

Service Oriented Architecture *Why System z?*

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IBM Systems

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Basic understanding of a services oriented architecture (SOA)

System z is a sophisticated server providing advanced capabilities for your SOA

IBM is investing in software for enhancing the SOA experience

Key Takeaways



What is a Services Oriented Architecture?



An SOA is a best practice principle, created on the finely struck balance between the needs of the business and the abilities of the IT

Services - flexible business components
- are loosely compiled to meet the ever
changing needs of the business

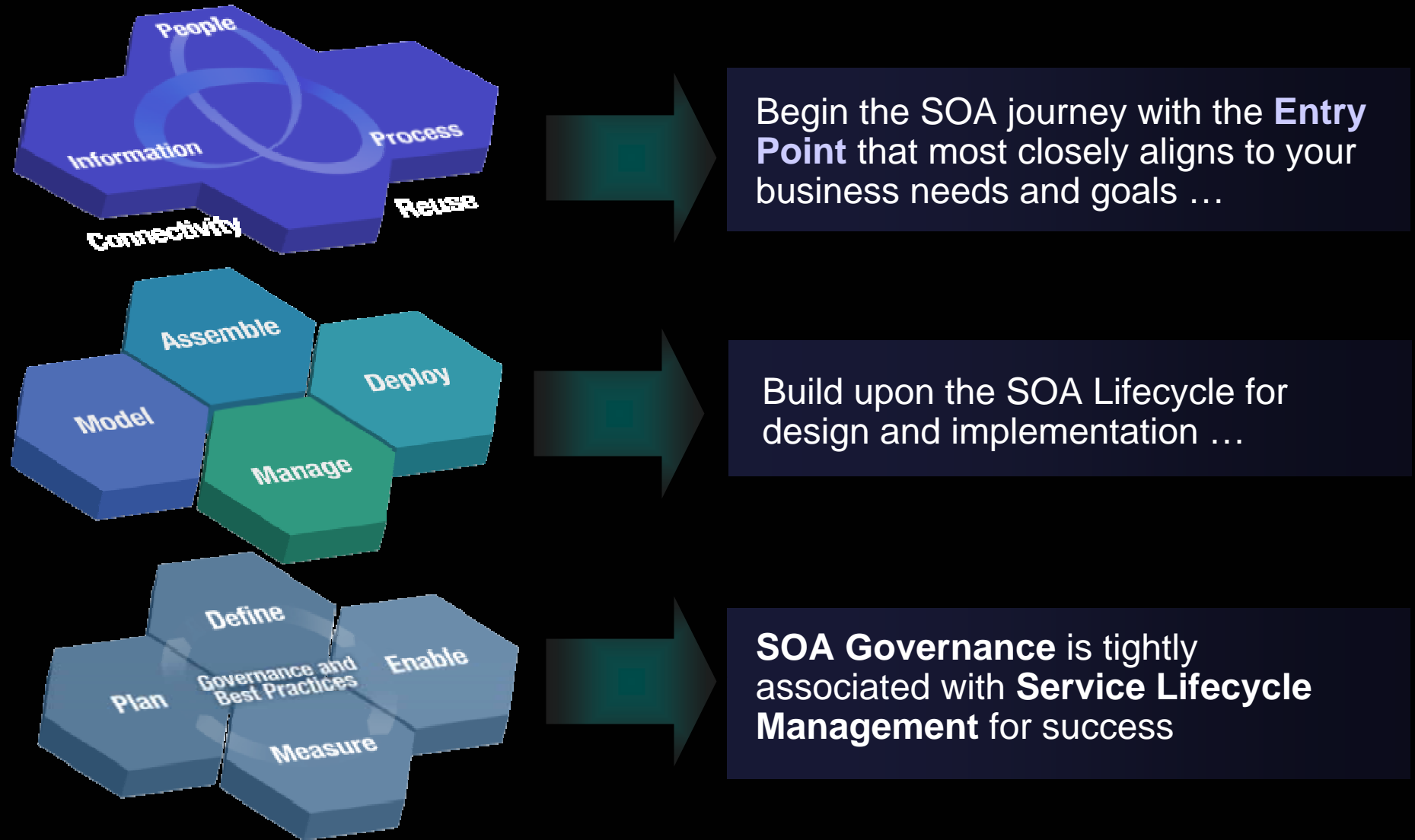


SOA Business Benefits ...

