

zEnterprise.

A New Dimension in Computing

IBM zEnterprise Value for Business Workloads and Applications

Becoming Responsive, Flexible and Competitive



Agenda

Recognizing the Workloads

The evolution of the consumer transaction

The Value of IBM zEnterprise™

What the computer does vs. what the computer is

Real Customers – Real Value

Our initial learning from studies done with clients like you

Discussion and Questions

A few thoughts about a way forward



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Around the world, industries are re-shaping business models to meet the demands of a sophisticated consumer and fiercely competitive economy

Smart Work for a Smarter Planet

	<p>Smarter Money: Using advanced analytics to turn a numerical ocean into actionable insight and intelligence.</p>	<p>Mobile Banking: Having the ability to check balances, move money across accounts and initiate payment to a vendor, all from your cellular phone</p>
	<p>Smarter Shopping: Information exchange and collaboration, offer a tremendous opportunity to strengthen customer loyalty.</p>	<p>Upromise®: Providing the ability to shop online at over 100 Web sites, stores, restaurants while earning and accumulating savings for college education</p>
	<p>Smart Thinking: Taking advantage of a new wealth of information to be able to make more intelligent decisions and rise to the top.</p>	<p>'Single Moments of Truth': Insurance, Banking, Retail, Travel & transportation are all industries that want a single view of all information for Customer Care & Insight</p>
	<p>Smarter Healthcare: Smarter healthcare starts with the individual. Changing the way patient information is used to treat the "whole" person, not parts at a time.</p>	<p>Medical Home: Primary care physicians act as "coaches," leading a team that manages a patient's wellness, preventive and chronic care needs</p>
	<p>Smarter Cloud: Conserve energy. Consolidate resources. With mandates like these, we have to be smarter about accessing, processing and storing data.</p>	<p>Online Universities: Providing millions the ability to remotely take courses from several colleges and universities simultaneously, consolidating resources and skills</p>

These new business models are driving requirements for complex changes into the components of a traditional workload or application

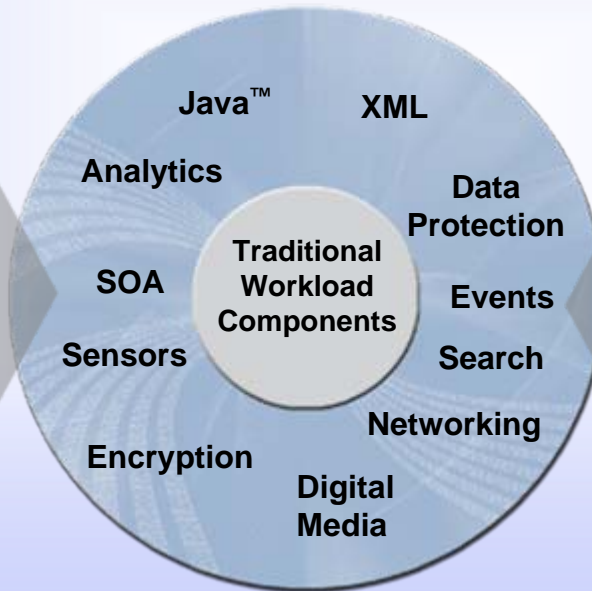
What is a workload?

The relationship between a **group** applications and/or systems related across several business functions to satisfy one or more business processes. e.g. Retail Merchandising, On-line Banking

Evolving & Emerging Workload Components

General Purpose Enterprise systems

Optimized for a broad set of applications or components



Special Purpose systems and optimizers

Optimized for a specific set of applications or components

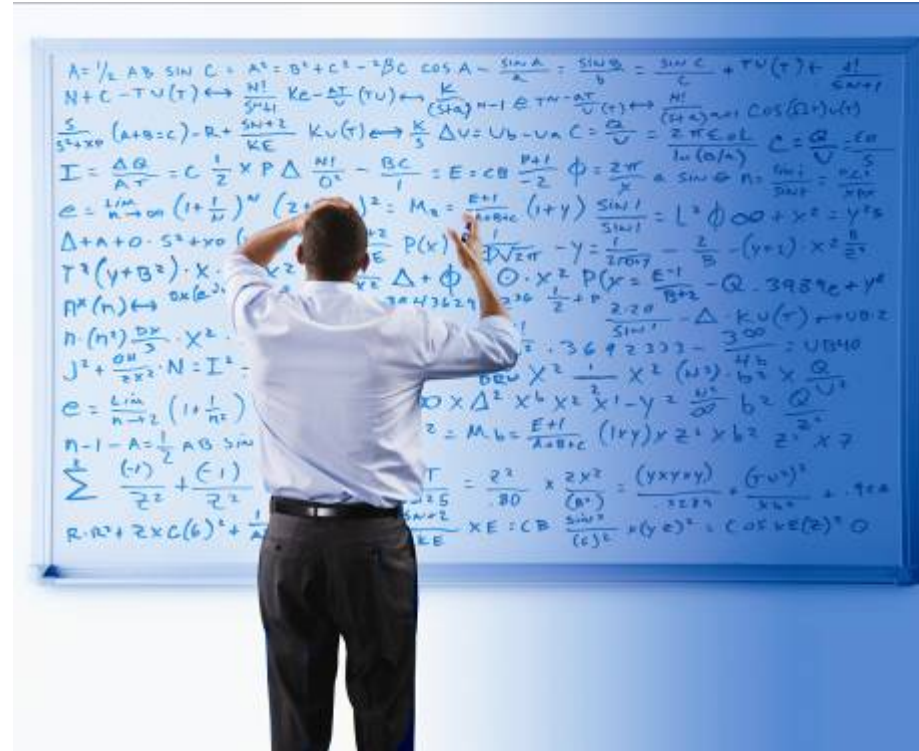
Future requirements include complete application integration in an optimal fashion

Information Technology must transform to be Responsive, Flexible, Secure and Cost Competitive

While in theory, all workloads could run on a single platform...

