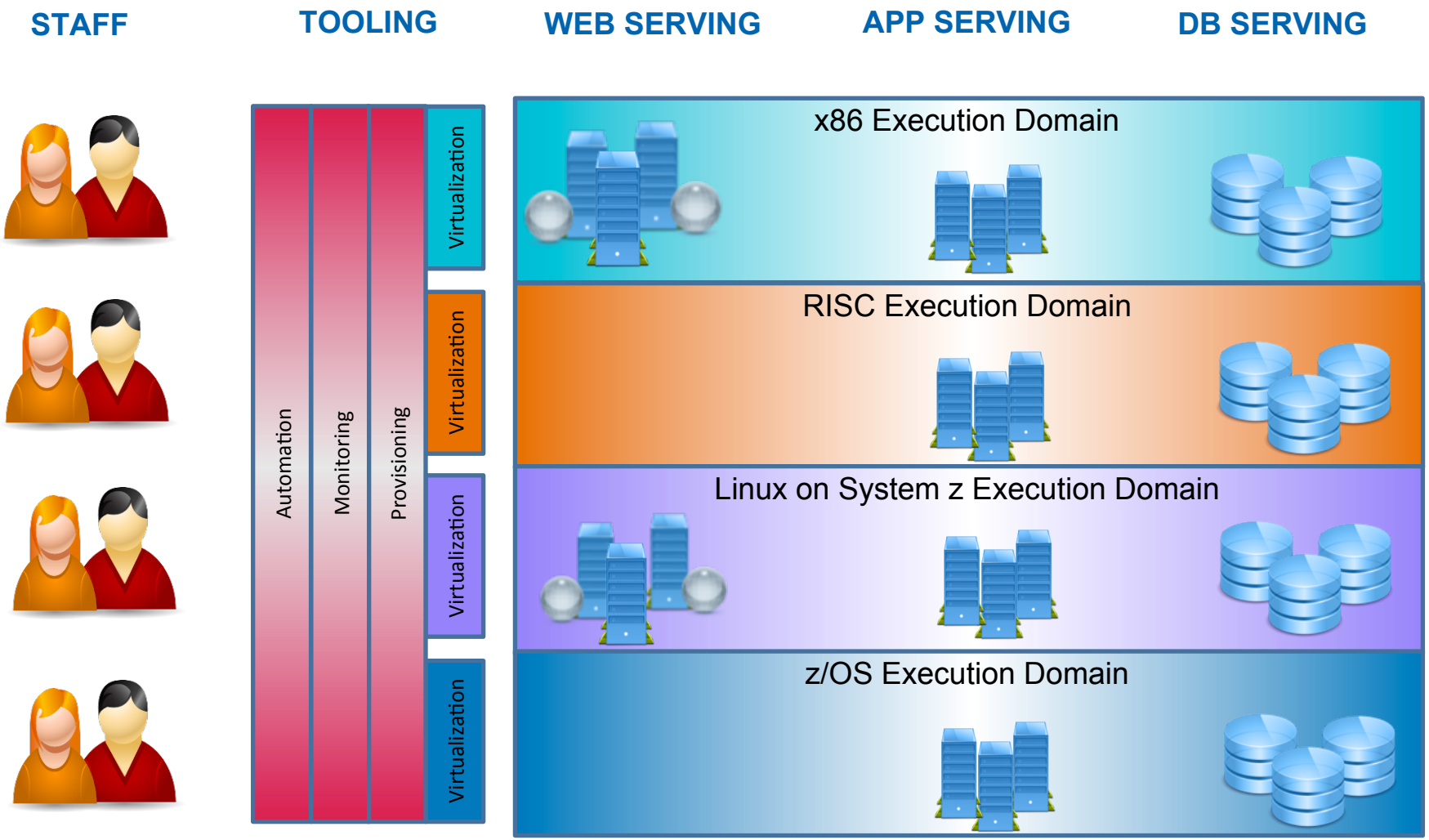

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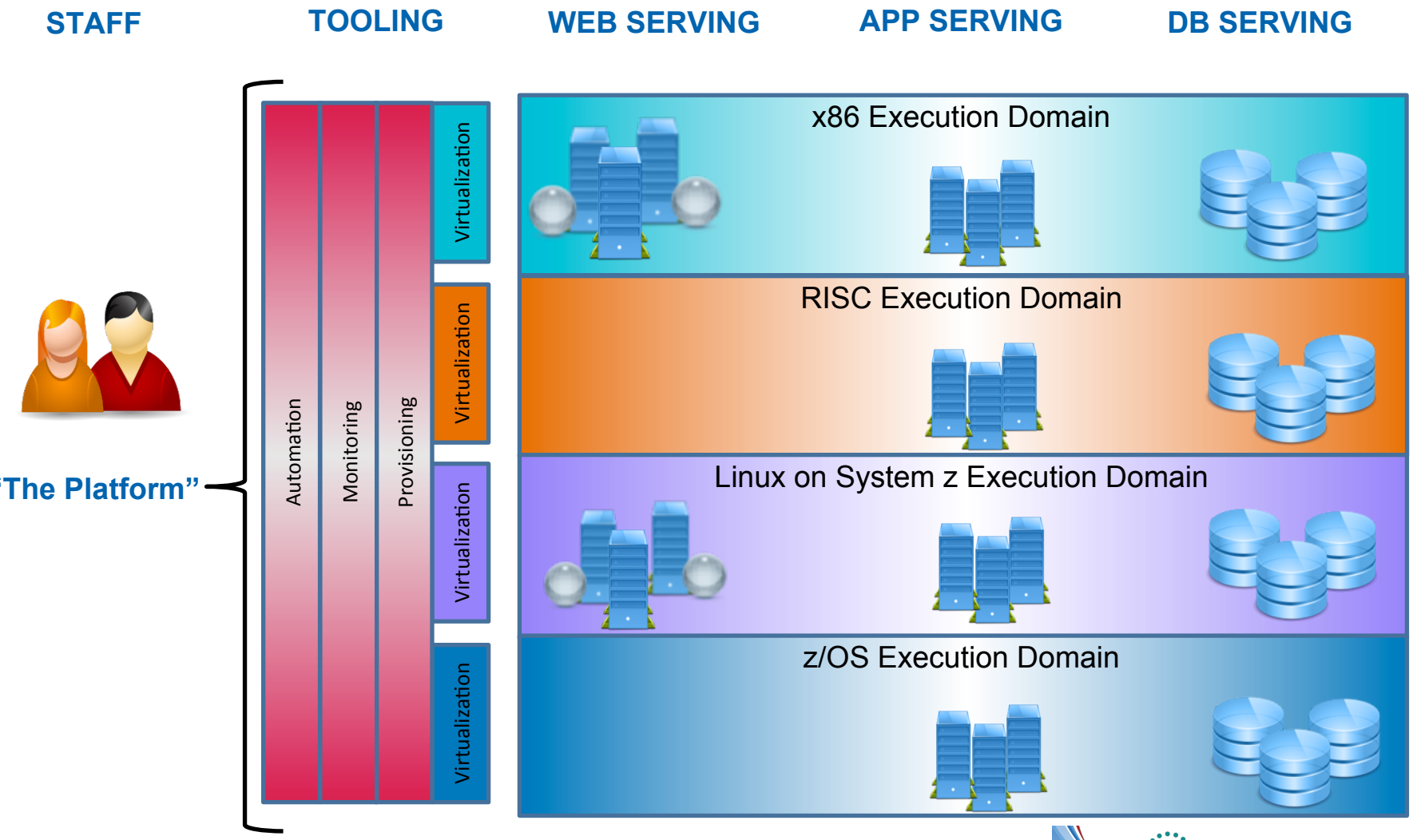