The logo for Aberdeen Group, featuring the word "Aberdeen" in a blue serif font and "Group" in a gold script font.

- Continuous alignment
- Lower maintenance & overall IT costs
- Lifecycle visibility
- Business process management
- Development of new capabilities

Achieving and Maintaining a Successful SOA



SOA delivers business value ... Today



97% of customers justified their SOA project on cost

100% saw increased business flexibility

51% saw revenue growth

*Source: The Business Value of SOA, 2006
Institute for Business Value Study*

SOA System z customer benefits

1. Eliminated system downtime

Fifth Third Bank

2. Increased business efficiency

HSBC

3. Reduced time to value by over 50%

Crowley Maritime

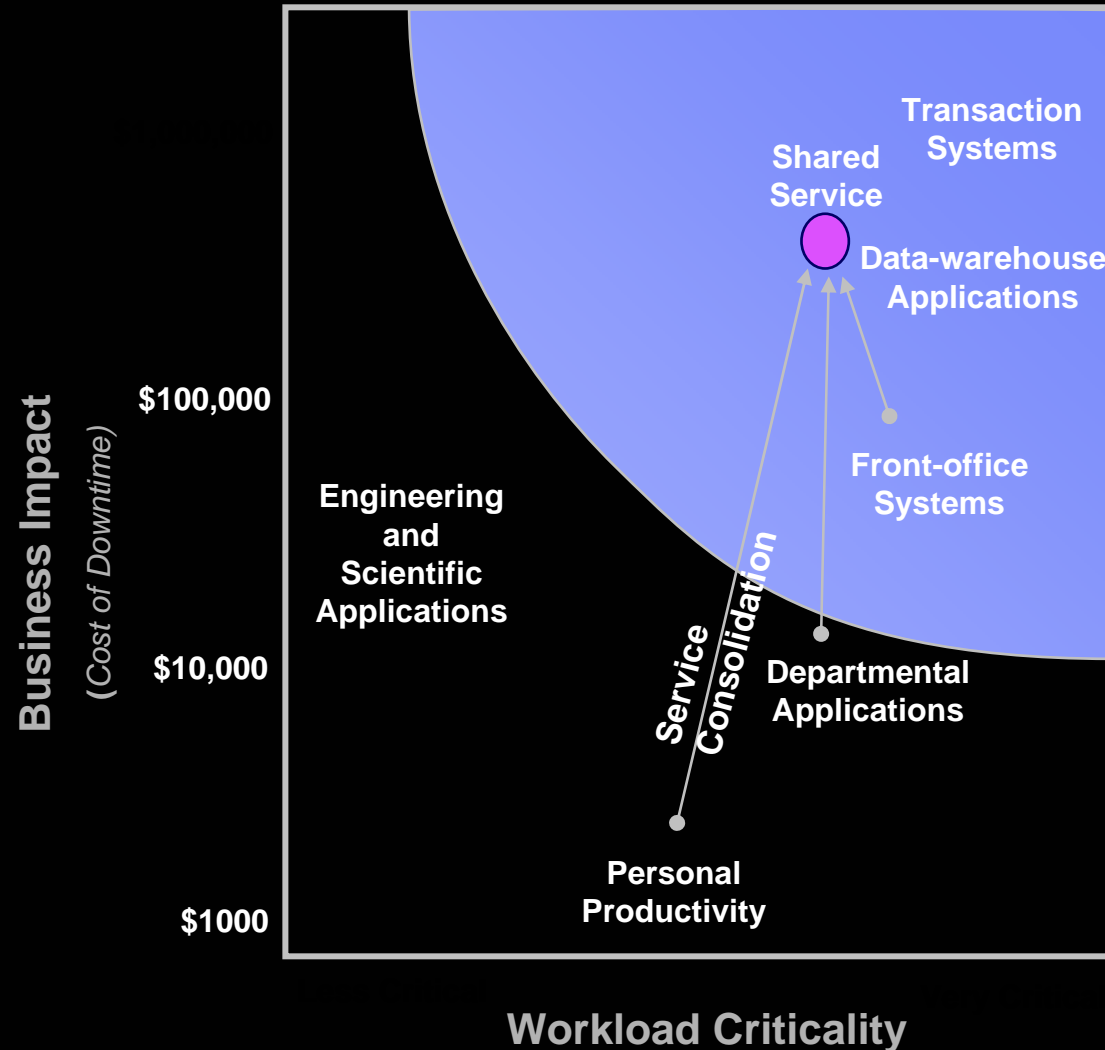
4. Lowered costs while improving qualities

Insurance Services Office, Inc.

