



Achieving Greater Efficiency – Managing IT and Software Assets

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Director, Tivoli Product Management



Multiple forces are driving a transformation of the data center

*Business and technology
change is accelerating*

Data Center

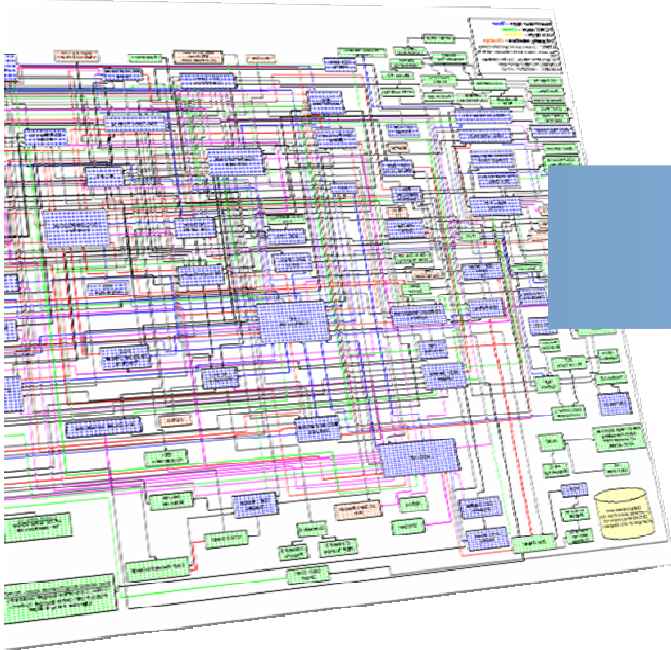
*Operational complexity has
IT at a break point*

Requiring a shift in how IT is managed

Managing resources vs. managing services

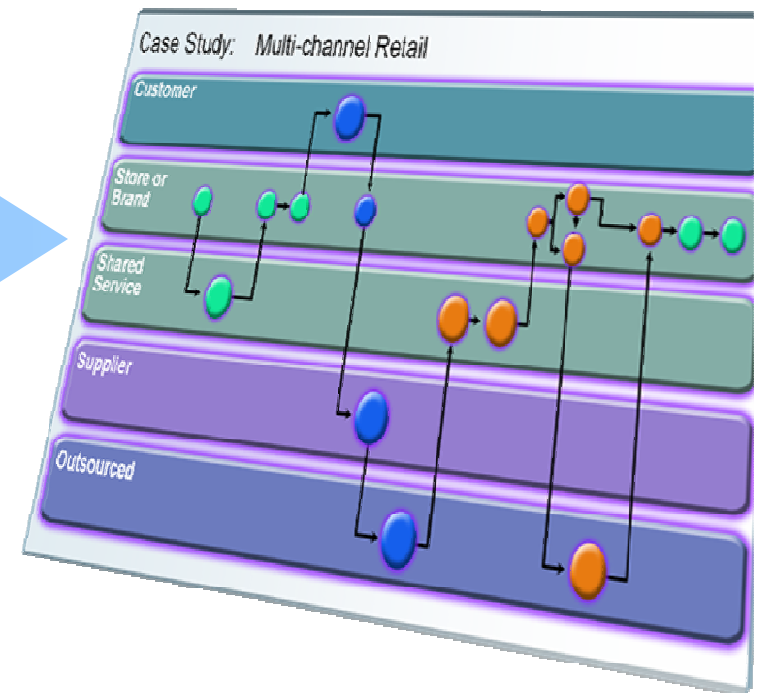
Old Thinking...

IT manages IT **resources** that support “the business”



New Thinking...

IT manages **services** that drive business **results**



IBM Service Management

VISIBILITY



See Your Business Services & Processes

CONTROL



Manage Your Risk & Compliance

AUTOMATION



Build Agility into Your Operations

IBM Service Management & the NEDC

Supporting clients in all stages of adoption

Simplified



Drives IT efficiency

- Physical consolidation and optimization
- Virtualization of individual systems
- Systems, network and energy management

Shared



Rapid deployment of new infrastructure and services

- Highly virtualized resource pools – “ensembles”
- Integrated IT service management
- Green by design