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the need for a integrated Service Delivery paradigm

For IT to deliver the next round of improvements to improve service delivery, there are a set of principles that need to be adhered to:

- IT staff should align to business services and results, not silo metrics
- The tool set should extend to provide both business and technical metrics
- Where possible, abstract or virtualize away technical distinctions
- IT should provide automated or self service access to resources and data

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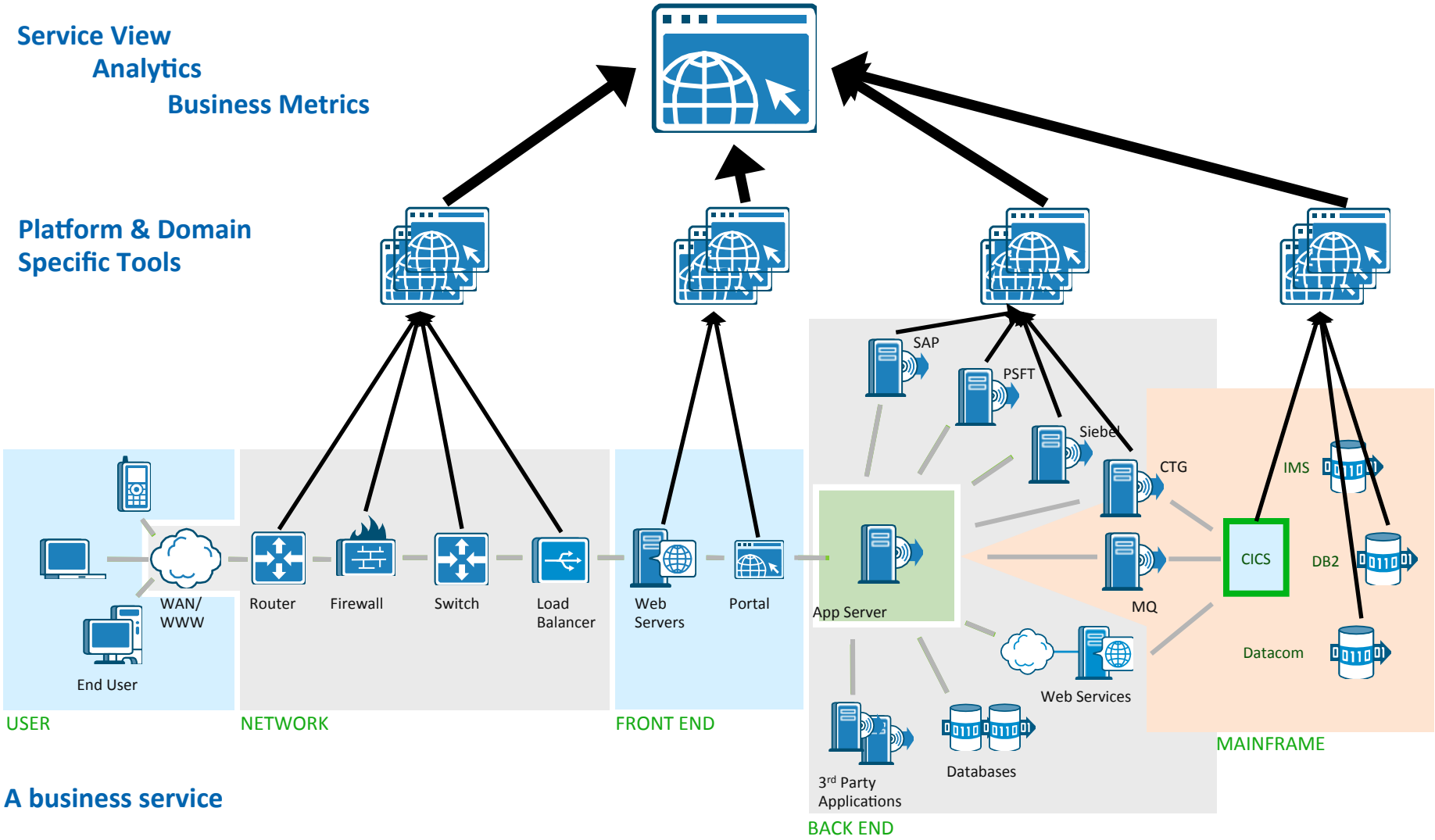
an architecture for alignment



