



IBM Systems & Technology Group

SOA on System z

A more prescriptive approach

Smart
SOA

Andrea Greggo
SW Specialist, IBM Executive Briefing Center



System z9

The IBM STG Executive Briefing Centers

The IBM Poughkeepsie Briefing Center, focusing on the needs of the enterprise class customer to ensure satisfied customers.

Who We Are

- 12 STG WW Briefing Centers
- Located on IBM sites with STG's major development labs
- Aligned with IBM's Technical and Executive Leadership



What We Do

- Technical and executive level briefings
- Strengthen IBM - client relationships
- Accelerate adoption of new technologies, products & offerings

Learn more: <http://www.ibm.com/systems/services/briefingcenter/abc/>

Key takeaways

- **SOA requires participation from the business & is ineffective when contained only to IT**
- **System z is a hub for SOA activity**
- **IBM is investing in products, product features, and industry showcases to help our System z customers succeed**

Agenda

The business climate for SOA

- Shifts in the market & leadership roles
- The business organization & IT expenditures can impact SOA success

Smart
SOA

The reality of SOA

- Phases of SOA adoption
- Preparedness for disruptive IT technologies

System z as a SOA hub

- Reuse is the primary System z SOA driver
- IBM tools & product features can help
- SCA & process orientation simplify reuse

SOA scenarios & investments

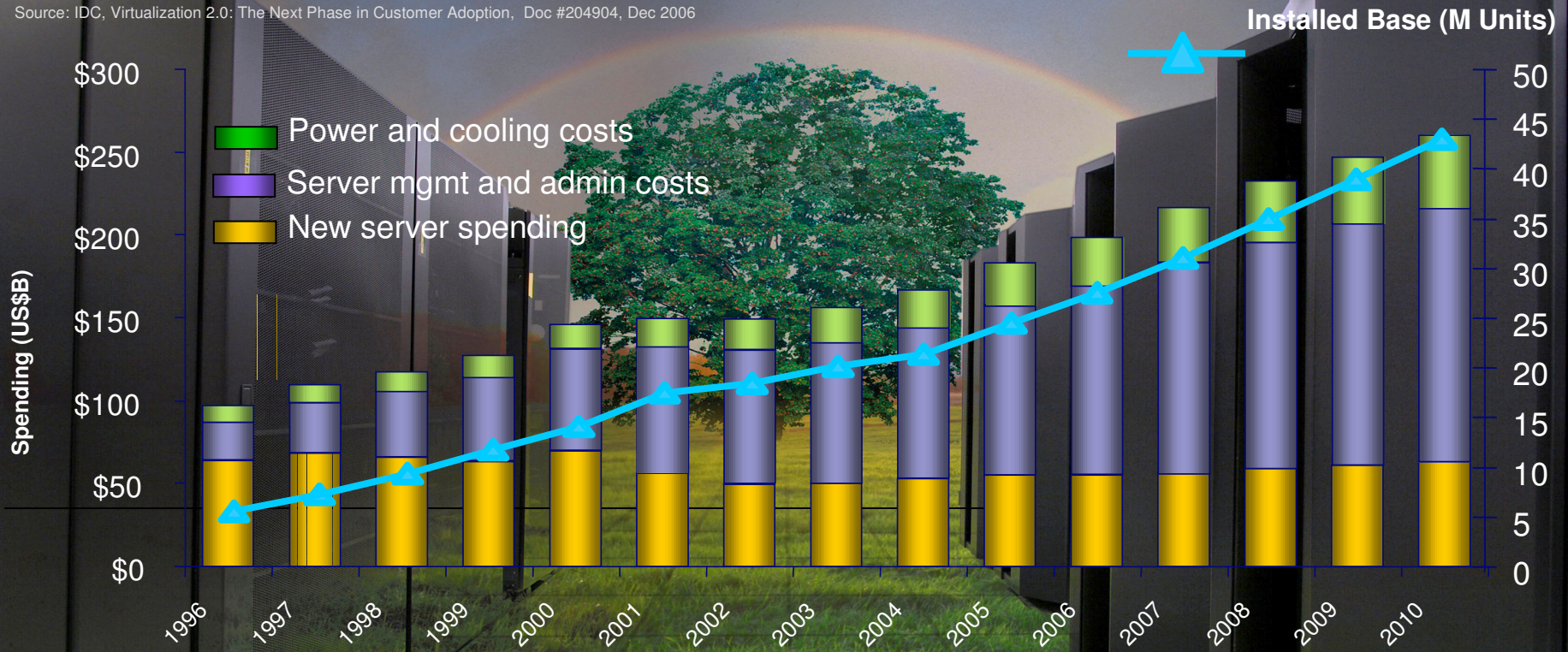
- SWG SOA scenarios & System z
- Industry Solutions & Showcases

Conclusion



Creating a sustainable IT future

Source: IDC, Virtualization 2.0: The Next Phase in Customer Adoption, Doc #204904, Dec 2006



www.ibm.com/systems/z/green/

The evolving role of the CIO

There are three kinds of people... those who let it happen, those who make it happen, and those who wonder what happened ... but only one kind of CIO that matters

MAKE IT HAPPEN!