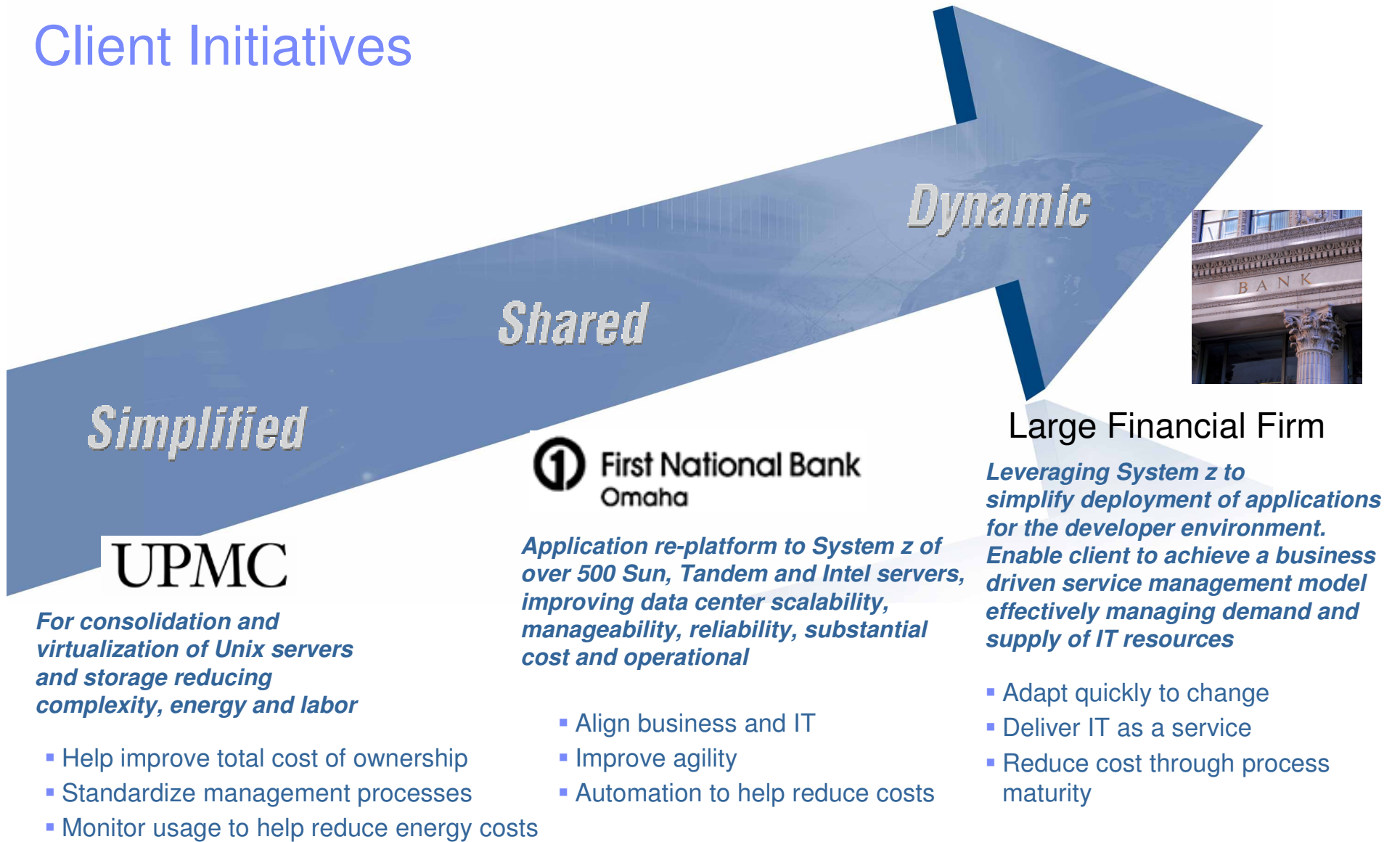
Dynamic



Highly responsive and business goal driven

- Virtualization of IT as a service - “cloud”
- Business-driven service management
- Service oriented delivery of IT

Client Initiatives



IBM System z – strategic to the transformation



Costs & Service Delivery

Built in elasticity for just-in-time capacity and scalability – 900k+ users & terabytes of data

Virtualized “share everything” environment can enable 100% utilization without degradation

Avoidance of issues related to network latency



Business Resiliency & Security

“Mean time between Failure” – measured in decades vs. months

Fewer points of intrusion

Help reduce complexity with centralized management model for secure operations

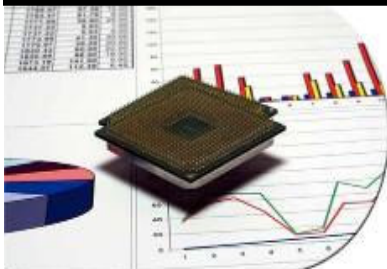


Energy Efficiency

Energy efficient consuming 80% less than distributed solutions

Less hardware, floor space and energy consumption

Near-linear scalability



Changing application models

Ecosystem supporting open compute standards and source software

Enables transparent multi-tenancy of applications

Provides a hybrid SaaS hosting environment

The mainframe for cloud computing

"It's a mainframe model where things run together but in isolation. The issue is whether the machines will bear up under the load of diverse work or will they grind down and you'll need to provision another machine. You need reliability, security, auditing, privacy, data integrity, automation and full isolation."

- Steve Mills, SWG Sr VP



- Strong TCO
- Energy efficient
- Near-linear scalability
- Capacity management & upgrades on demand
- Delivers a specialized IT environment
- Virtualizes from the silicon to the app
- Enables transparent multi-tenancy of applications
- Improves performance
- Comprehensive industry-leading security
- Enables seamless reliability

The financial benefits of System z are compelling

Recent IBM TCO study performed for a client ...