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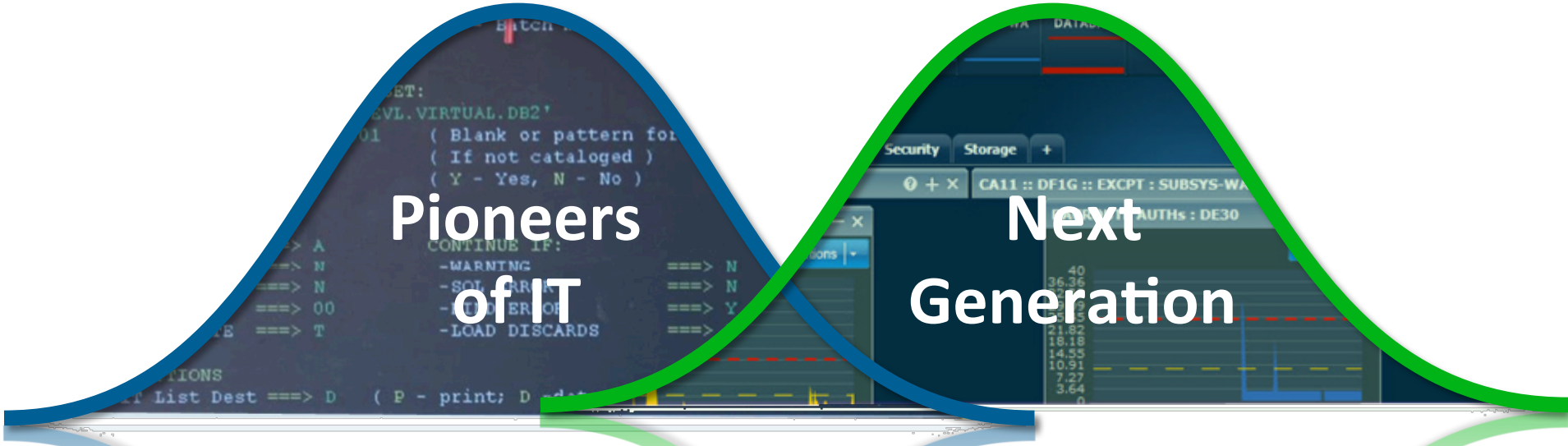
step 0: empower the hybrid IT workforce

Converge the management of mainframe, distributed and cloud

- Enable next-generation mainframer: the hybrid IT worker
- "Net Generation" thinks and works differently
- Need tools and processes that simplify and unify



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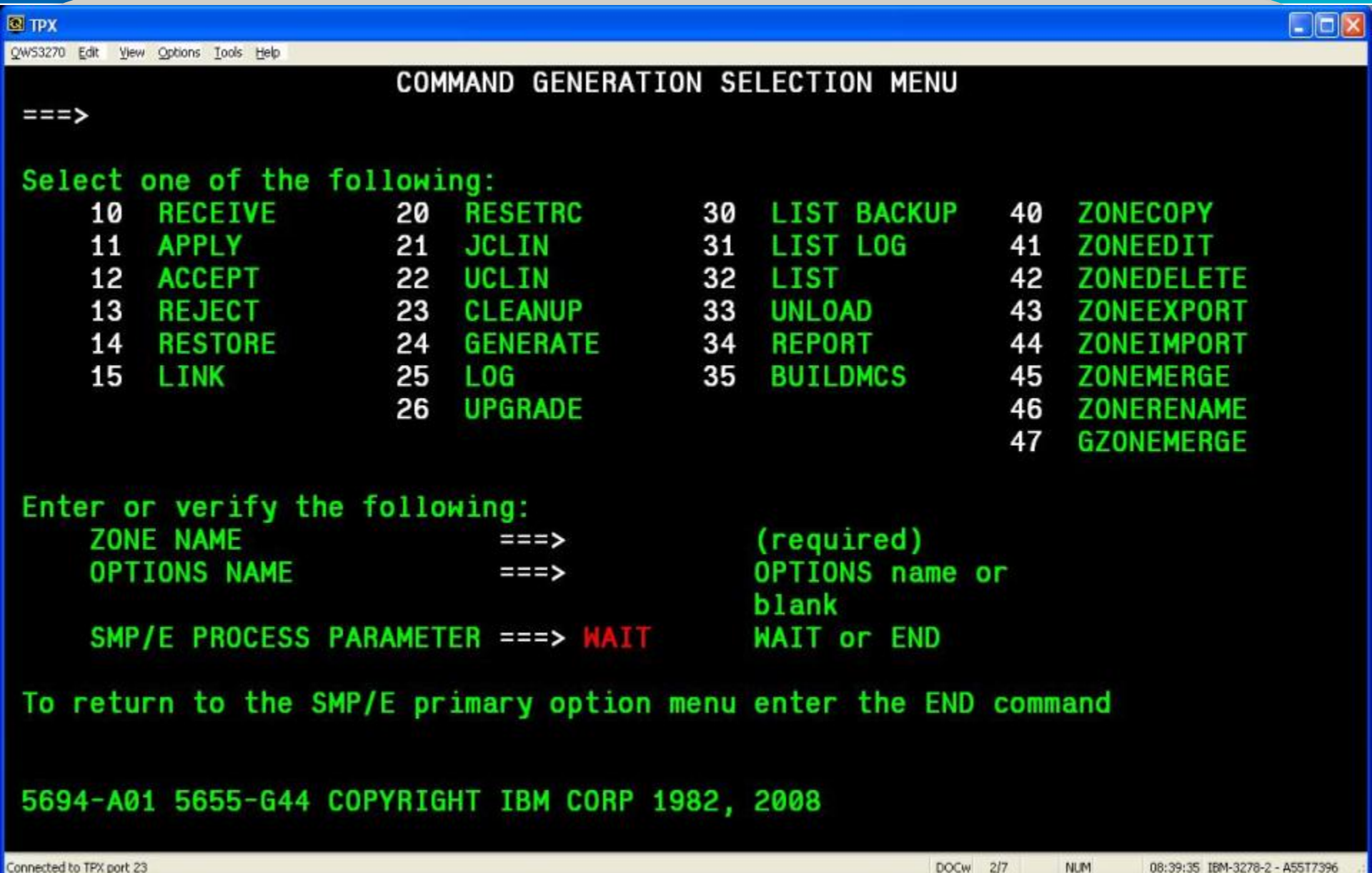
simplify and unify



CA Mainframe Software Manager time savings install

87% improvement* | 93% improvement*

Product	Expert SMP/E	Expert MSM	Change	Novice SMP/E	Novice MSM	Change
CA 1®	36 min	9 min	4X	3 hrs 12 min	14 min	14X
CA Auditor for z/OS	26 min	7 min	4X	2 hrs 22 min	8 min	18X
CA Datacom®	1hr 14 min	6 min	12X	3 hrs 8 min	10 min	19X
CA JARS	37 min	5 min	7X	1 hr 11 min	6 min	12X
CA Librarian®	28 min	2 min	14X	1 hr 13 min	6 min	12X
CA MIM™	30 min	5 min	6X	1 hr 31 min	5 min	18X
CA OPS/MVS®	36 min	6 min	6X	1 hr 50 min	7 min	16X
CA Panvalet®	54 min	3 min	18X	1 hr 11 min	5 min	14X
CA SMF Director	40 min	5 min	8X	1 hr 10 min	6 min	12X
CA SymDump® for CICS	38 min	3 min	12X	4 hrs 3 min	6 min	40X
Totals	**6 hrs 39 min**	**51 min**		**20 hrs 51 min**	**1 hr 13 min**	