... truthfully all platforms have a role to play

- You need the **data serving strengths** of the mainframe, the security, the resiliency, the scalability
- You need the **computational strength** of Power Systems™, for HPC and large scale application serving
- You need the **breadth** of IBM System x®, for front end **applications**, special function servers and a myriad of niche applications



Creating a single platform infrastructure would be highly inefficient, ineffective and unsustainable in the long term

zEnterprise provides the foundation for the “smart” infrastructure on which we can build the workloads of today and tomorrow

They are workloads that.....

- Rely on data serving and application components on IBM System z®
- Solutions that need to leverage strengths of System z... Security, Reliability, Availability.
- Have application components on Power or x86 but require a higher level of integration capabilities and efficiency



....and / or.....

- Reside in low utilization / development environments
- Can be made more efficient through consolidation
- Can be optimized by using the newest virtualization technology

....but also may.....

- Reside in complex multi-platform IT environments
- Require flexible development and test infrastructure
- Require simplified, integrated policy and management

Workloads we see every day match these characteristics

Banking	Insurance	Retail	Healthcare	Telco	Public Sector
<i>Core Banking</i>	<i>Internet Rate Quotes</i>	<i>On-line Catalog</i>	<i>Patient Care Systems</i>	<i>Business Support Systems (BSS)</i>	<i>Electronic Tax Reporting</i>
<i>Wholesale Banking – Payments</i>	<i>Policy Sales & Management (e.g. Life, Annuity, Auto)</i>	<i>Supply Chain Management</i>	<i>On– line Claims Submission & Payments</i>	<i>Operation Support System (OSS)</i>	<i>Web based Social Security</i>
<i>Customer Care & Insight</i>	<i>Claims Processing</i>	<i>Customer Analysis</i>			



These workloads have recognizable patterns

Core Applications	
Database (z) ✓ DB2® for z/OS®, IMS™	Database (z) ✓ DB2 for z/OS ✓ Oracle on Linux for z
Application (z) ✓ CICS® ✓ COBOL ✓ WebSphere®	Application (z) ✓ WebSphere

SAP	
Database (z) ✓ DB2 for z/OS	Database (z) ✓ DB2 for z/OS
Application (z) ✓ Linux® for z	Application (x86) ✓ Linux for x86
Database (z) ✓ DB2 for z/OS	
Application (Power) ✓ AIX®	

Multi-Tier Web Serving	
Database (z) •DB2 for z/OS	Database (z) •DB2 for z/OS
Application (z) •WebSphere	Application (Power / UNIX) •WebSphere •JBoss
Application (x86) •WebSphere •Apache / Tomcat	
Database (z) •DB2 for z/OS, IMS	Database (z) •DB2 for z/OS or IMS
Transaction Processing (z) •CICS, MQ	Application (Power / UNIX) •WebSphere •JBoss
Application (Power / UNIX) •WebSphere •JBoss •WebLogic	Presentation (x86) •WebSphere •Apache / Tomcat
Presentation (x86) •WebSphere •Windows	

Data Warehouse & Analytics	
Master Data Management	
Database (z) ▪ DB2 for z/OS	
Application (z) ▪ WebSphere MDM (AIX, Linux on z)	
Analytics	
▪ System z/OS	
▪ DB2	
▪ Cognos® (Soon!)	
▪ SAS	
▪ Linux for System z	
▪ Cognos	
▪ SPSS	
▪ InfoSphere™ Warehouse	