Leading CIOs must fill three roles:

- **Function Head** - focusing on operational excellence
- **Transformational Leader** - concentrating on business process transformation & IT-business alignment
- **Business Strategist** - driving enterprise strategy and innovation



Most CIOs spend the majority of their time and resources focusing on **MAINTAINING** their IT enterprise and not **INNOVATING** their business

The value of strategy

Does your company have a business strategy & has it changed to adapt to SOA?

- How does the mainframe fit into the overall strategy?

*SOA success requires a SOA strategy, which entails adherence to corporate and industry policies. The acceptance and adherence to these new policies and requirements demands new processes, procedures and guidelines that can impact the way multiple teams and individuals do their jobs. – the SOA Forum**

*<http://www.networkworld.com/news/2007/102207-soa-governance-falls-short.html>

Get off the mainframe strategy

Price Tag: \$32M



Indiana Bureau of Motor Vehicles
Ronald L. Stiver, Commissioner



Price Tag: \$47M
20+ year initiative

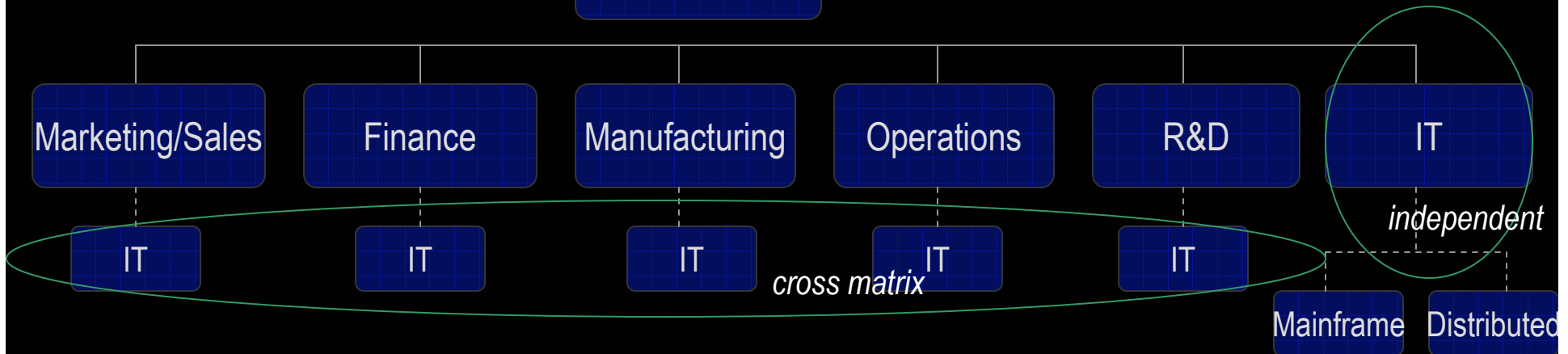
Mainframe competitive advantage



The enterprise at a glance

Headquarters

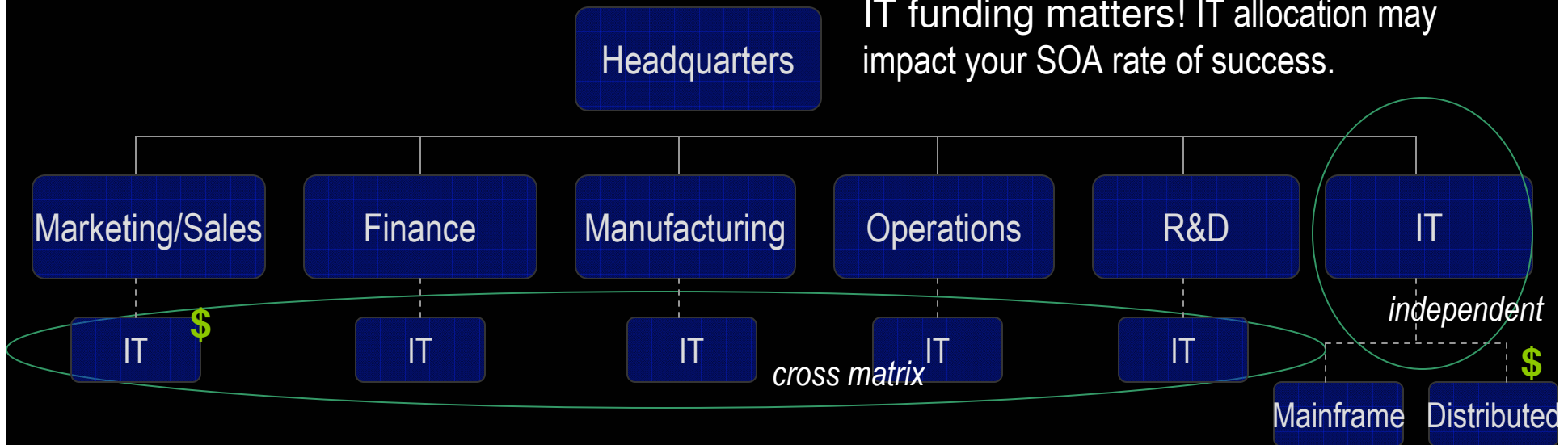
A **SOA Champion** can mean the difference between success and failure