8X

17X

*Source: CA Lab test results

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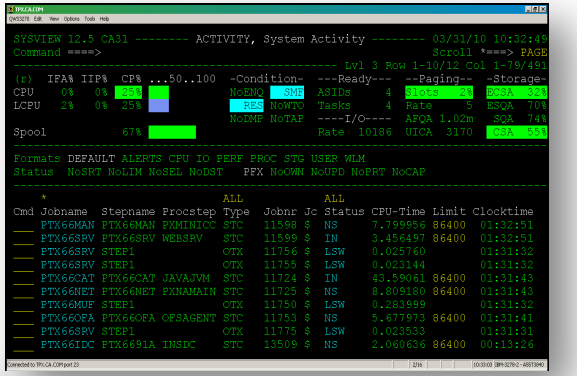
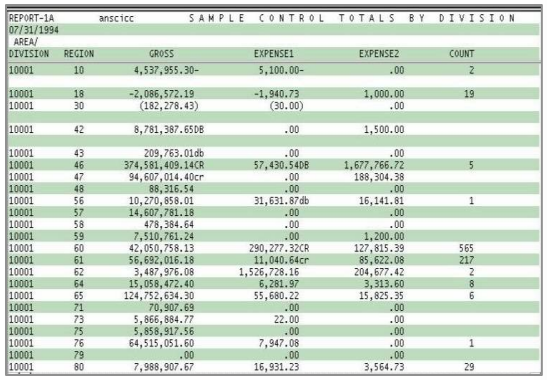
# of course….the mainframe has long been known for its…

Integrated Workspace

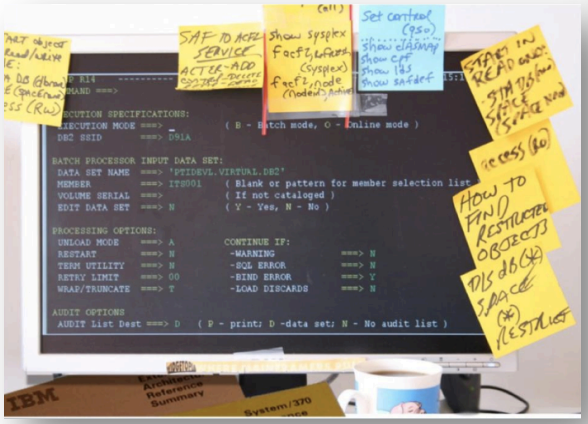
Rich Visualization

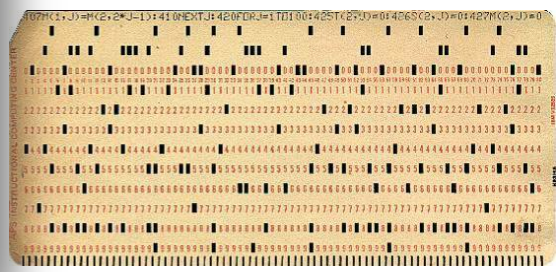




REPORT-1A anscicc SAMPLE CONTROL TOTALS BY DIVISION
07/31/1994
AREA/
DIVISION REGION GROSS EXPENSE1 EXPENSE2 COUNT

10001	10	4,537,955.30-	5,100.00-	.00	2
10001	18	-2,086,572.19	-1,940.73	1,000.00	19
10001	30	(182,278.43)	(30.00)	.00	
10001	42	8,781,387.65DB	.00	1,500.00	
10001	43	209,763.01db	.00	.00	
10001	46	374,581,409.14CR	57,430.54DB	1,677,766.72	5
10001	47	94,607,014.40cr	.00	188,304.38	
10001	48	88,316.54	.00	.00	
10001	56	10,270,858.01	31,631.87db	16,141.81	1
10001	57	14,607,781.18	.00	.00	
10001	58	478,384.64	.00	.00	
10001	59	7,510,761.24	.00	1,200.00	
10001	60	42,050,758.13	290,277.32CR	127,815.39	565
10001	61	56,692,016.18	11,040.64cr	85,622.08	217
10001	62	3,487,976.08	1,526,728.16	204,677.42	2
10001	64	15,058,472.40	6,281.97	3,313.60	8
10001	65	124,752,634.30	55,680.22	15,825.35	6
10001	71	70,907.69	.00	.00	
10001	73	5,866,884.77	22.00	.00	
10001	75	5,858,917.56	.00	.00	
10001	76	64,515,051.60	7,947.08	.00	1
10001	79	.00	.00	.00	
10001	80	7,988,907.67	16,931.23	3,564.73	29





Robust Reporting

Knowledge & Collaboration

Process Automation

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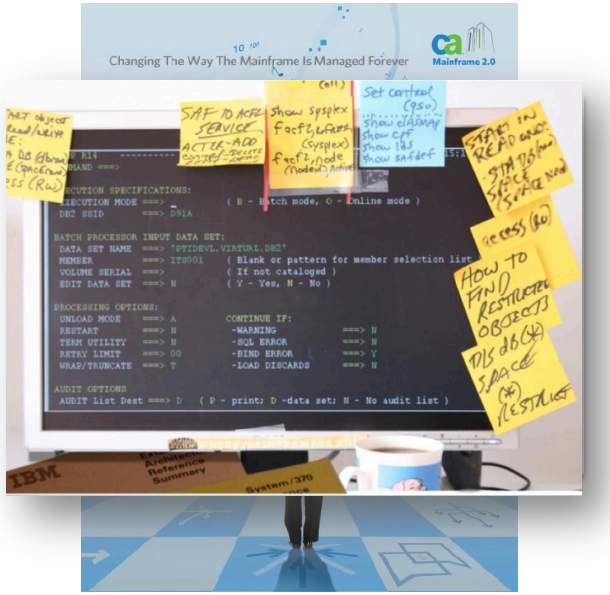
Next-Generation Mainframe Management...