Agenda

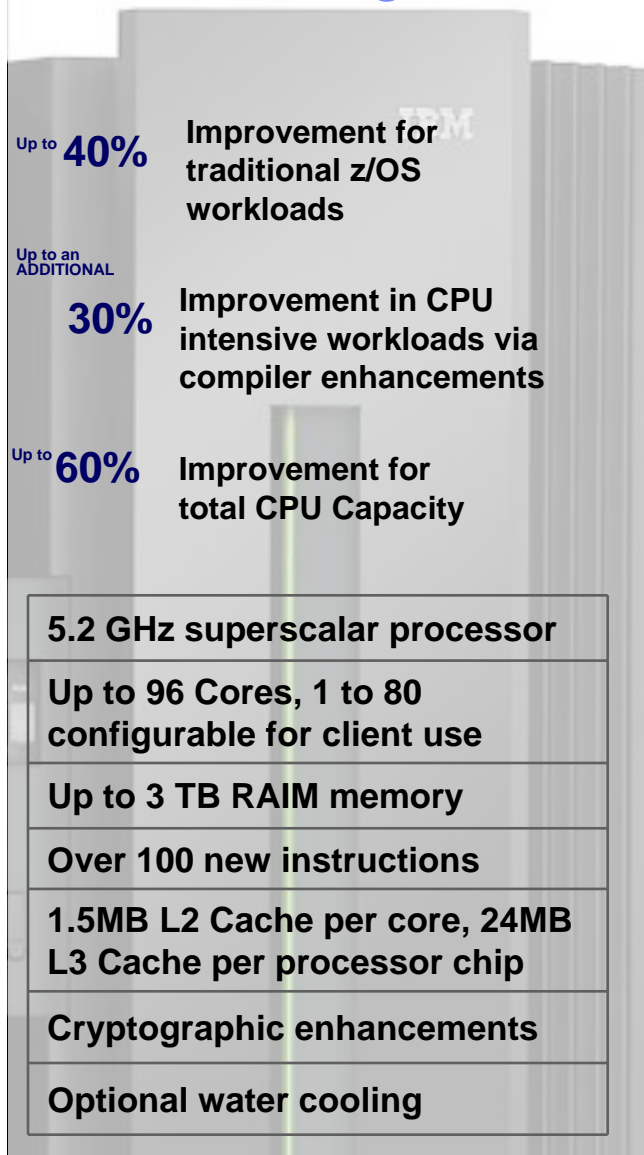
The Value of zEnterprise

What the computer does vs. what the computer is



**zEnterprise.
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The Value begins at the heart of zEnterprise.....



SAP

- Speed, Scalability and Memory/Cache enhancements allow large SAP systems to continue to grow effectively at a competitive cost.
- Security on System z increasingly provides the safest data serving capability in the industry from which to build a flexible SAP infrastructure

Key to Banking, Retail, Manufacturing

Multi-Tier Web Serving

- New instructions, combined with new compilers ensures a place for System z as a scalable and available platform for Web growth and flexibility

Key to Banking, Insurance, Government, Healthcare

Business Intelligence / Data Warehousing

- Increased Speed, Memory architecture and processor capacity opens avenues to extend the value of DB2 in the analytics arena

Key Cross Industry

..... reaching across the levels of architecture.....

Optimize System z Business Workloads and Applications

- Extending System z as a hosting environment for a **broader set of workloads**
- **Increasing the application inventory** on the platform
- Enhancing System z by **extending the value** proposition across the application portfolio
- Extending **superior manageability** and **QoSs** for **distributed applications accessing data or applications hosted on System z**, facilitating lower overall cost, while improving user experience
- Providing **competitive price-performance** for new and existing workloads

IBM Blades –POWER7™ and System X (Statement of Direction)

- Provide **Choice** for application hosting
 - Choose the IT platform that best fits the needs of a workload at the lowest cost
- Provide **Speed** for deployment
 - Liberate the lines of business enabling them to focus on Functional Requirements for expanding and growing their contribution to the bottom line – typically, get function out faster to generate revenue

IBM Smart Analytics Optimizer

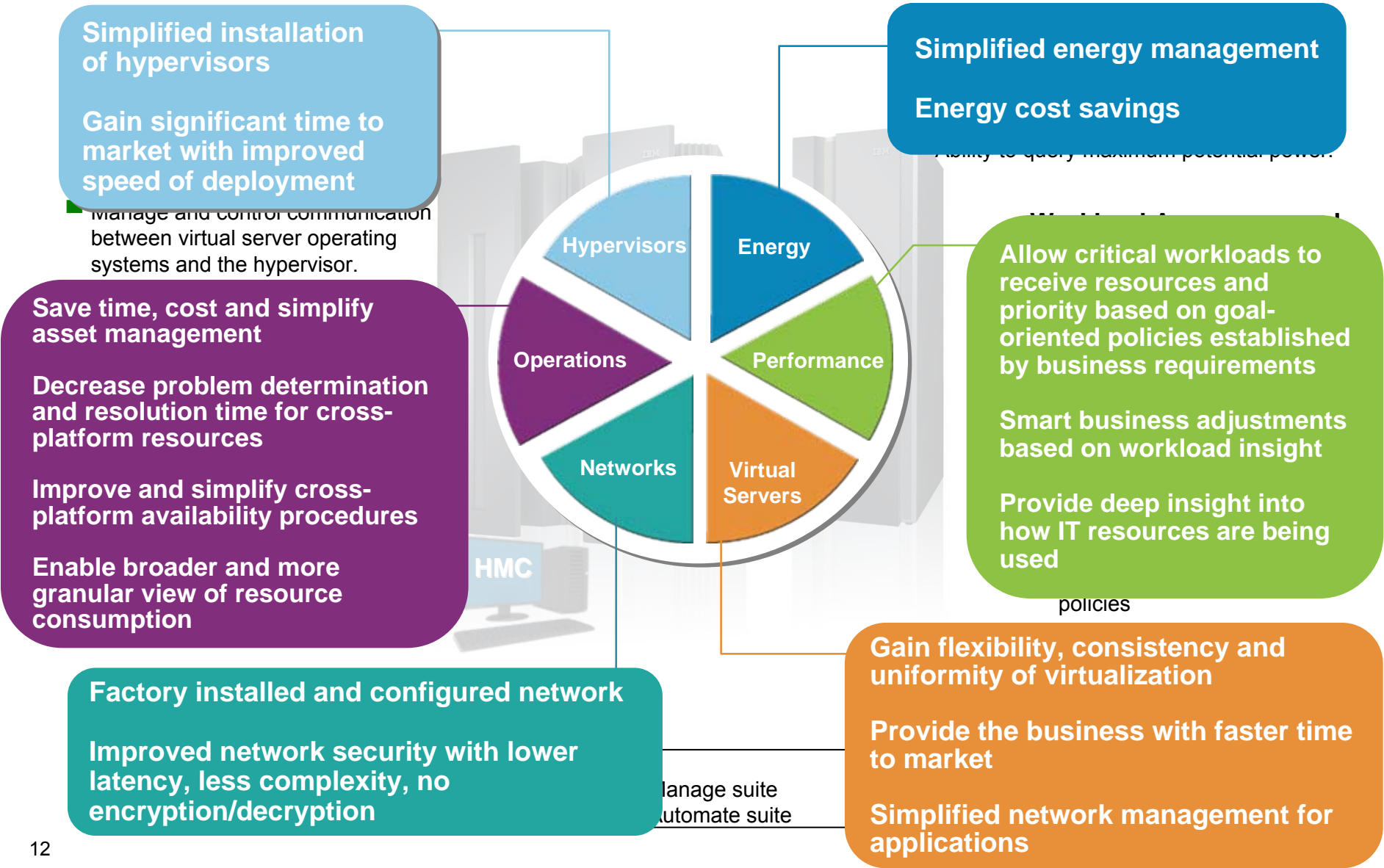
*Add a new dimension to traditional workloads, extending most DB2 application to become a source of **information and analytics**.*