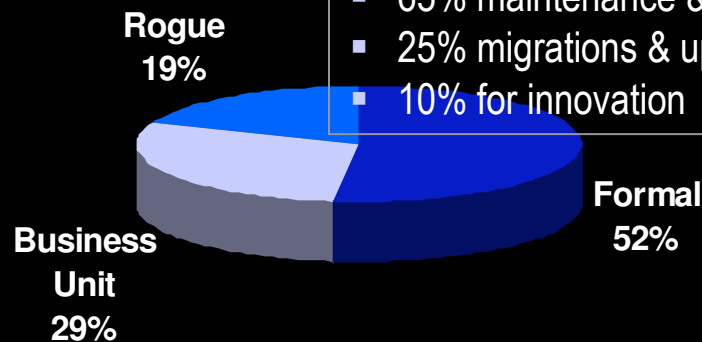
- Does your company have a business strategy that includes IT?
- How does your IT shop fit into the corporate organization - *independent operation, cross matrix, or both?*
- How integrated is your IT shop – *across disciplines, islands, or somewhere in between?*
- Is your IT organization divided - *mainframe & distributed platforms with different leadership?*
- Do “*new workload*” strategies exclude the mainframe entirely – *ineligible, no proof of concepts or technology, etc.?*

Funding practices of the business impact SOA

IT funding matters! IT allocation may impact your SOA rate of success.



IT Spend



- Formal & Business Unit IT spend:
- 65% maintenance & management
 - 25% migrations & upgrades
 - 10% for innovation

http://expertanswercenter.techtarget.com/eac/knowledgebaseAnswer/0,295199,sid63_gci1053538,00.html

Is IT funding partially to blame?

*The typical corporate IT portfolio is ... a mash of inconsistent processes, disparate applications, different data types, and multiple interfaces -- all evolved to support the needs (often whims) of individual business units. And the bigger the company, the bigger the challenge.**

*<http://www.fool.com/investing/value/2006/09/18/soa-the-new-software-bazaar.aspx>

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SOA reality

While the potential benefits of SOA are great ... Merrill Lynch surveyed CIOs & found 87% agreed SOA is the "next big thing" in enterprise software*.

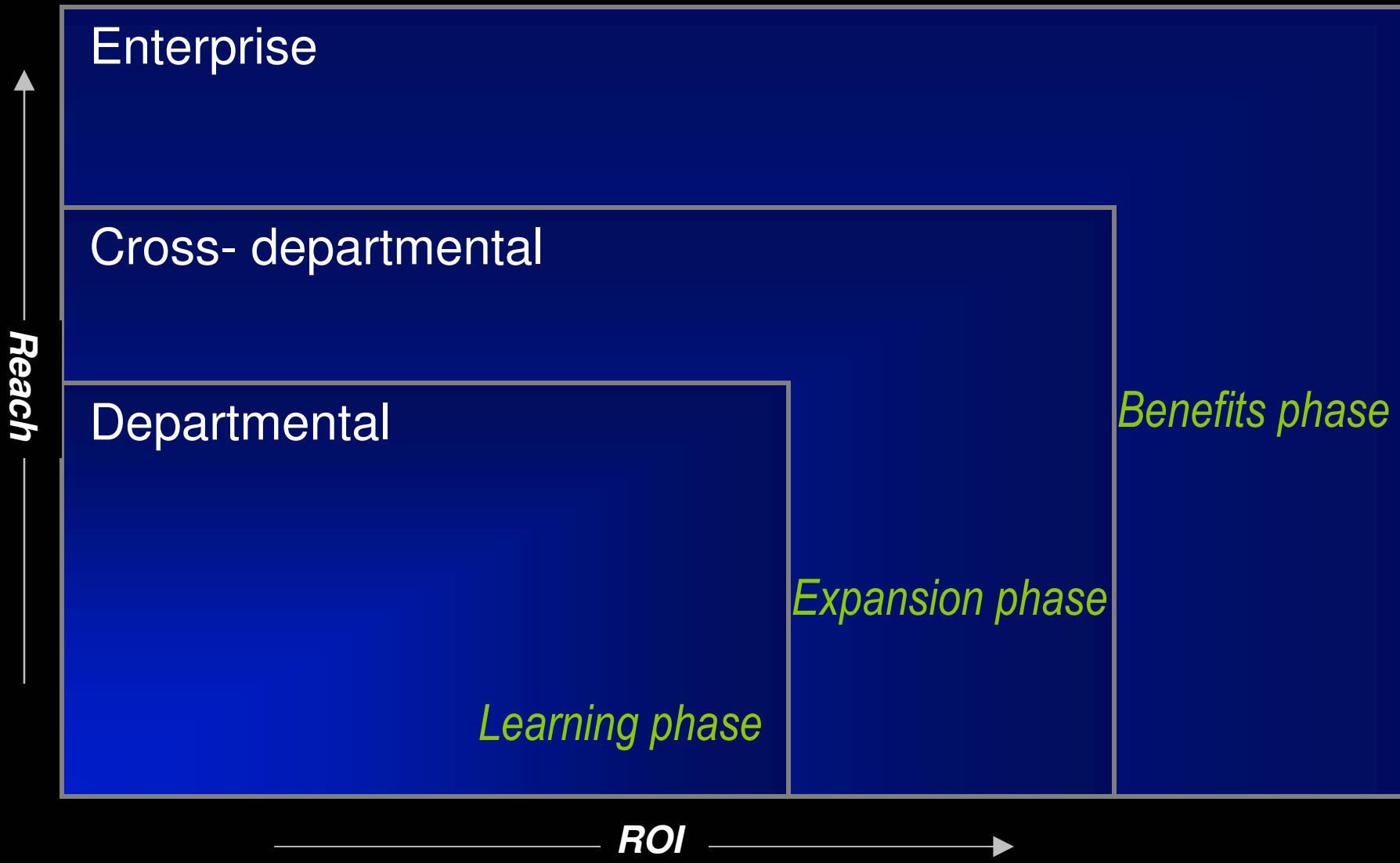
- Reduced complexity
 - Improved time to market
 - Increased business flexibility
 - High return on investment
 - Innovative business solutions
 - Collaborative business culture
- 

SOA is not easy ... InformationWeek survey reveals 1 out of 4 SOA projects disappoints & 69% were undecided about the outcomes of their efforts.