- Potential for dramatic reductions in software expense
- Potential reductions in power and cooling
 - No additional Energy Costs on z by activating 1 IFL
 - No additional floor space by activating 1 IFL
- Potential for dramatic improvement in service and disaster recovery
- Increased processor utilization
- A true “utility” solution



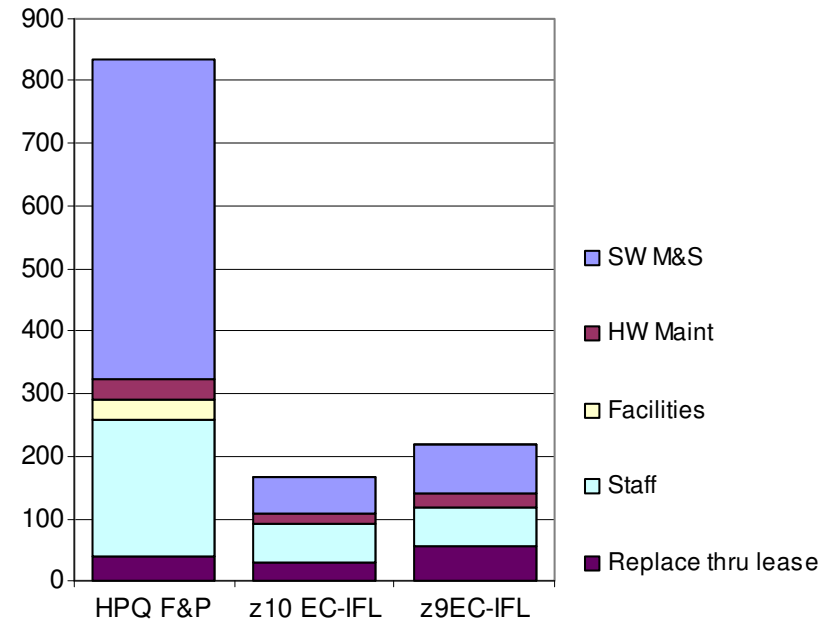
...and the savings will improve over time with z.

Insurance Company IT Costs

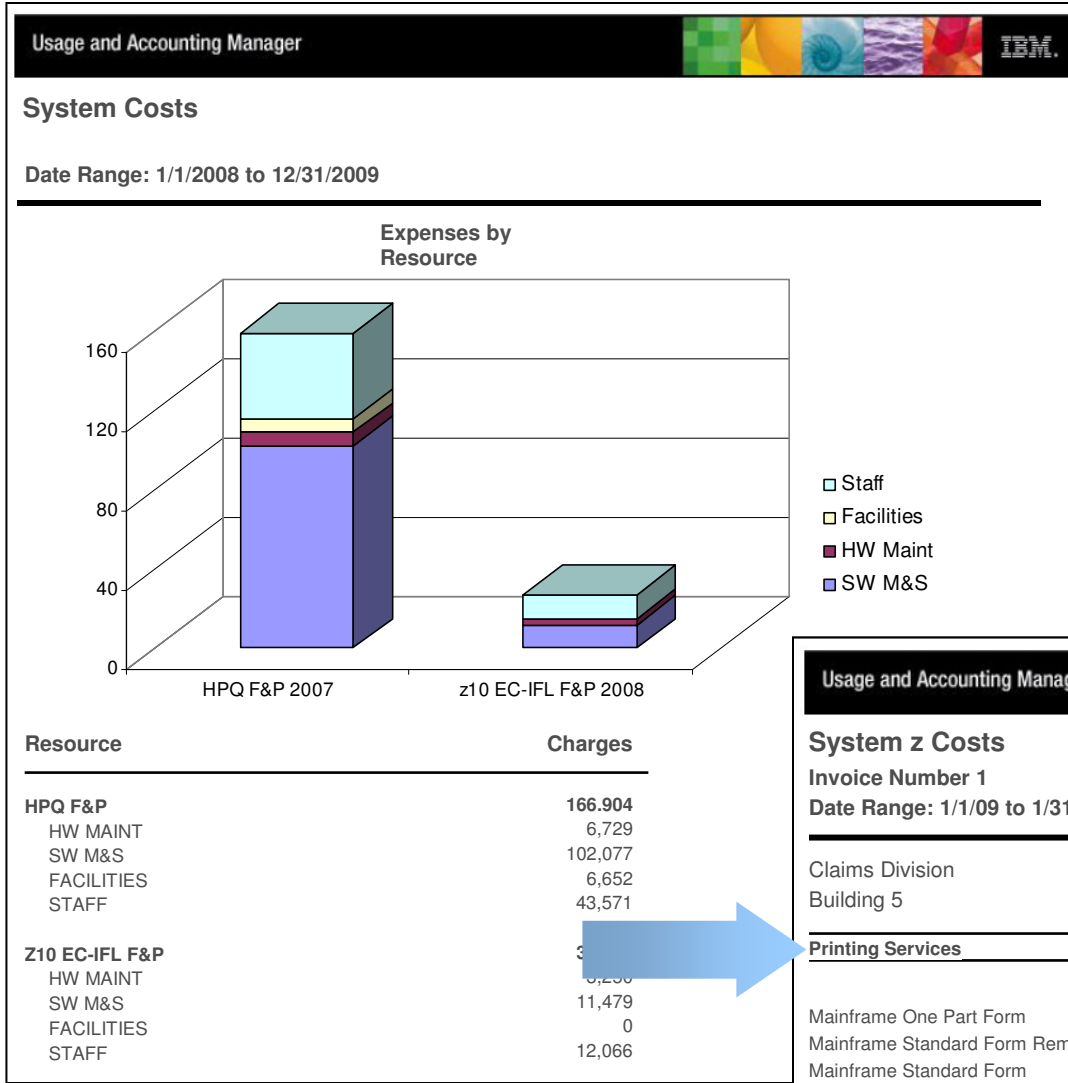
File & Print Servers

5-Year Total IT Cost Analysis

\$600-700K Savings with System z



Helping ensure benefits are achieved



IBM Tivoli

Usage & Accounting Manager Decision Support for z/OS

Enabling IT operations to establish appropriate allocation methodologies to measure and manage IT cost and provide granular reporting and invoicing capabilities