Integrated Workspace

Rich Visualization



Robust Reporting

Knowledge & Collaboration

Process Automation

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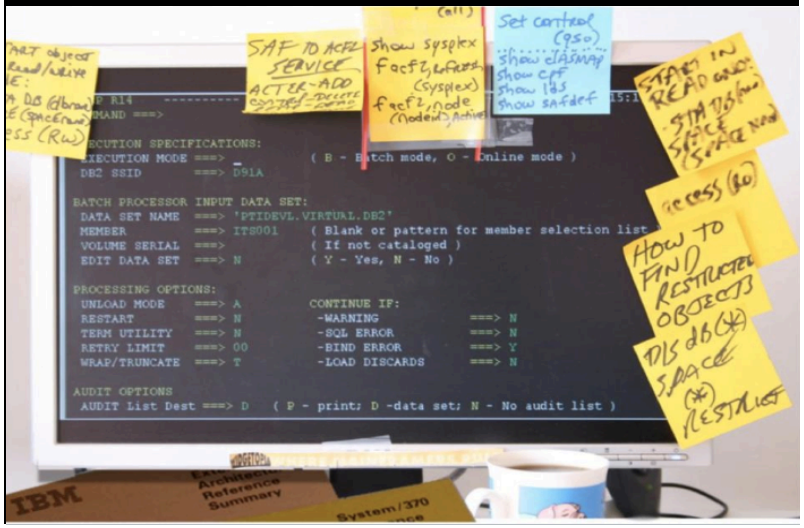
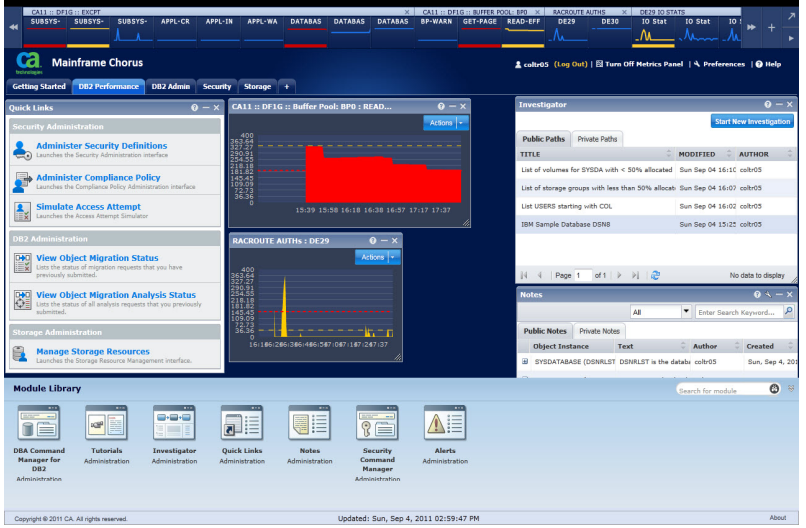
enhancing productivity
CA Chorus

No more "same old thing…."



CA Chorus Changes Everything



A new and fundamentally different user interaction model

- Based on **how people do their jobs**, *not how they use specific products*
- Provides rich features and data visualization in a web-based workspace
- Not just a bunch of disconnected GUIs
  - True integration of products, process, and data

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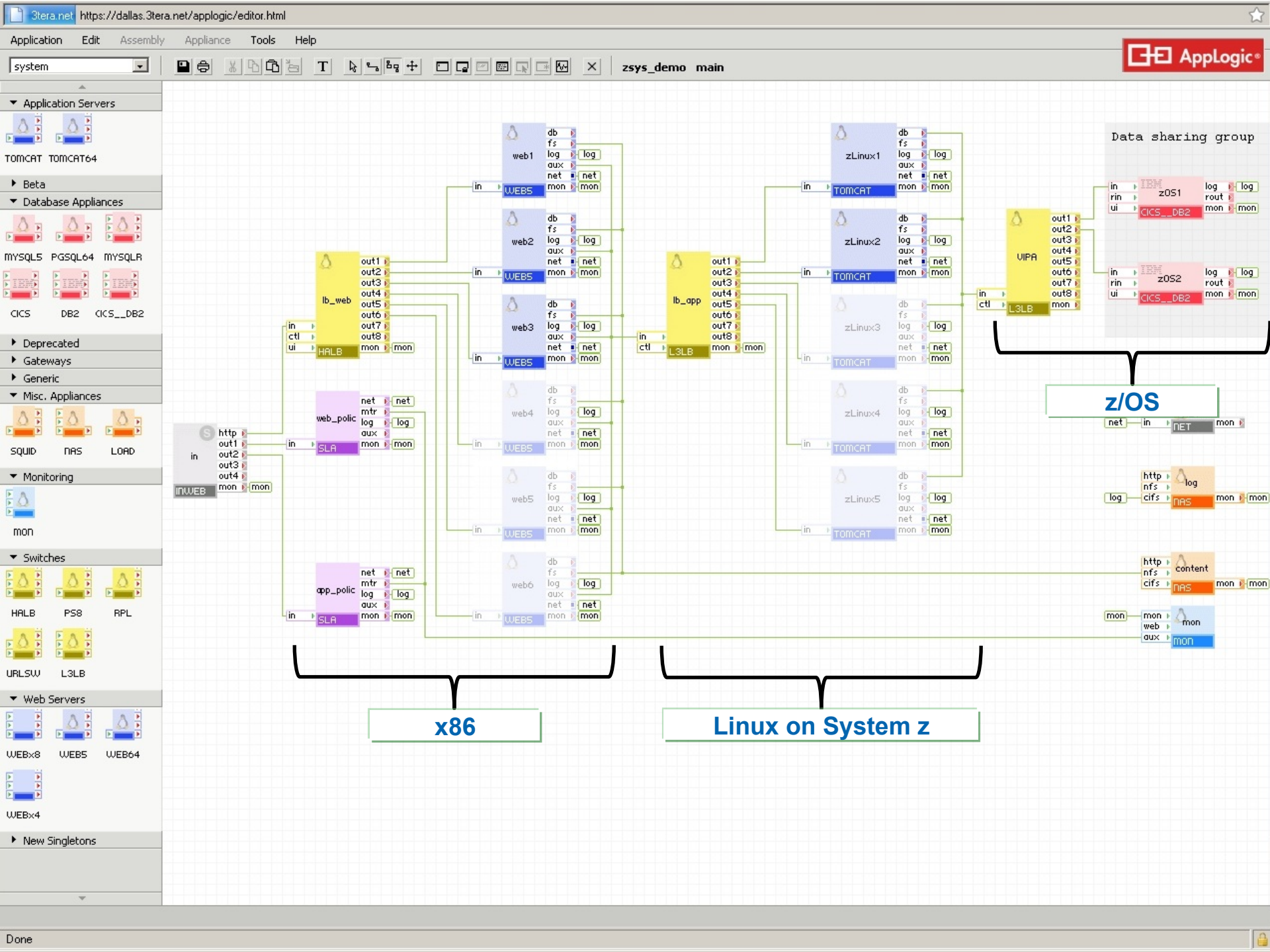
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https://dallas.3tera.net/applogic/editor.html
Application
Edit
Assembly
Appliance
Tools
Help
system
zsys_demo main
AppLogic
Application Servers
TOMCAT
TOMCAT64
Beta
Database Appliances
MYSQL5
PGSQL64
MYSQLR
CICS
DB2
CICS__DB2
Deprecated
Gateways
Generic
Misc. Appliances
SQUID
NAS
LOAD
Monitoring
mon
Switches
HALB
PS8
RPL
URLSW
L3LB
Web Servers
WEBx8
WEB5
WEB64
WEBx4
New Singletons
Data sharing group
z/OS
x86
Linux on System z
Done