IBM WebSphere DataPower® (Statement of Direction)

*Simplifying and enhancing **Service Oriented Architecture** by providing connectivity, gateway functions, data transformation, protocol bridging, and intelligent load distribution*



... and made possible by the Unified Resource Manager



Agenda

Real Customers – Real Value

Our initial learning from studies done with clients like you



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Retail Client using SAP Financials (today)

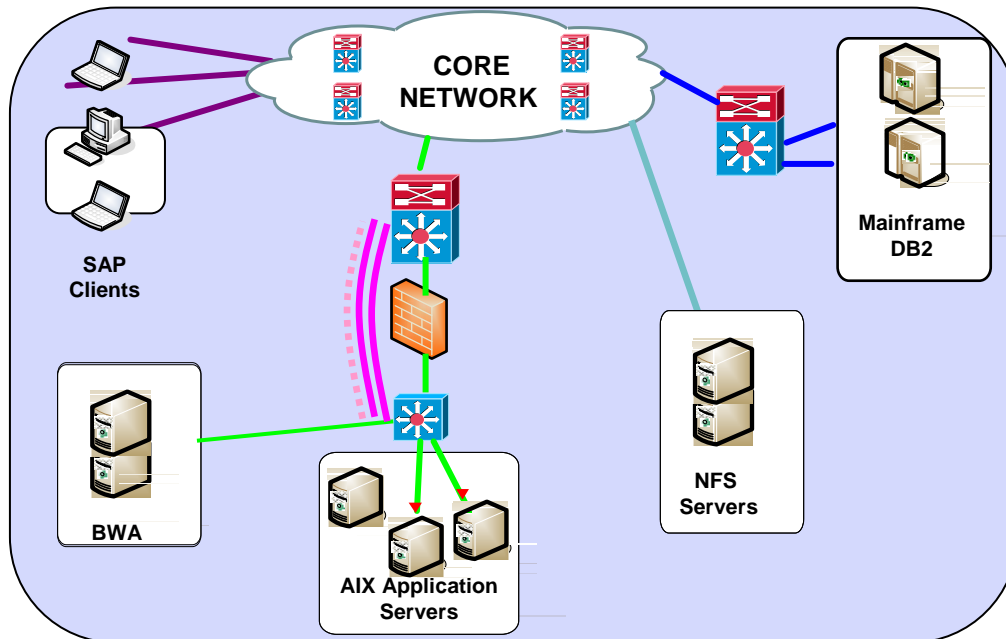


Today's Environment

SAP Financial modules are run with data serving on DB2 for z/OS and the application servers are spread across several Power based systems; also currently using SAP Business Warehouse Accelerator.

Challenges/Issues

- Coordination of application across platforms is resource intensive and vulnerable to several points of impact.
- Too many network hops from one platform to another to get data
- Hardware microcode updates cannot be applied without an outage
- Different monitoring software tools per server type with different software process for site failovers



Retail Client using SAP Financials (tomorrow)

The Environment with zEnterprise

SAP data server on DB2 z/OS with application serving on POWER7 Blades in zBX integrated in a zEnterprise system.