5. Differentiation through a flexible technology model

Hoplon Infotainment

The Business Impact of Shared Service Criticality



When shared services become...

critical business resources, and the potential cost of a failure increases ...

it makes business sense to deploy them to System z

The Modern Mainframe ... Not your Father's IT



If the mainframe still evokes images of dated technology and legacy workloads, then you haven't been paying attention

IBM announced (4/27/2007) a new project to integrate Cell Broadband Engine™ (Cell/B.E.) with the IBM mainframe for the purpose of ...

- **Creating a hybrid that is blazingly fast and powerful**
- **Providing security features designed to handle a new generation of "virtual world" applications**
- **Enabling a cutting edge, sophisticated platform for the 3D Internet.**

Open standards fundamental for SOA on System z

Open standards drive SOA adoption, regardless of platform

XForms

**Web Services &
Web Service
Interoperability**

**Web 2.0
innovations**



**Service Component
Architecture (SCA)**

**Service Data
Objects (SDO)**

- Expanded participation with new partners
- BPEL & EGL authoring models
- Improved connectivity descriptions

Losing core information for even a minute can cost you

Availability is critical - System z infrastructure is advanced

Profit-draining potential

A mere minute of downtime can bring big losses.

Business application	Estimated outage cost-per-minute
Supply chain management	\$11,000
E-commerce	\$10,000
Customer service	\$3,700
ATM/POS/EFT	\$3,500
Financial management	\$1,500
Human capital management	\$1,000
Messaging	\$1,000
Infrastructure	\$700

SOURCE: ALINEAN

Planned or unplanned system outages can wreck havoc on your bottom line.

System z can help...

- Up to 99.999% availability in a Parallel Sysplex across all System z resources to avoid planned and unplanned outages
- Change management and rolling maintenance reduces planned outages
- GDPS takes disaster recovery to a whole new level, enabling recovery of whole systems across vast distances

Unplanned downtime (mission-critical)	Typical uptime	Hours down per year	Productivity cost*	Downtime risk
Worse than average	98%	174.72	\$42,000	\$7,338,240
Average	99%	87.36	\$42,000	\$3,669,120
Better than average	99.5%	43.68	\$42,000	\$1,834,560
Good	99.9%	8.736	\$42,000	\$366,912
Best in class	99.999%	.09	\$42,000	\$3,780

SOURCE: ALINEAN

*Per unplanned downtime hour for typical user group

- Component level recovery for both hardware and software
- Automated recovery response to failures including restart and isolation, as appropriate

Security is REALLY that important

Security can make or break your business

Estimates indicate as much as 80% of the world's data resides on a mainframe, and over \$5T in core assets. When you move assets off the mainframe they become vulnerable.



System z provides an unparalleled security vault for assets, featuring ...

- z/OS Security Server provides end-to-end integrity with granular user level access
- Crypto technology at a hardware level
- Only server to receive:
 - FIPS 140 level 4 security classification
 - Common Criteria EAL5 classification
- IBM Encryption Facility for z/OS for tape encryption

CSI/FBI: 2006 Computer Crime & Security Survey
Source: Computer Security Institute

Multi-dimensional virtualization enables system optimization

Virtualization is engineered from the silicon up

On demand scale out solutions are composed of three distinct and complete dimensions of virtualization function:

Open, stable application support

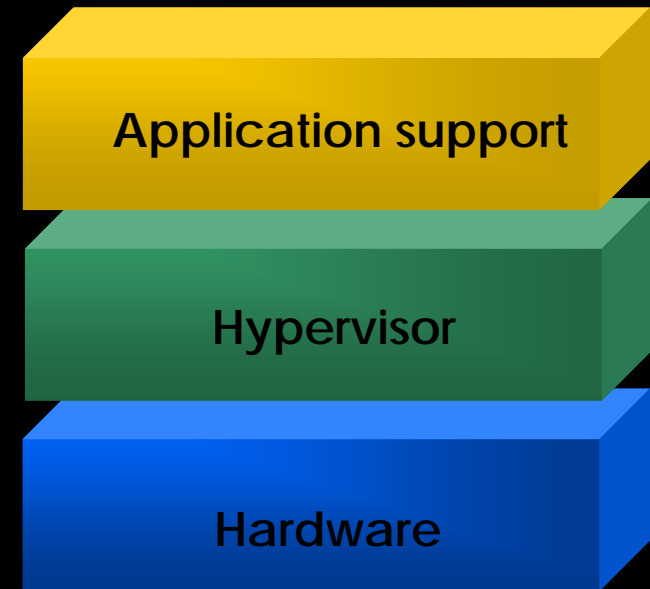
- Support for 100's to 1000's of virtual servers with massive consolidation and quality benefits

A powerful, flexible Hypervisor dimension

- Manages your resource sharing and virtualization across a System z enterprise

Robust, reliable foundation

- Share processor, memory, I/O among multiple operating environments



Virtualization is the underpinning for self healing capabilities ...

- Availability ● Ease of Maintenance & Management ● Isolation & Recovery ● Optimization of server resources ● Utilization ●

Managing differentiated workloads

Recognizing diverse workloads at an enterprise level

System z is a unique integration platform where diverse workloads are centralized and consolidated. An enterprise hub must recognize that ...

Not all Workloads are Created Equal

Workload management enables business agility and flexibility

- Intelligent management of differentiated workloads and allocation of system resources based on business goals across the System enterprise:
 - Granular classification of enterprise level workloads, such as WebSphere, CICS, IMS, etc.
- Intelligent Resource Director in conjunction with z/OS WLM enable autonomic response at a system level to ensure business critical workloads receive the resources they need, when they need them

Workload differentiation is the underpinning for self optimization capabilities ...

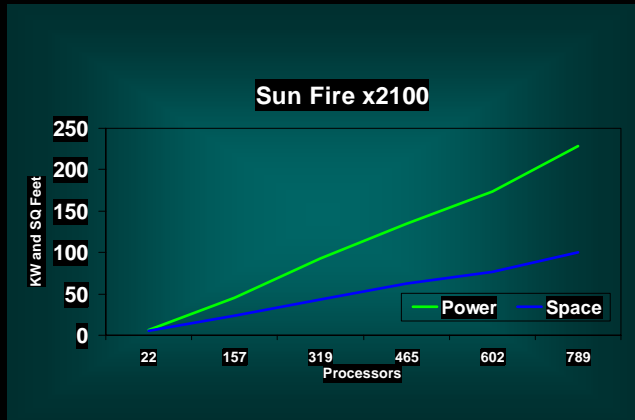
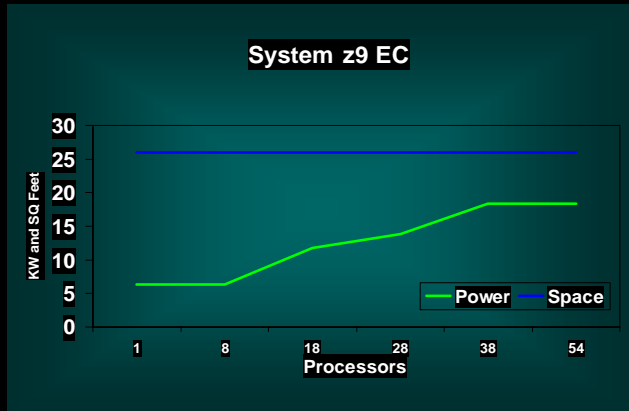
- Autonomic Response of Application and LPAR Resources ● Workload Prioritization
 - Scalability ● Efficient Management & Manual Resource ●