- SOA champion, SOA governing boards, & SOA architects
- Strong change leadership
- Paradigm shift of internal culture
- New rules of engagement for operations
- Manage & govern an integrated enterprise

*<http://www.fool.com/investing/value/2006/09/18/soa-the-new-software-bazaar.aspx>

SOA adoption phases & expected return



*In a business environment where change is the only constant, smart companies don't hurtle blindly towards transformation -- they take time out to explore their options.**

Are you ready to adopt new technologies?

Strategic technologies are technologies that could **disrupt IT or business** in the next 18 to 36 months. They may **require a large dollar investment** and could **cripple your organization if adopted too late**.

The Gartner list of **10 Strategic Technologies to watch in 2008****:

- **Green IT is here to stay!** System z can operate on 1/12th the electricity of a distributed server farm with equivalent processor capability.
 - **Virtualization 2.0 is sophisticated!** System z offers the security of isolated machines without the headaches of isolated machines and is designed from the silicon up to run fully loaded.
 - **Web platform is driving SaaS to the next level!** System z delivers the security, recoverability, and scalability to support centralized services offerings.
 - **Computing fabrics are customizable hardware components for dynamic servers!**
On 4/27/2007 IBM announced a new project to integrate Cell Broadband Engine into the mainframe.
- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Unified communications ▪ Business process modeling ▪ Metadata management | <ul style="list-style-type: none"> ▪ Mash-up and composite applications ▪ Real world web ▪ Social software |
|---|--|

* -Sam Shepard , <http://www.theitsanctuary.com/quotes>

**http://searchcio.techtarget.com/originalContent/0,289142,sid19_gci1276289,00.html?track=NL-48&ad=609026&asrc=EM_NLN_2388567&uid=2914726

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A meet in the middle approach to SOA on System z



Begin with the business ... focus on identifying the needs of the business



Meet in the middle ... match the needs of the business to the mainframe assets in existence, and develop new only when the business needs are unmet.



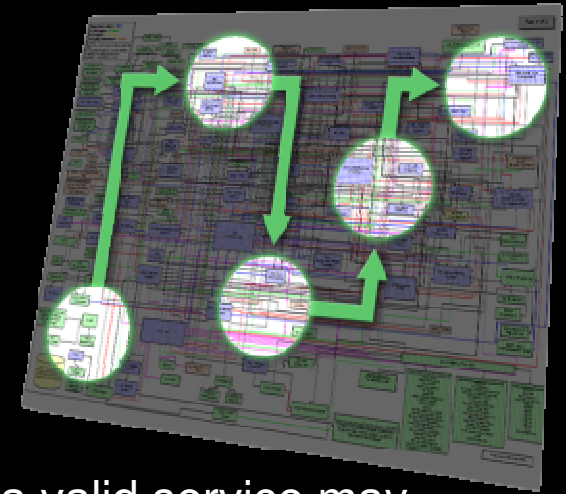
Break out the technical inventory ... identify and expose valuable IT assets for reuse

Service enabling your SOA assets

Begin by:

- Discovering your mainframe assets
- Understand their relationships

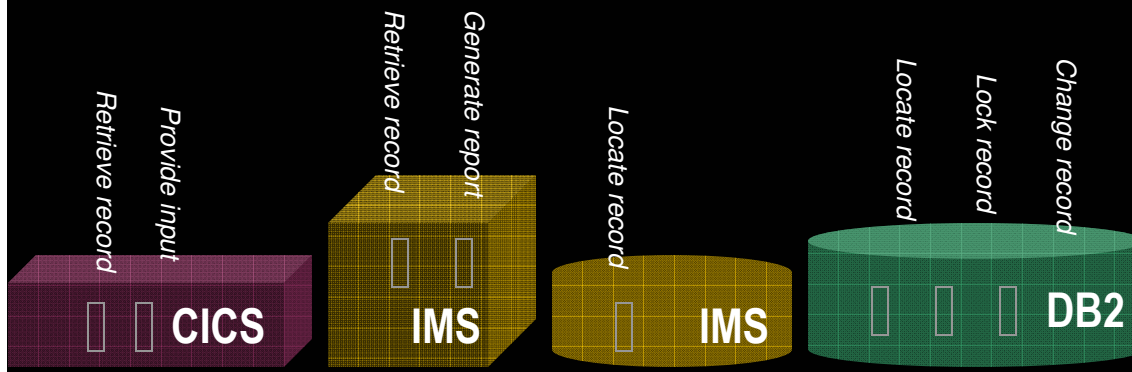
Sounds easy, right?