provisioning the enterprise
extending CA AppLogic to support System z

- Quickly provision, deploy and manage cloud applications on System z as part of a hybrid cloud computing infrastructure
- A single System z server will be able to host dozens of AppLogic grids, each with hundreds or thousands of virtual appliances
- Energy efficiency - single System z server can host thousands of Linux on System z applications, effectively replacing the need for hundreds of distributed servers and their required network fabric
- Easy connectivity to z/OS resident application and database servers
- System z cloud deployment combines cost reduction and agility with massive scalability and reliability

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consolidate to Linux on System z
the CA solution portfolio

CA Cross Enterprise APM

Application Performance Management

CA VM:Secure
CA VM:Director
CA VM:Archiver

CA SiteMinder Web Access
CA Access Control
CA Top Secret® for z/VM
CA ACF2™ for z/VM
CA VM:Secure

CA Gen™

CA Workload Automation Agents

Application Development

Provisioning

Security

Workload Automation

Performance Management

CA VM:Manager Suite for Linux on System z

z/VM Management

Data Protection

CA VM:Operator™

Event Automation

zVPS™ Performance Suite

UPSTREAM for Linux on System z

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application provisioning and deployment
the AppLogic way

- With cloud-like provisioning:
  - IT provides a pool of resources: approved platforms, delivery models, hardware and software combinations
  - Application architects and developers construct services and applications from basic IT building blocks
  - Some building blocks can execute on different underlying platforms with different delivery models:
    - Java, Tomcat, JBOSS, WAS, DB servers
    - On-premise, off-premise
  - Others are constrained to specific platforms/systems:
    - CICS, IMS
  - IT delivers flexibility to the business by adapting building blocks to what's most cost efficient at a particular time
- Monitoring and automation policy can be built in at application build time, not applied later
  - When infrastructure is changed, the tools, agents, methods automatically change

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monitoring the enterprise

- Current monitoring technology is excellent for monitoring and measuring at the platform and subsystem levels
- The capability to integrate monitoring of applications, subsystems and disparate platforms is an area where investment and invention is needed:
  - Discovery, aggregation, “technical impedance matching”
- It’s not enough to just gather, aggregate and present data, more capabilities are needed:
  - Synthesis of business metrics: “failed customer interactions,” “orders per second,” “IT cost per order”
  - Infrastructure and application analytics: long term trending and capacity management, profiling to provide early warning of failures, and recognition of application misuse