Drive down the cost to run new workloads

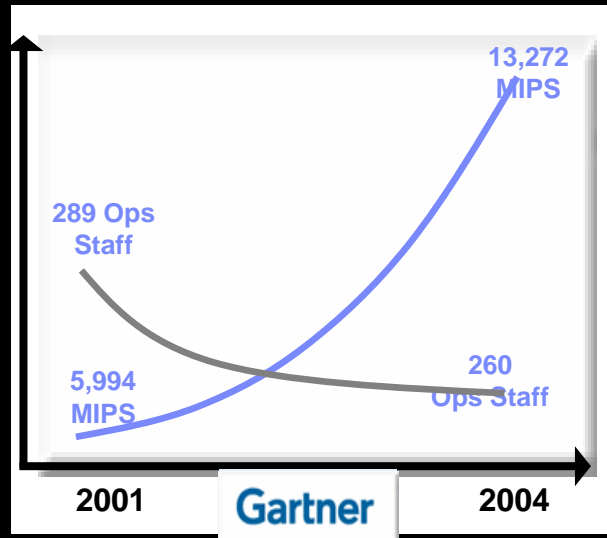
Improve the bottom line of your business with System z

Lowest cost per end user ...

Less power & space ...



Less staff to operate ...

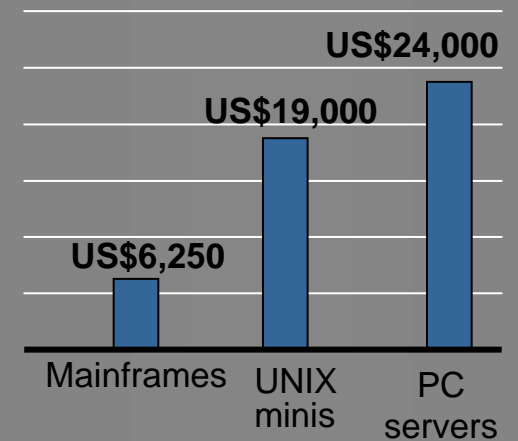


“Since we published our last high-level perspective of the ratio between MIPS and head count in 2001, the largest z/OS installations have more than doubled their ‘MIPS to head count’ ratio.”

L. Mieritz, M. Willis-Fleming – Gartner, 2004

Arcati

Predicted average cost per end user in 2010



Five-year costs for hardware, software and maintenance

Arcati Research 2005.

“The Dinosaur Myth 2004 Update.”

Specialty engines & appliances

Customize your mainframe for your specific workload needs



Java on the mainframe

zAAPs

- Dedicated Java offload engine
- Average MIPs offload rates 60%
- No development impact to Java apps

Data serving on the mainframe

zIIPs

- Add value for DB2 workloads:
 - Enterprise applications
 - Data warehousing apps
 - DB2 z/OS V8 utilities

Linux on the mainframe

IFLs

- Dedicated Linux offload engine
- Cost effective processor for Linux workloads
- LPAR mode specific

CPU intensive XML offload

Datapower

- Message transformation support
- Web Service content-based firewall, routing, filtering capabilities

Enhancing our portfolio

Based on what we've learned from customers

People

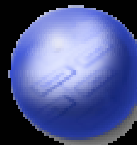


Enhance interactions with colleagues and partners

Provide the best forum for composite applications & reliable communication

- WebSphere Portal Server
- WebSphere Portlet Factory
- Lotus Domino

Process



Breathe new life into your business applications

Model, develop, and monitor integrated and automated processes

- WebSphere Business Modeler
- WebSphere Integration Developer
- WebSphere Business Monitor

New functionality for processes involving human-centric workflow

- WebSphere Process Server

Providing a complete solution focused on industry

- WebSphere Business Services Fabric

Information



Anytime ... Anywhere ... **Information on demand**

Introducing the most powerful hybrid XML/relational engine available

- DB2 UDB for z/OS V9

Enhancing our portfolio

Based on what we've learned from customers

Reuse



Your core applications are among your **most valuable assets**

Increase productivity from discovery to development ...

- Rational development tools
- WebSphere Studio Asset Analyzer
- WebSphere Developer for System z

Robust, flexible, and powerful transaction engines ...

- WebSphere Application Server
- CICS Transaction Server
- IMS
- z/TPF
- WebSphere Extended Deployment

Embrace your SOA ...

- WebSphere Service Registry and Repository

Guaranteed connections are the **backbone of your business**

The ESB without limits, featuring ...

- WebSphere ESB
- WebSphere Message Broker

Extend your ESB for your business success ...