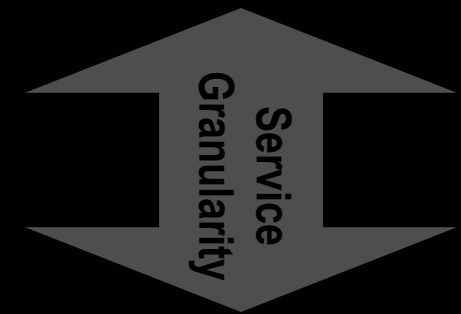
Services are business processes with business value ... a valid service may often require functions from different applications.

Some service examples:

- Update customer account
- Obtain credit report



Services that are **too coarse grained** are not as reusable



Services that are **too fine grained** provide little value



Complementary mainframe tools support SOA

Tools for mainframe reuse

Value add

Performed by

WebSphere Studio Asset Analyzer (WSAA)

Application Understanding

Impact Analysis

Enterprise-wide app discovery and insight; find dependencies across applications and lines of business

Architects, project leaders, DBAs, developers, system programmers

Asset Transformation Workbench (ATW)

Application Analysis

Business Rule Management

Components for reuse

Project-level workbench for deep application analysis and transformation

Architects, project leaders, analysts, developers

Rational Developer for System z (RDz)

formerly WebSphere Developer for z

Traditional Development

Web Development

Services Development

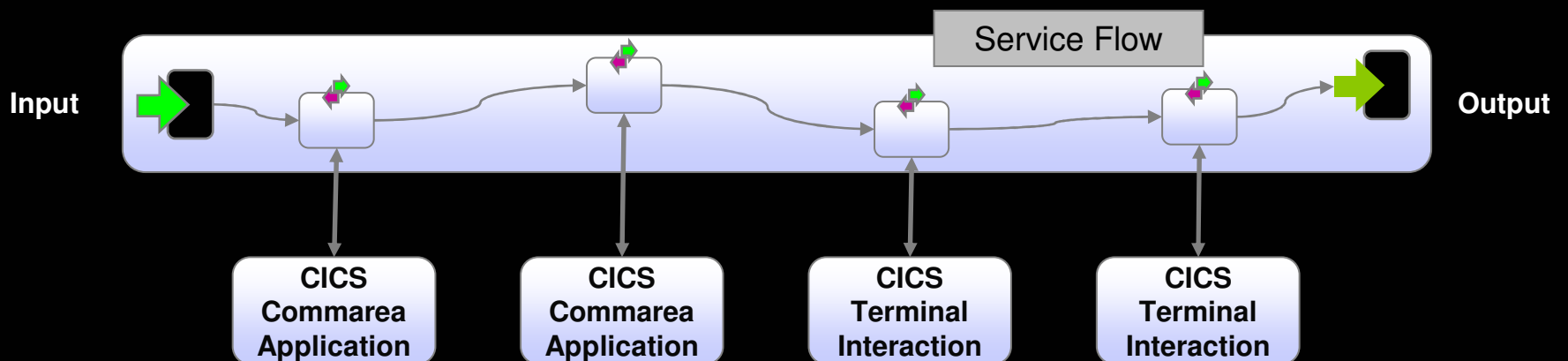
Common IDE for COBOL, PL/I, J2EE and Web services development

Architects, Developers

View the Web cast: <http://www-306.ibm.com/software/os/systemz/webcast/feb21/>

CICS introduces service flows to support SOA

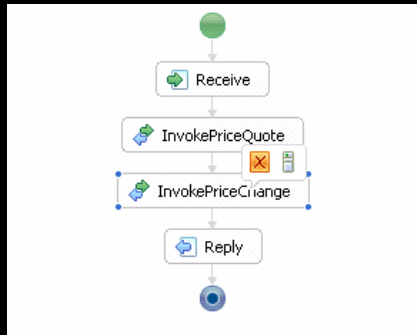
- A service flow is a non-interruptible micro-flow (or script) that is constructed from a collection of nodes that represent the invocation of CICS resources
- The flow describes the navigation of the nodes and allows data mapping between the nodes
- A single request may cause the execution of many CICS resources
- Allows for the development of coarse grained services from fine grained resources



Business process integration accelerates SOA adoption

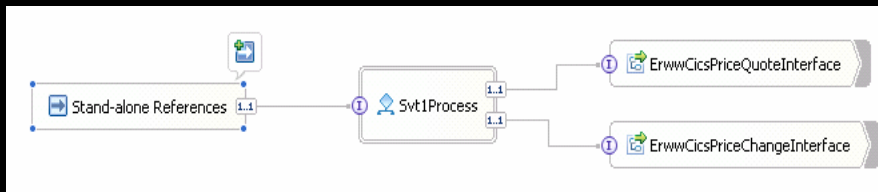
Service Component Architecture (SCA) allows you to bind business objects in a technology neutral way.