Usage and Accounting Manager

System z Costs


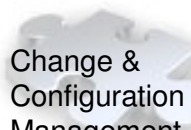

Invoice Number 1
Date Range: 1/1/09 to 1/31/09

Claims Division
Building 5

Printing Services

	Units	Rate	Charge
Mainframe One Part Form	1,512	0.55	831.60
Mainframe Standard Form Remote	52	0.55	28.60
Mainframe Standard Form	2,251	0.55	1,238.05
Mainframe Print			2,098.25

IBM expects System z to be the end-to-end service management hub to enable a dynamic data center – Competitors do not !

AREA	DISCIPLINE	KEY CAPABILITY	ONLY IBM
 Operational Management	Performance Monitoring	<u>Consolidated end-to-end</u> business service and IT operations management user interface	✓
	Workload Automation	<u>Workload balancing for virtualized environments</u> and automated critical path management to optimize throughput for critical services	✓
	Availability Management	<u>High availability solutions for Linux on System z</u> and <u>cross-platform high availability and disaster recovery capabilities</u>	✓
	Financial Management	<u>Linux on z and z/OS usage and accounting</u> tracking and reporting	✓
	Enterprise Asset Management	<u>Integrated enterprise and IT asset management</u>	✓
	Security Management	<u>Single point of control</u> for user security access, control, auditing and compliance across the enterprise	✓
 Change & Configuration Management	Discovery & Relationship Mapping	<u>Automated System z dependency mapping and discovery</u> of server resources and application relationships to manage change	✓
	Configuration Management	<u>Comprehensive federated database</u> that provides a <u>single topology</u> for the enterprise – both distributed and System z	✓
 Process Management	Incident & Problem Management	<u>Service desk integration with enterprise asset management</u>	✓
	Change & Release Management	Visibility into the impact of implementation tasks to <u>identify potential conflicts</u> with the change window across the enterprise	✓
	Business Continuity Management	Ability to <u>plan, design and test for enterprise-wide disaster recovery</u> with integration to the operational management solutions	✓
	Business Service Management	<u>Event management integration</u> with IBM and 3 rd party event monitors	✓

Investing in System z to support data center transformation



Linux on System z Management

- Linux on System z is growing at 49% per year and 17% of all mainframe processors have a Linux on system z partition.
- Only IBM delivered an enterprise ITSM infrastructure, including system and workload automation as well as provisioning and deployment solutions for Linux on System z



Asset & Financial Management

- The acquisition and integration of MRO and CIMS Labs has positioned IBM as the sole provider of zOS and Linux on z usage accounting and software license compliance management



Green Data Center

- IBM's Project Big Green dedicating \$1 billion aimed at reducing IT Data Center power consumption over the next three to five years.
- Tivoli Monitoring for Energy Management is the only product that provides visualization on energy usage and thermal conditions across Linux on z and Distributed



SOA Management

- IBM invested in a comprehensive SOA service lifecycle management solution running on System z, critical for cloud computing. Tivoli provides operational visibility into SOA applications and Network appliances with tight integration to Security and Identity management that is unmatched by competition