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proactive management across the enterprise
monitoring the mainframe, distributed, and cloud

```
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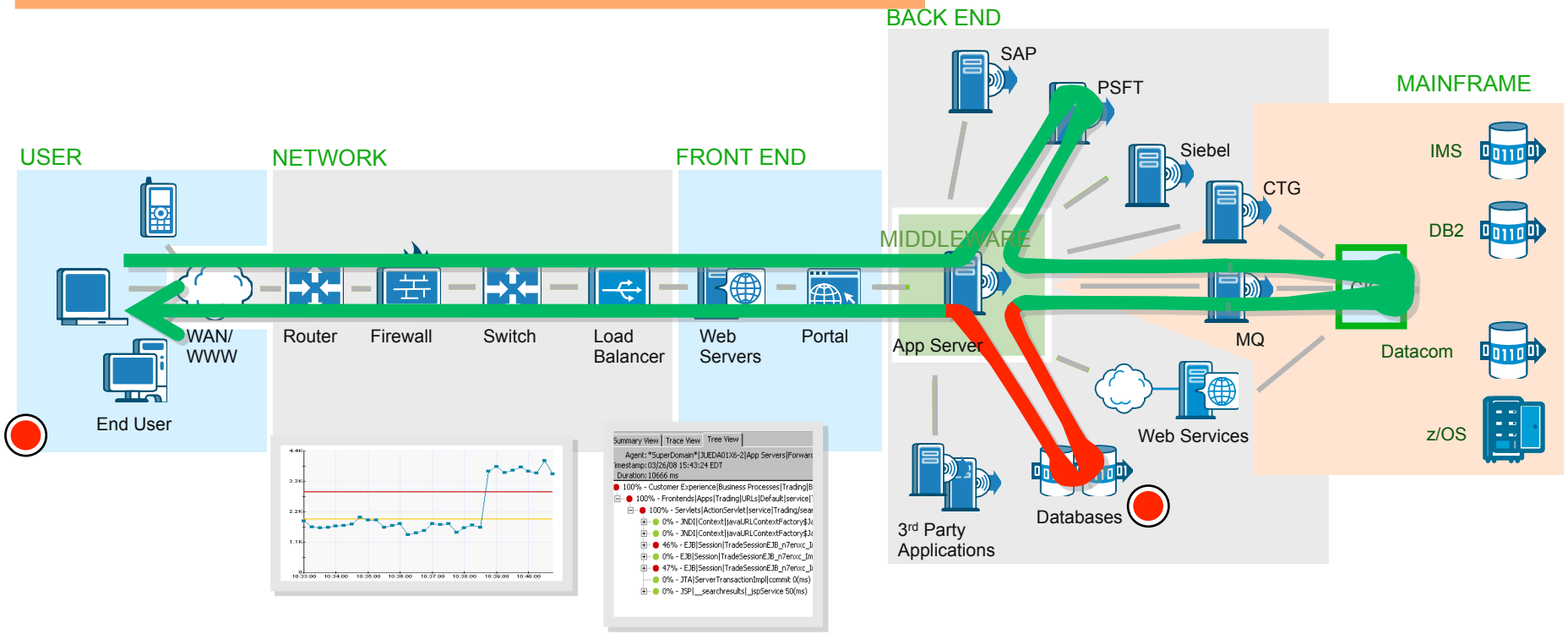

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enterprise IT automation
managing the infrastructure and the applications

- Automation is a key capability used by IT to improve the efficiency, reliability and availability of IT services
- Many installations have decades of automated scripts and actions that are just part of the fabric
- "Crossing the platform divide" is often done with bespoke extensions to various products – resulting in fragility that is often exposed when upgrading the automation products or the underlying middleware
- Automation should take advantage of underlying technology to delivery qualities of service
  - Greatest common factor rather than least common denominator

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enterprise IT automation
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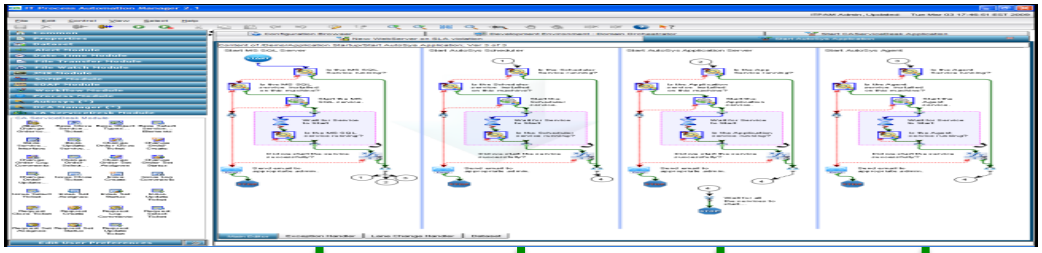
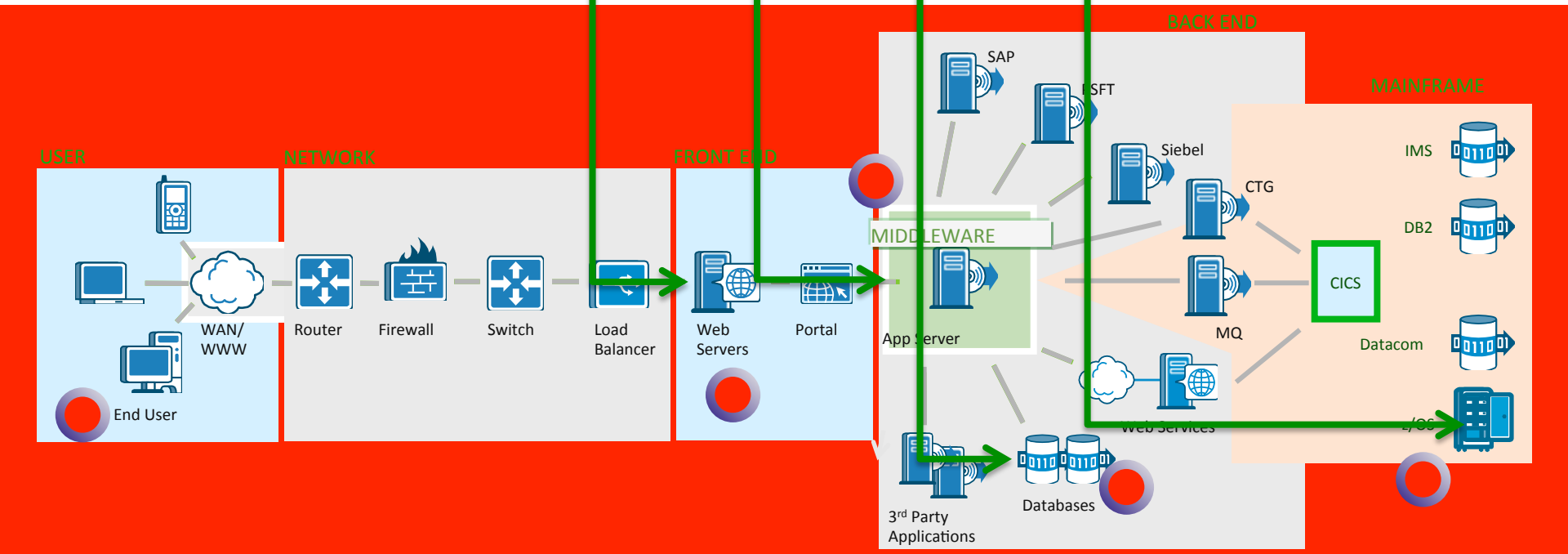
enterprise IT automation
CA OPS/MVS and CA PAz





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enterprise workload automation

- Workload automation has traditionally led the way on enterprise-wide operations
- The roles and functions of workload automation, IT automation and business process orchestration continue to converge and intertwine
- Metrics, SLAs and critical path management for each of these need to be monitored and converge