Integrate the business process

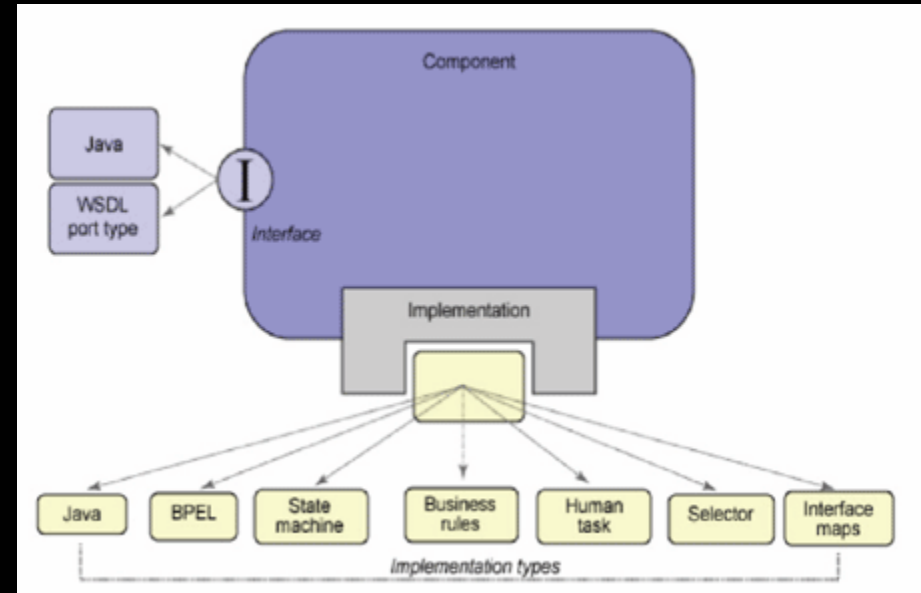


Example using WebSphere Integration Developer

Assemble as an SCA module



Example of the process implemented as an SCA module



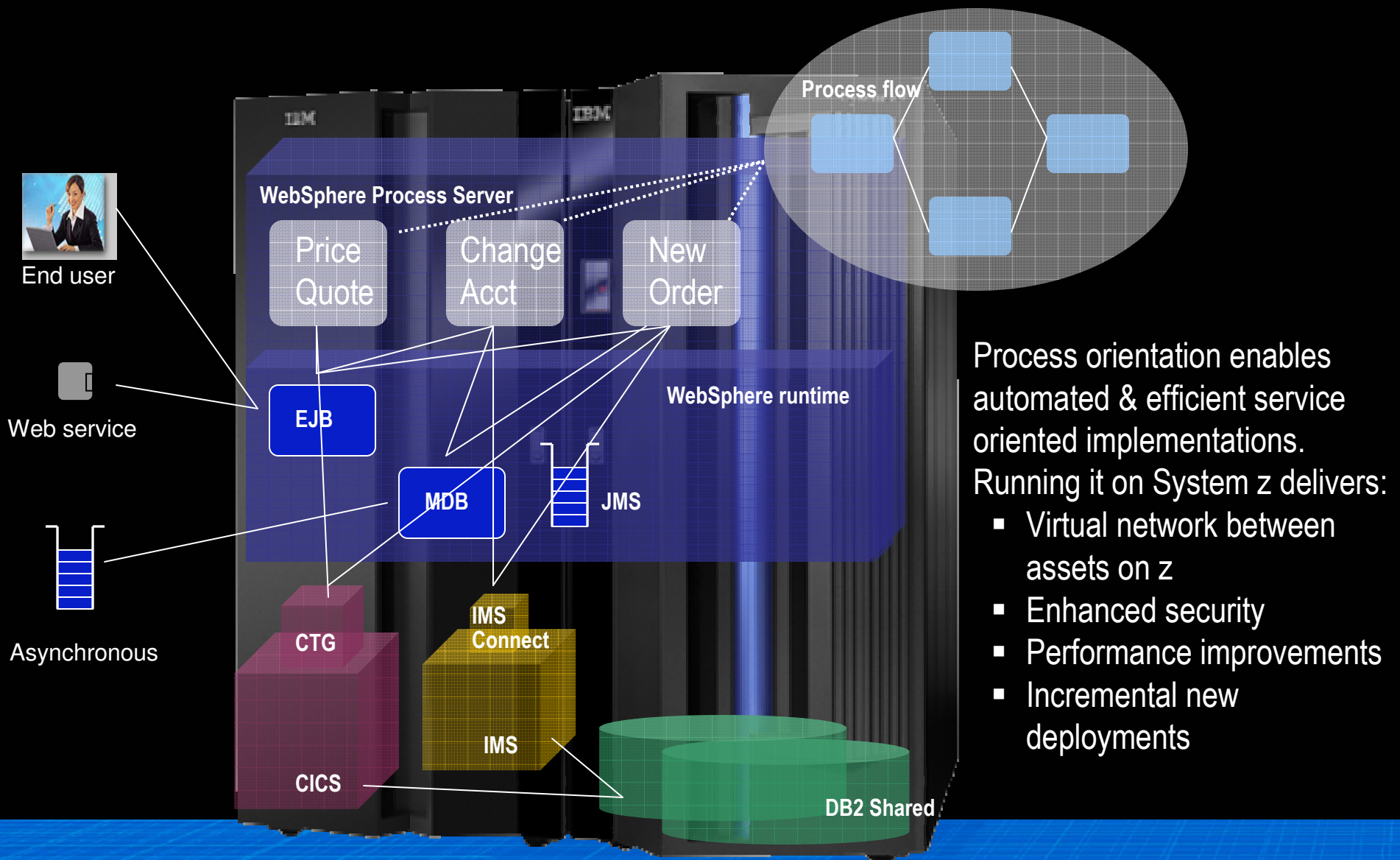
Example of SCA usage in WebSphere Process Server

SCA service modules support a standard...