- WebSphere MQ
- WebSphere DataPower SOA Appliances
- WebSphere Service Registry and Repository
- WebSphere Transformation Extender

Connectivity



Aurora Healthcare

Using reuse for their mantra - "We're Finding Better Ways"



To respond and innovate

- iConnect a single sign-on, self-service, Human Resources Portal reuses content from over 70 applications to offer a wide range of Web features, including
 - ✓ Logistics – over \$600M of supplies are ordered per year
 - ✓ Collaboration – Notes and Messaging technologies
 - ✓ ER and Hospital management
 - ✓ Employee payroll



To be competitive

- Increase agility and reduce complexity with centralized SOA deployments
 - All iConnect applications are hosted on WebSphere Application Server for z/OS with centralized and shared DB2 data stores
 - Availability needs provided with Parallel Sysplex
 - The System z "shared everything" architecture enables quick change management and the introduction of new software and application releases
- Drive down costs with mainframe software and specialty engines

Mainframe customers recognize differentiated value

Enabling intelligent IT that works for your business



- Application and Data **Availability** for Business Resiliency
- Rock Solid **Security** and Privacy
- Massive **Scalability** features for non-disruptive growth
- Higher **Utilization** and Balanced System Design
- Advanced multi-dimensional **Virtualization** Capabilities
- Highly Responsive, Autonomic and Intelligent **Workload Management**
- Utilizes **Open** and **Industry Standards**
- **Transformation** and **Integration** of legacy applications and Data.
- **Specialty engines** introduce a new set of economics
- World-class Integrated **Support**

Server Leadership: 40+ years in the making!

Mainframe utilization rates often exceeds 80%, and are designed to handle sustained peak workload utilization of 100% without service level degradation.

IBM Get Started with SOA on System z

SOA Assessment Workshop

- Identify business goals, technical requirements, reuse & new development opportunities

SOA Architecture and Design Workshop

- Gain a deeper understanding of your project requirements, evaluate existing infrastructure, develop recommended architecture

SOA for Project Scoping Workshop

- Identify enterprise applications as an SOA System z project, identify skills and resources, develop a comprehensive project plan

Advanced SOA and Web Services Mentored Workshop

- On-site advanced mentoring workshop for architects and developers focused on SOA for System z and Web Service technologies and skills.

SOA Application Development, Mentoring and Deployment

- Create a co-development schedule including development lifecycle, best practices, iterative development, code refactoring, integration, testing and delivery

SOA Center of Excellence

- Provide assistance with improving your SOA for System z software development, delivery & operations

SOA Related Education Available

- IBM offers courses which can complement Service Oriented Architecture for System z

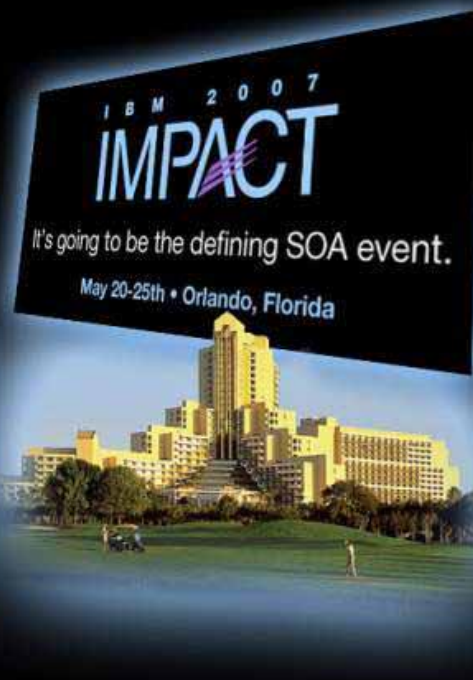
Learn More: <http://www3.software.ibm.com/ibmdl/pub/software/dw/wes/pdf/services/IBMGetStartedwithSOAforzSeries.pdf>

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Featured speakers

- Mark Burnett, producer of Survivor, The Apprentice, and The Contender
- Steve Mills, Senior VP & Group Executive SWG, IBM
- Robert LeBlanc, GM, Global Consulting Services and SOA, IBM
- Carol Baroudi, Best-selling author of *SOA for Dummies* & *Internet for Dummies*
- Tom Rosamilia, GM, Application & Integration Middleware, IBM
- Sandy Carter, VP SOA & WebSphere Strategy, Channels and Marketing, IBM

Registration at

ibm.com/events/impact2007



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