  - Corrections must occur in real time
- The discipline must expand beyond script based to enable more policy based management

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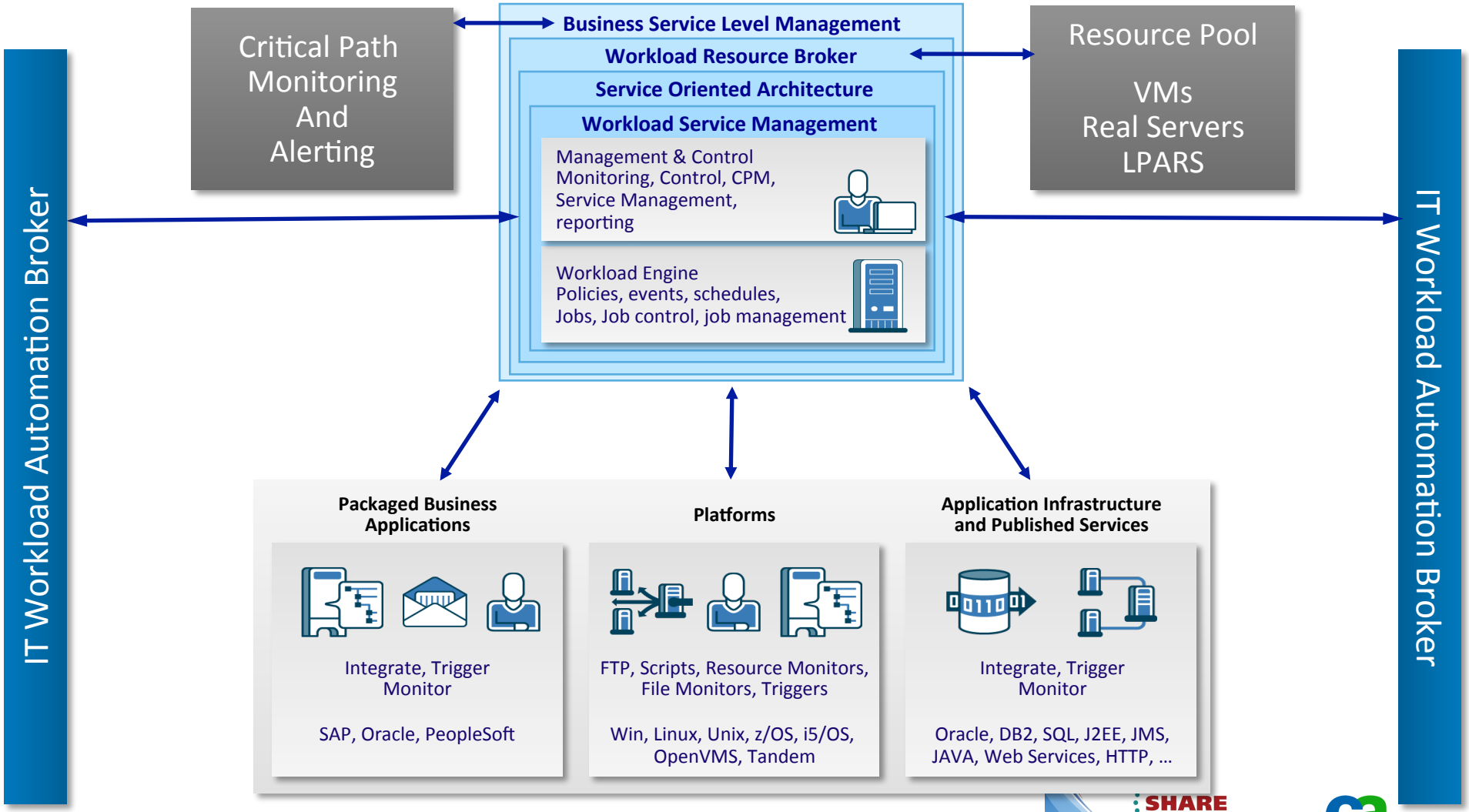
automation convergence



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your IT challenge….are you ready?

Can you unlock innovation while managing complexity, controlling cost, and mitigating risk?

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summary

- To move to the next level of performance IT must reorganize away from silo (hardware/software/subsystem) delivery to align with the delivery of business services
- Systems management remains important, but business service/ application management is paramount
- By focusing on transforming to a service delivery model, IT can define elements of the infrastructure that can be flexibly provisioned, enabling better cost management
- Virtualization, cloud, and xaaS are steps along the way to Business Service Innovation
- The business, application development, IT, and IT vendors must collaborate to build a platform to best serve both business and technical needs

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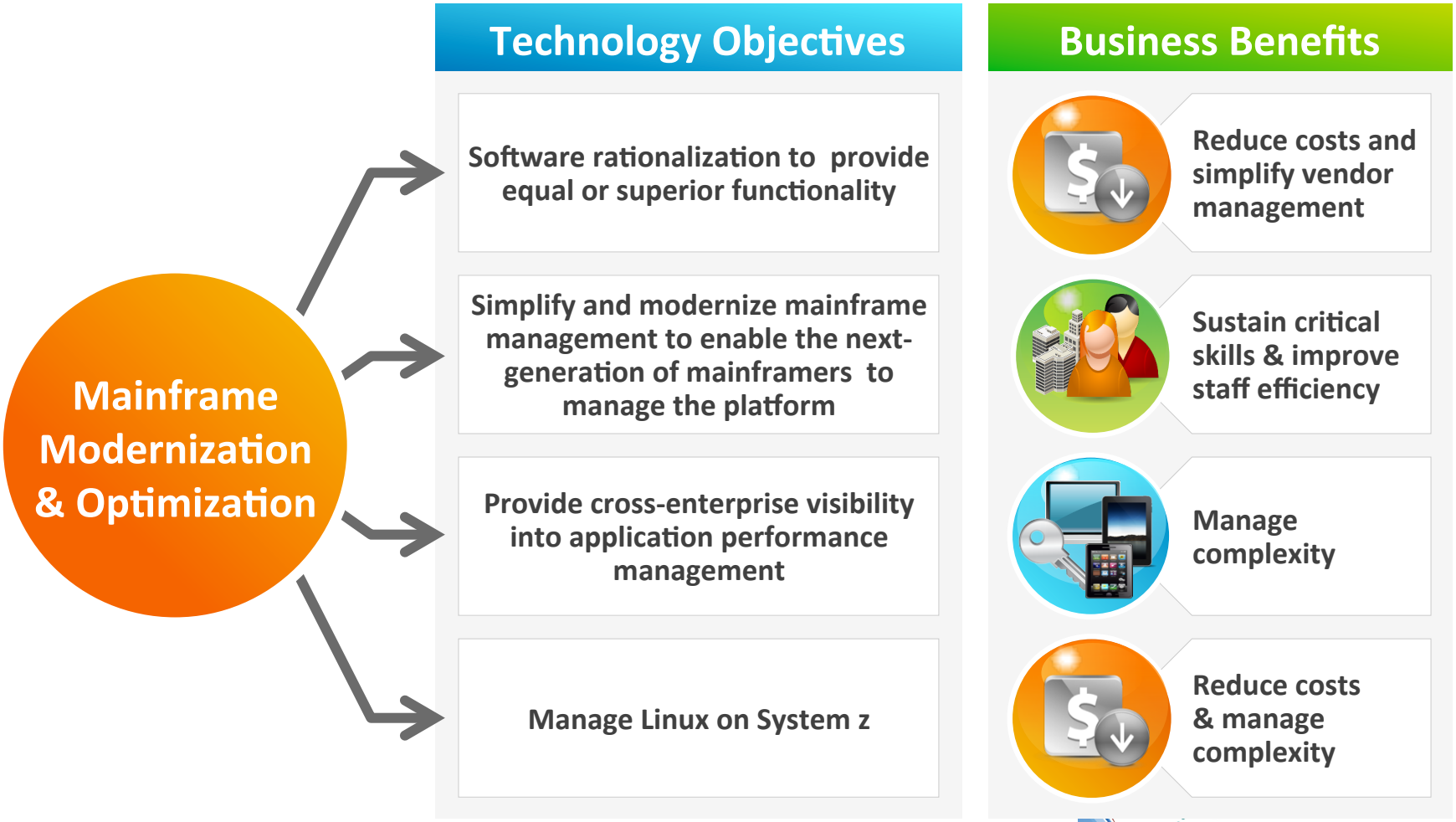
transforming IT management
mainframe modernization and optimization

Where CA Technologies Mainframe Solutions can help you today



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questions?

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thank you

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