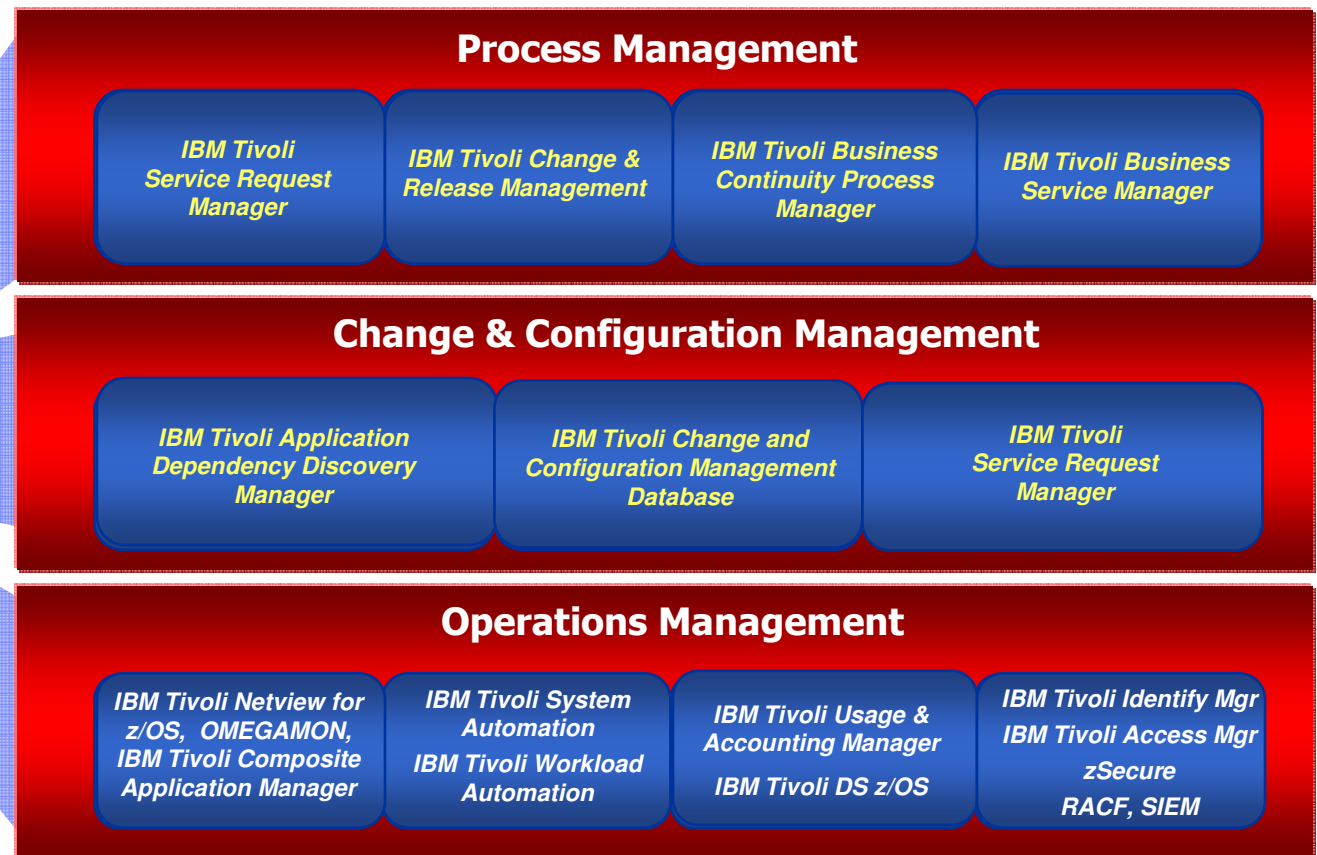
End-to-End Security Management

- IBM is spending \$1.5 billion on security research and integration for our security offerings.
- This investment enable end-to-end security and compliance management across multiple platforms with broadest security capabilities on System z in the market.

IBM Tivoli Service Management Center for System z

Integrated solutions to manage your enterprise end-to-end

IBM **Tivoli** Service Management for System z



Recognizing the benefits and capturing the value

Swiss Re



Implemented end-to-end service management solution that monitors mainframe and distributed environments, and automatically identifies and fixes performance issues



Implemented service management for the entire production workload based on IBM Tivoli Workload Scheduler - end-to-end from System z. Drives 4 million z/OS workloads and 35,000 distributed workloads from a single graphical user interface



IBM Tivoli
Service Management Center for System z



Casas Bahia centralized operations on System z, leveraging Tivoli monitoring solutions, to support rapid growth and reduce IT costs



Colecem is leveraging Tivoli monitoring and automation solutions to manage SAP running Linux on System z



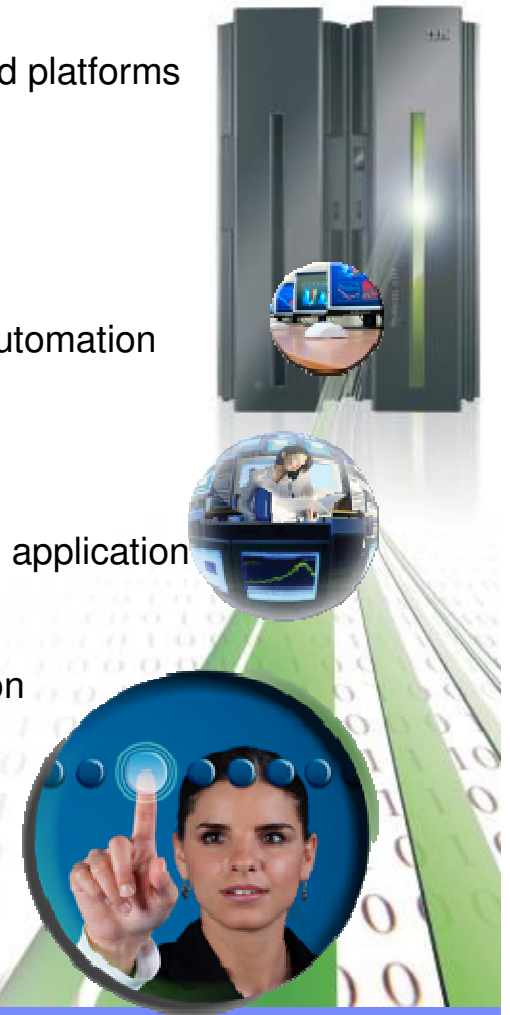
"With IBM's help, Fifth Third is working toward having an 'on-demand' infrastructure that gives us the flexibility to move resources, on-the-fly, to where we need them." - Jim Scott