*"We think we can anticipate a reduction of **12 hops** across the network down to **1**, saving network cost and improving our application performance!"*
Client IT Management

Business Advantage

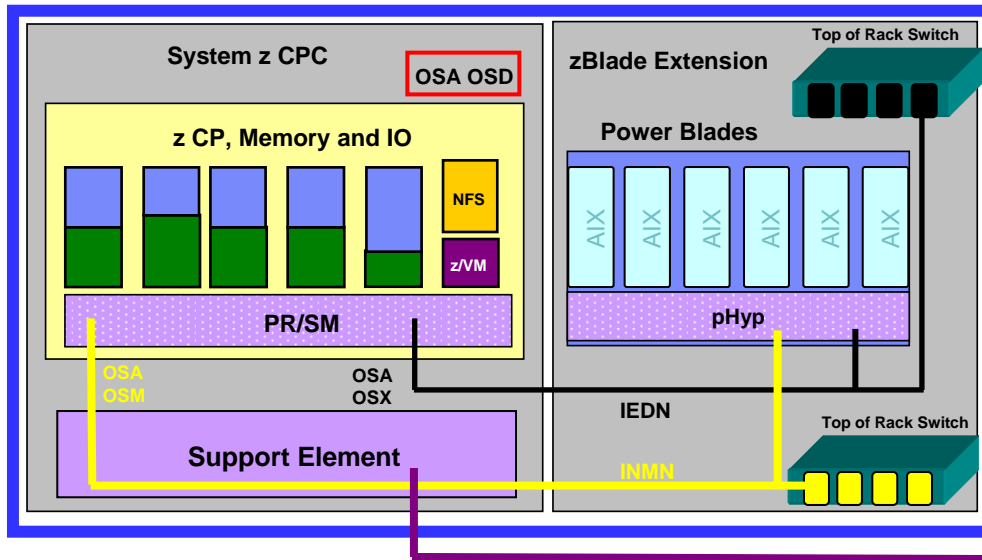
- Ensuring business controls, such as security and compliance, are achieved on a consistent basis across the applications and platforms

Operational Advantage

- Ability to monitor and manage a critical application end to end from a workload view
- Ability to make adjustments in available resources, apply maintenance, manage server availability and handle business peaks with true application insulation
- Potential of up to 60% savings identified for the SAP workload across power, cooling and floor space

Organizational Advantage

- Insulate application development teams from Infrastructure technology
- Consolidation of skills thru consistent tools



BWA

HMC
Ensemble Manager



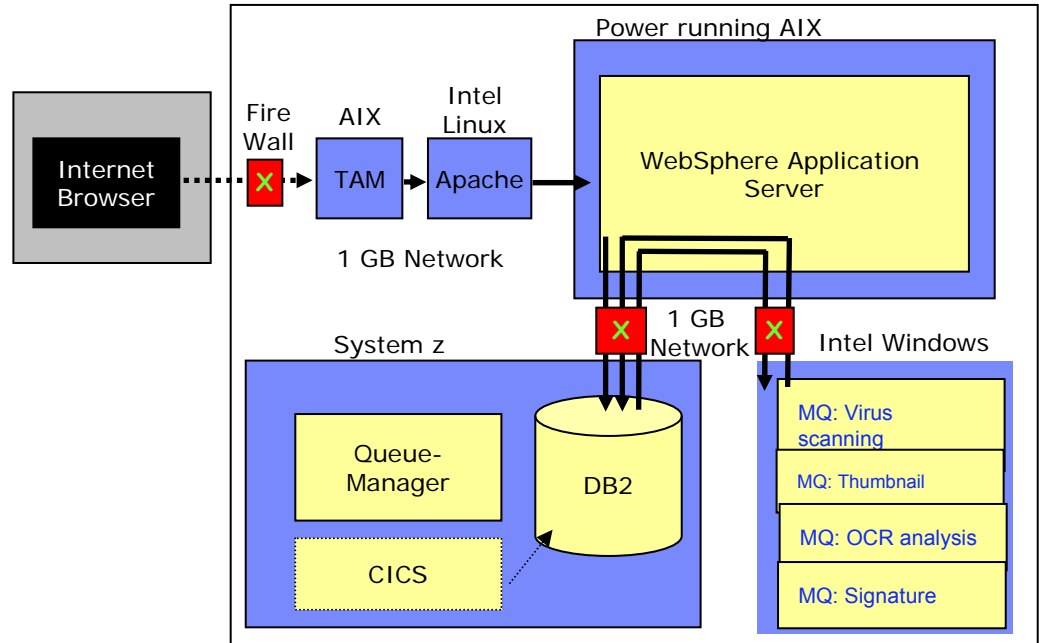
German Public Sector Client: Internet Tax Application (today)

Today's Environment

Database on DB2 z/OS and WebSphere application servers on Power and Web servers on x86 running Linux and Microsoft® Windows®

Challenges/Issues

- Not able to respond quickly for need of new function.
- High cost of staff required to maintain multi-tier application



German Public Sector Client: Internet Tax Application (tomorrow)