- Model for defining business services & defining dependencies
- Deployment model for packaging components
- Model for data exchange - SDO

Using WebSphere Integration Developer: http://www.ibm.com/developerworks/websphere/techjournal/0512_peterson/0512_peterson.htm

Business process discipline to reusing core services



- Process orientation enables automated & efficient service oriented implementations. Running it on System z delivers:
- Virtual network between assets on z
 - Enhanced security
 - Performance improvements
 - Incremental new deployments

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IBM SWG SOA Scenarios

Business process management scenario

Information as a service scenario

Business process management scenario



Service connectivity scenario
(focused on System z)

- Connect business systems based on open standards

Service creation scenario (focused on System z)

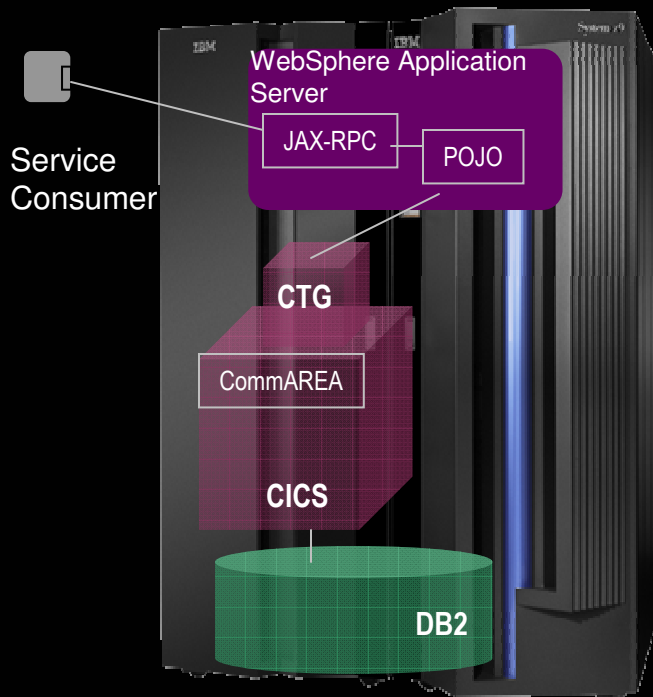
- Service enable existing CICS
 - Indirect exposure with WebSphere Application Server
 - Direct exposure

Visit the SOA scenarios on the Web: <http://www.ibm.com/developerworks/webservices/newto/>

Example: Indirect exposure of CICS using WebSphere

Using WebSphere Application Server to front end CICS (or other core environments) is a common configuration. There are two options for deployments we will visit:

1. All assets on z/OS
2. WebSphere not running on z/OS



The benefits of #1:

Security

- 1 authentication point
- CTG issues trusted identify
- No credentials on the network

Availability

- Parallel Sysplex availability for WAS apps and CICS apps (CICSplex)

Systems Management

- zWLM as a single manager for CICS and WAS workloads
- Ability to prioritize

The trade-offs of #2:

Security

- Multiple network authentication points
 - Encryption

Availability

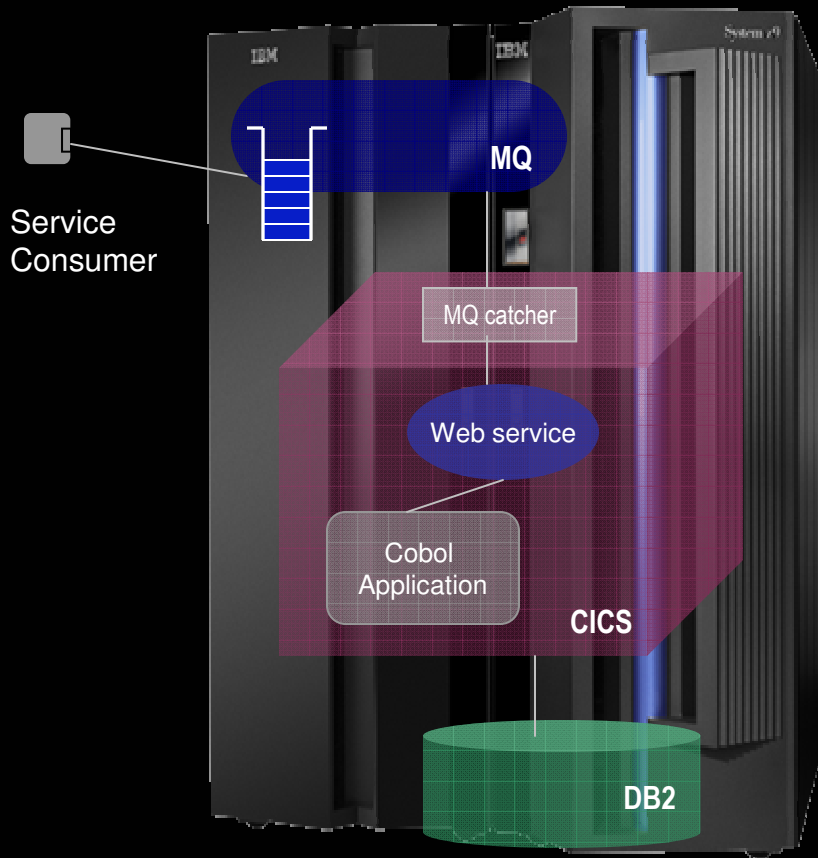
- Availability is achieved through redundancy
 - Cost impacts