IBM Tivoli Service Management Center for System z

Meeting today's challenges and positioning clients for tomorrow

- **Unique advantages that address many of today's operational challenges**
 - Hub for managing services that span heterogeneous operating systems and platforms
 - Integrated IBM Tivoli z/OS and Linux on System z management solutions
 - Utilize virtualization and ability to consolidate workloads
 - Unified means for z practitioners to have enhanced visibility, control and automation

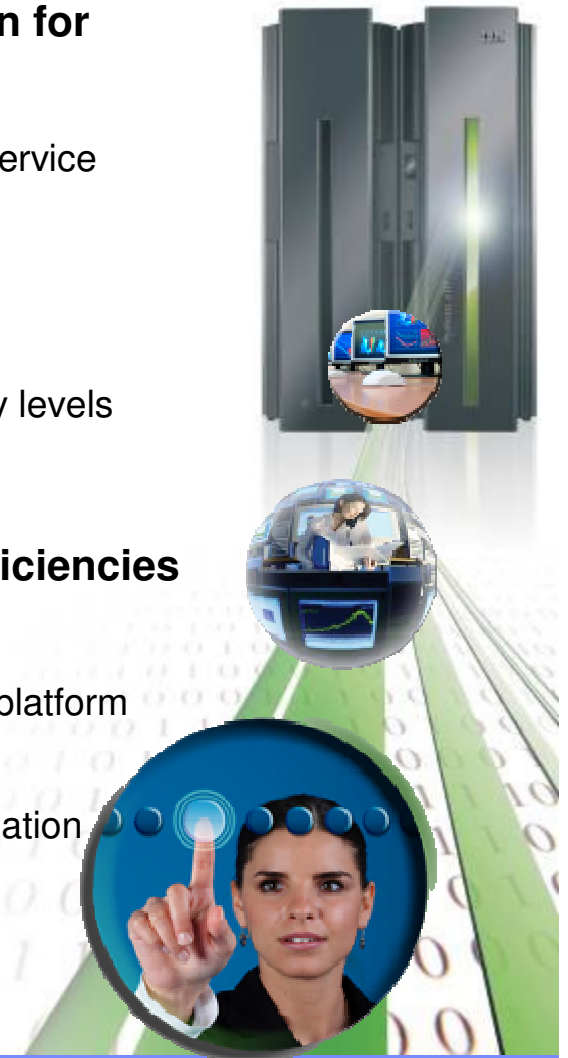
- **Enabling a dynamic and highly efficient service delivery model**
 - Manage a service landscape running on System z from bare metal up to the application as if it were homogeneous
 - Dynamic provisioning, configuration and de-provisioning complete application landscapes
 - Exploits the multi-OS environment and elasticity of the platform to support the delivery of SaaS and a cloud user experience