The Environment with zEnterprise

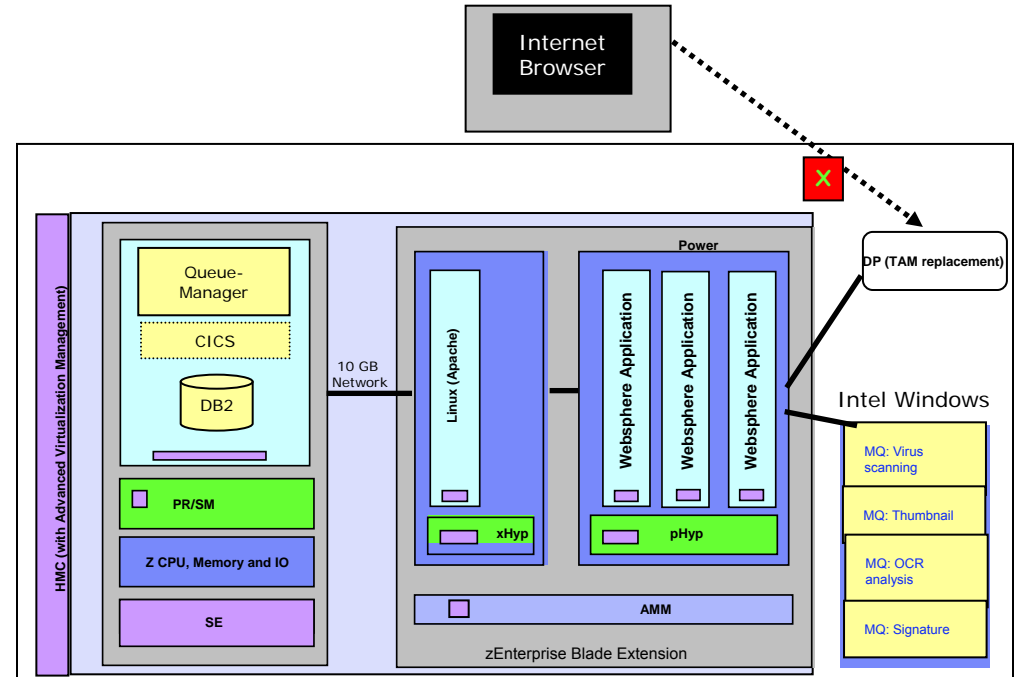
Database on DB2 z/OS with application serving on POWER7 Blades in zBX, utilizing IBM WebSphere DataPower for Web service enablement.

Operational Advantage

- Improved Network speed (10 GB Network in zEnterprise vs. 1 GB network in datacenter - that means 10x increase)
- Horizontal workload management view for one specific application across many platforms (Linux on Intel, AIX, z/OS)

Organizational Advantage

- Everything is pre tested, pre configured, etc. for their mission critical application this is a large benefit



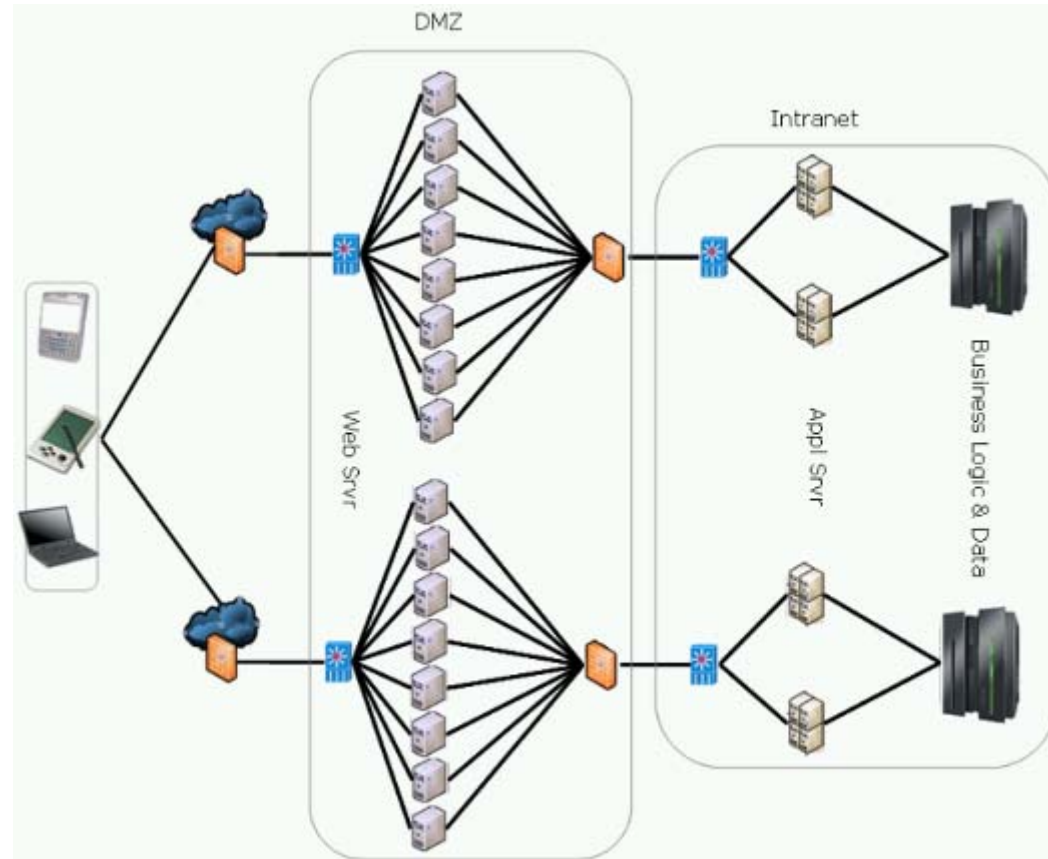
Large European Bank – Internet Banking (today)

Today's Environment

System z with CICS, IMS and DB2 for data serving and core business logic, using WebSphere on Power for additional business logic and presentation capability; Web servers on System x Blades running Linux

Challenges/Issues

- Extremely complex environment
- Majority of maintenance applied to systems manually
- Several single points of failure
- Bank presence in multiple countries across Europe and are maintaining different infrastructures based on acquisitions



Large European Bank – Internet Banking (tomorrow)

The Environment with zEnterprise

Integrate core business logic and data serving on System z (IMS/CICS/DB2) with IBM Blades; POWER 7 Blades running WebSphere and System x Blades as virtualized Linux based Web Servers, all managed in a zBX.

Business Advantage

Simplification and standardization of the environment will allow bank to be more flexible responsive to local country banks adding functionality and growing banking revenue.

Operational Advantage

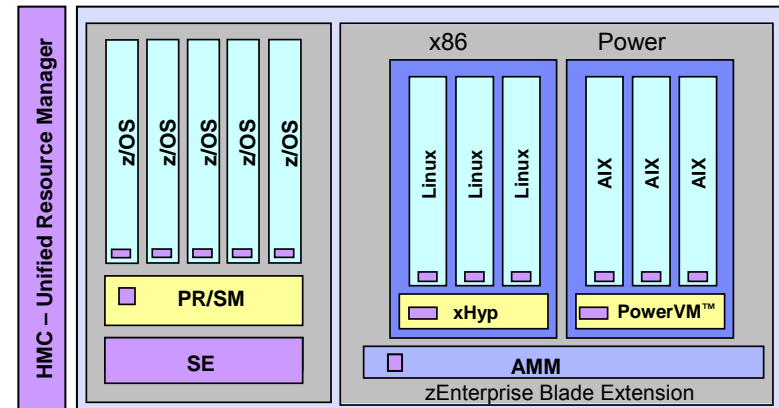
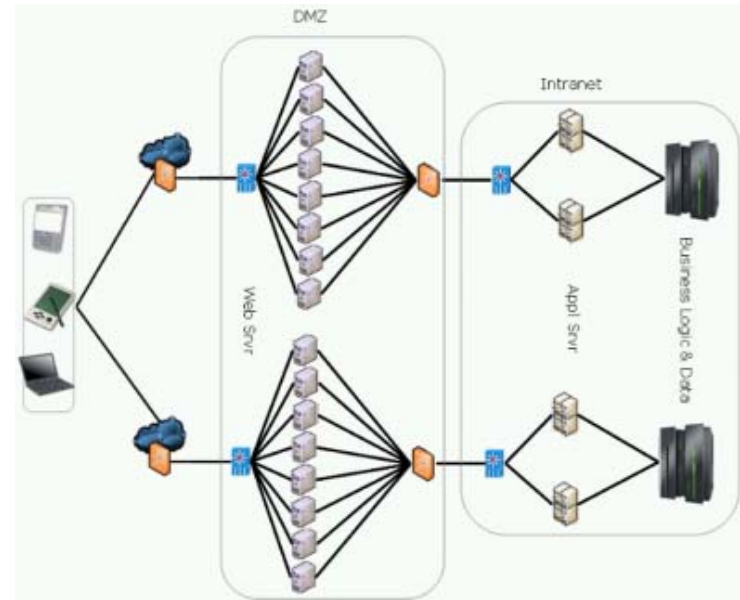
A single management and policy framework across Web serving, transactions and database to lower the cost of enterprise computing

Mainframe Quality of Service characteristics will be extended to application servers to manage risks

The dynamic resource management of the mainframe is extended to all devices within a multi-tier architecture to improve quality of services

Organizational Advantage

Reduce level of manual coordination, freeing up staff to train and focus on backlog of business application function development



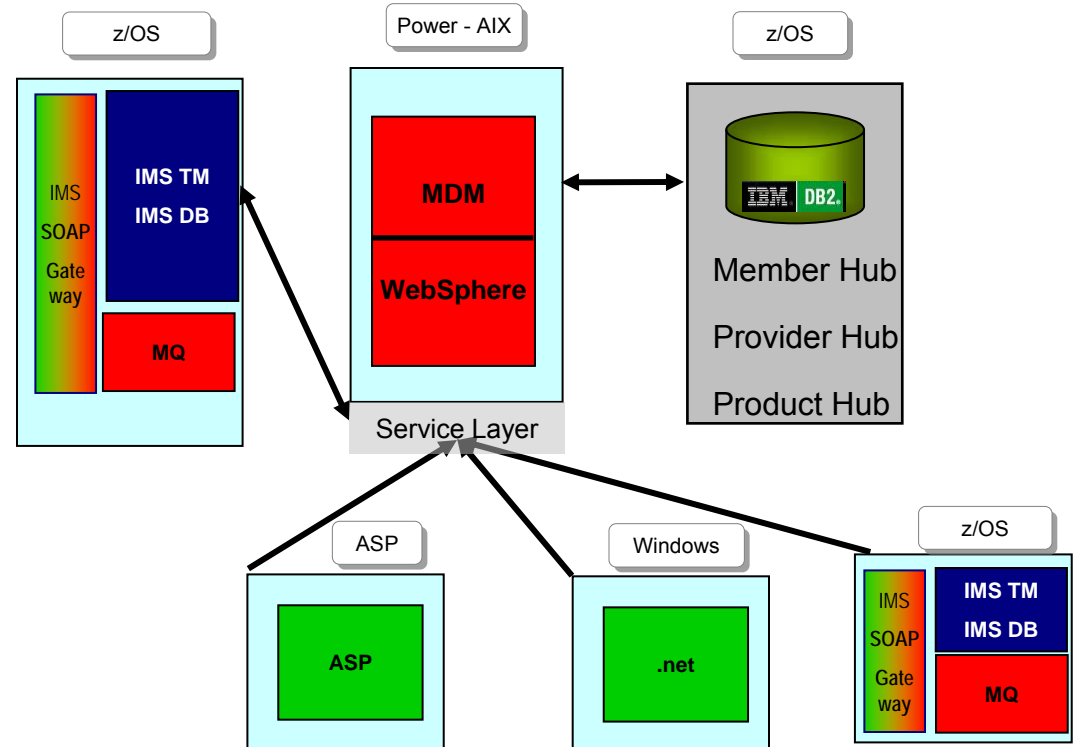
US Healthcare Provider – Information Hubs (today)