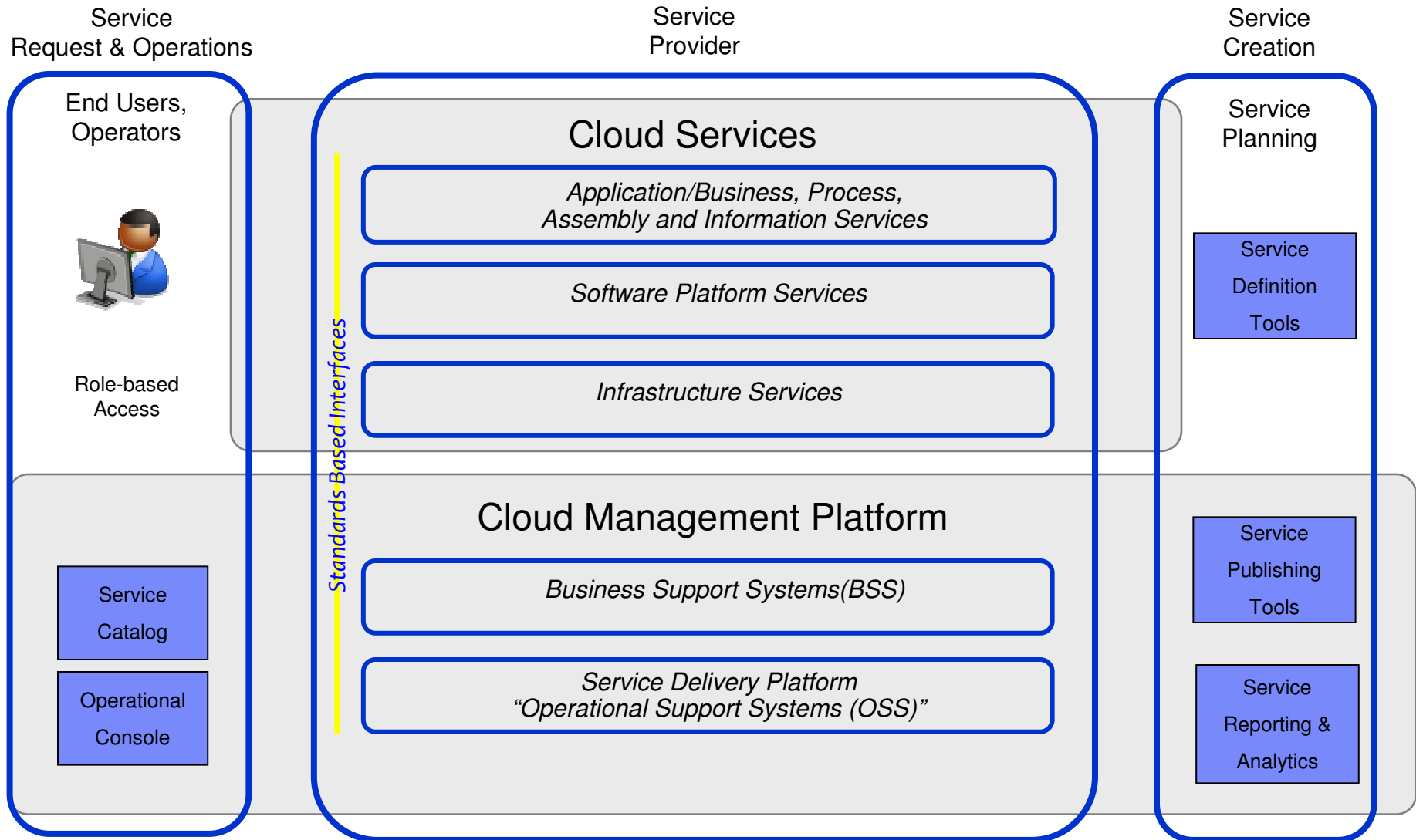
Service Lifecycle Management

A core discipline for delivering a cloud-user experience

- **IBM Service Management Center for System z is a foundation for providing Service Lifecycle Management functionality**
 - IT resources and their complexity is abstracted from the user under the service concepts (encapsulate, hide and abstract)
 - Focus on what the services provide as opposed to how the services are implemented, hosted, or managed
 - IT resources/services are delivered with high quality and driven by quality levels
- **System z platforms provides operational advantages and efficiencies for delivering service lifecycle management value**
 - IT efficiency and resiliency of business services can be delivered from a platform that is highly available, secure and fault tolerant
 - IT infrastructure and the above IT Operating Environment layers consolidation and simplification is driven from System z



Architectural Model for Cloud Computing



Service Lifecycle Management supported by TSAM

Subscribe to Service

- Request a service
- “Sign” Contract

Deploy Service

- Request Driven Provisioning including Management Agents and Best Practices
- Application / Service On Boarding
- Self-service

Offer Service

- Register Services and Resources
- Add to Service Catalog

Manage Operation of Service

- Visualize all aggregated information about situations and affected services
- Control operations and changes
- Event handling
- Automate activities to execute changes
- Include charge-back