Today's Environment

Master Data Management Server is running on AIX today on Power servers front ending multiple data stores on DB2 on z/OS and IMS

Challenges/Issues

- Client grew through acquisitions and has multiple systems – looking to consolidate data and systems to reduce complexity and the number of systems to update
- Challenged to support new industry mandates
- Need to standardize on platforms to reduce complexity for dev/test/prod
- Need to reduce the time required to configure a new dev/test environment
- Need ability to monitor the end-to-end transaction flow to determine bottlenecks
- *New Application – Some architectural choices still being investigated*



US Healthcare Provider – Information Hubs (tomorrow)

The Environment with zEnterprise

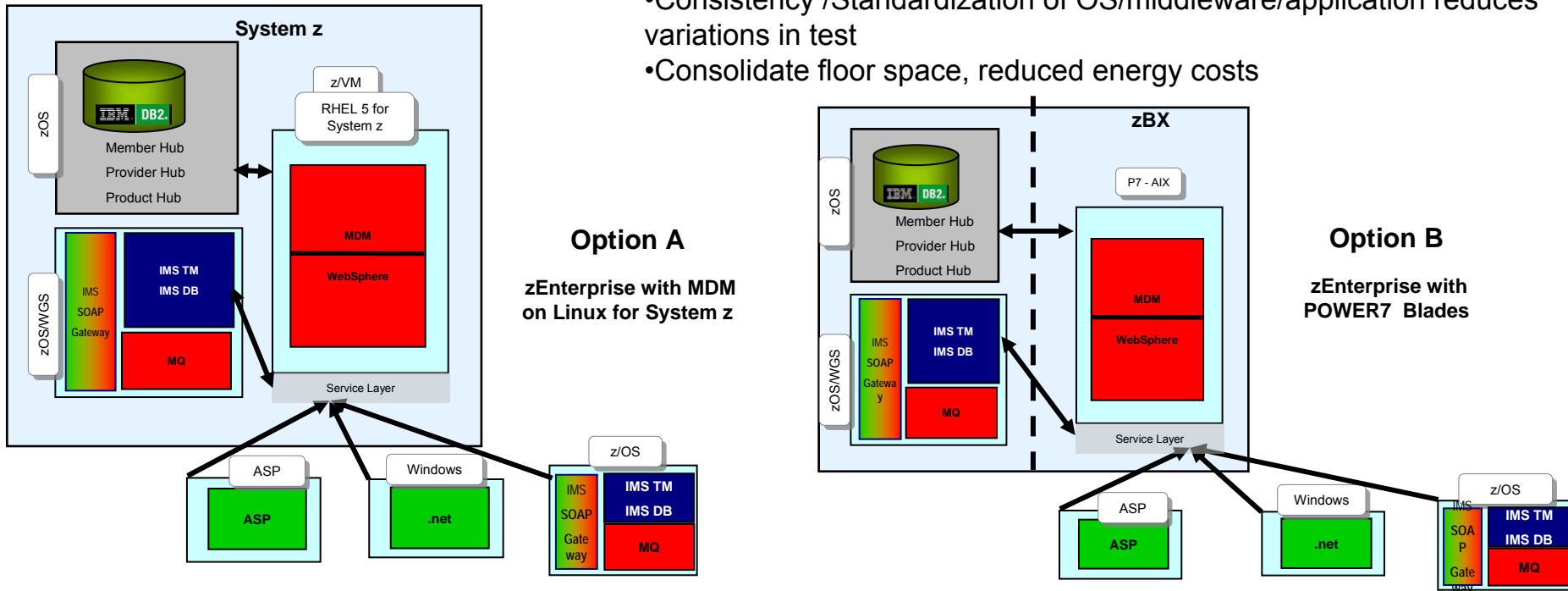
Consolidate information into ‘information hubs’ that will be used by all aspects of the business. Two options being considered for Master Data Management using DB2 on z/OS for consolidated data store, with WebSphere on either AIX or Linux for System z.

Business Advantage

- Consolidation and Simplification will provide client agility to better compete in the highly volatile and competitive healthcare industry.

Operational Advantage

- Application and Data Proximity
- Flexibility of architectural choices as designs are selected for performance and cost
- Network –high speed, private, possible opportunity for reduced requirements for firewalls and encryption
- Allows for virtualization across multiple tier workloads
- Consistency /Standardization of OS/middleware/application reduces variations in test
- Consolidate floor space, reduced energy costs



A few thoughts about a way forward

- **Learn more about zEnterprise and what it can do for your business**
- **Ask your IBM team for a customized proposal including how it can deliver value in your context**
- **Explore one of our Workload Optimization, Fit for Purpose or Architectural Design workshops at no cost**

... thanks for joining us today

Questions?



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