Define Service

- Scope of Service
- SLAs
- Topologies, Best Practices Management Templates

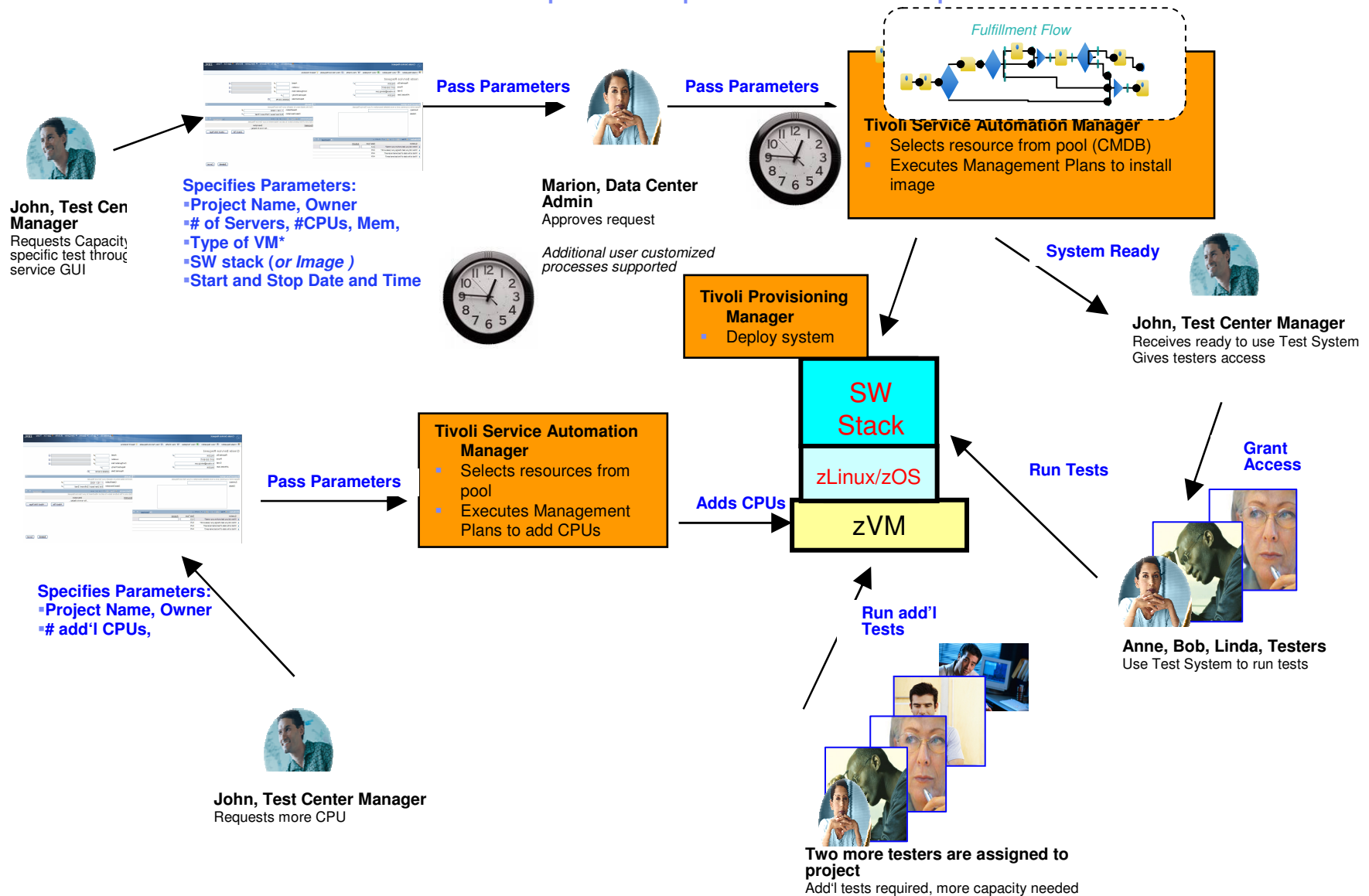


Terminate Service

- Controlled Clean-up

Tivoli Services Automation Manager

Scenario: Test Center with complex request fulfillment process + reservation



* Stack can be PowerVM, VMware based as well

Questions



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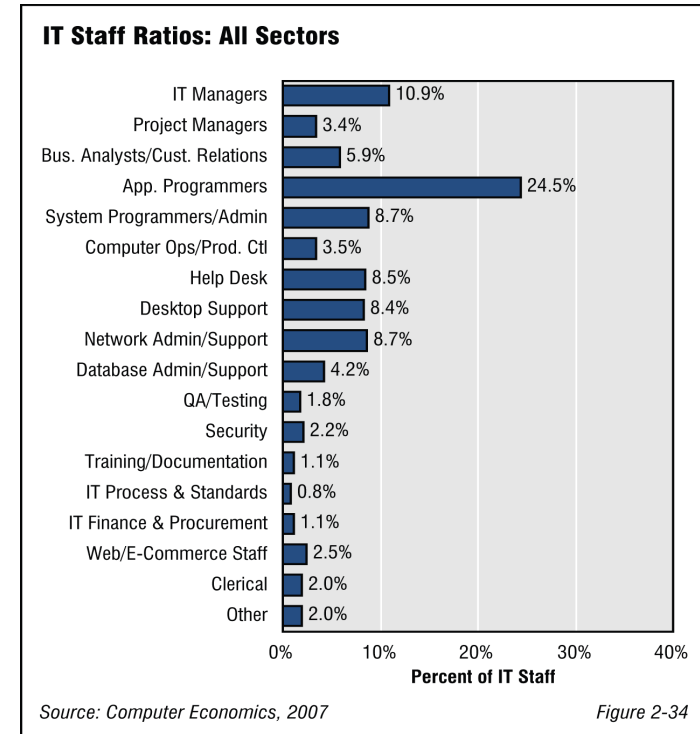
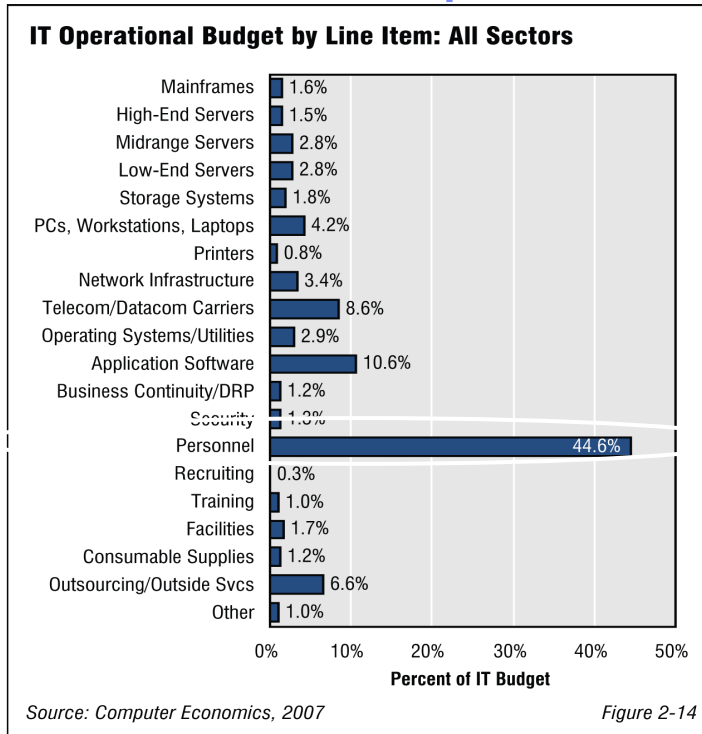
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The costs of IT Operations



Personnel represents the largest percentage of operational costs in the enterprise