Systems Management

- No end-to-end systems management

Read Chapter 6 in the WIT z/OS1.9 Test guide: <http://www.ibm.com/servers/eserver/zseries/zos/integtst/library.html>

Example: Direct exposure of CICS Transactions



CICS V3.1:

- Enables standards based interfaces via Web Services
- Provides a simple method for re-factoring CICS applications
- Allows CICS to be both a Web Services provider and requestor
- Supported Standards:
 - SOAP 1.1 and 1.2
 - WS-I Basic Profile 1.1
 - WS-Coordination
 - WS-AtomicTransaction
 - WS-Security

SOA business integration of process systems

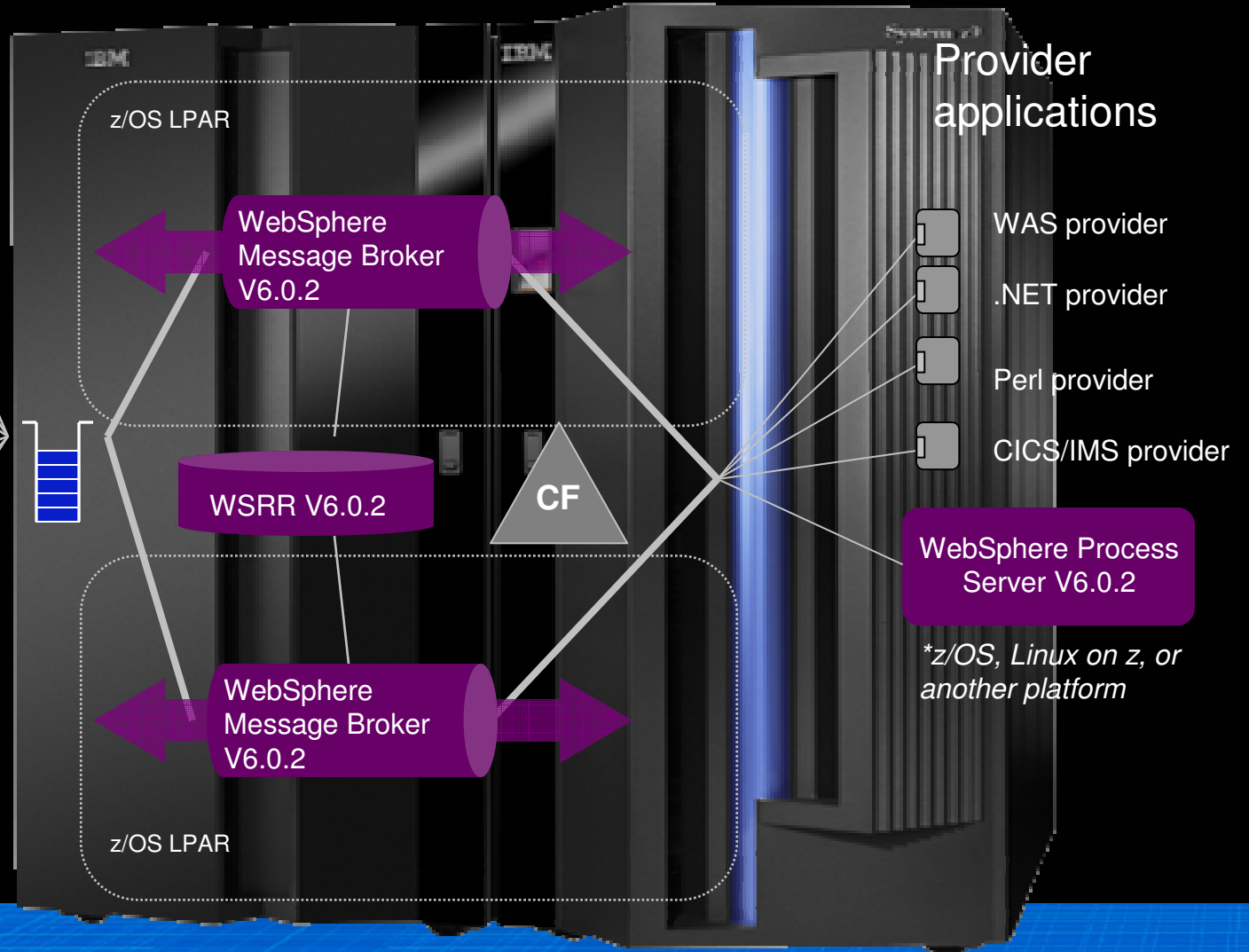
Requestor applications

- Intranet Portal
- .NET Application
- Internet Application
- Rich Client Apps
- IVR Apps

WebSphere Process Server V6.0.2

**z/OS, Linux on z, or another platform*

WebSphere Integration Developer V6.0.2



Provider applications





- WAS provider
- .NET provider
- Perl provider
- CICS/IMS provider

WebSphere Process Server V6.0.2

**z/OS, Linux on z, or another platform*

System z supports Industry solutions

Across industries, common needs are driving customers to System z ..

Economics 	Energy Efficiency 	Security 	Data Serving 
---	---	--	--

System z is responding to customer needs by focusing on specific industry solutions...



Government



Financial Services



Automotive



Retail



Electronics



Telecommunications

Learn more about System z Industry solutions: <http://www-03.ibm.com/systems/z/solutions/>

Two flexible and integrated insurance showcases illustrate how SOA can help facilitate business transformation

Life and Annuity *Business* Solution Showcase

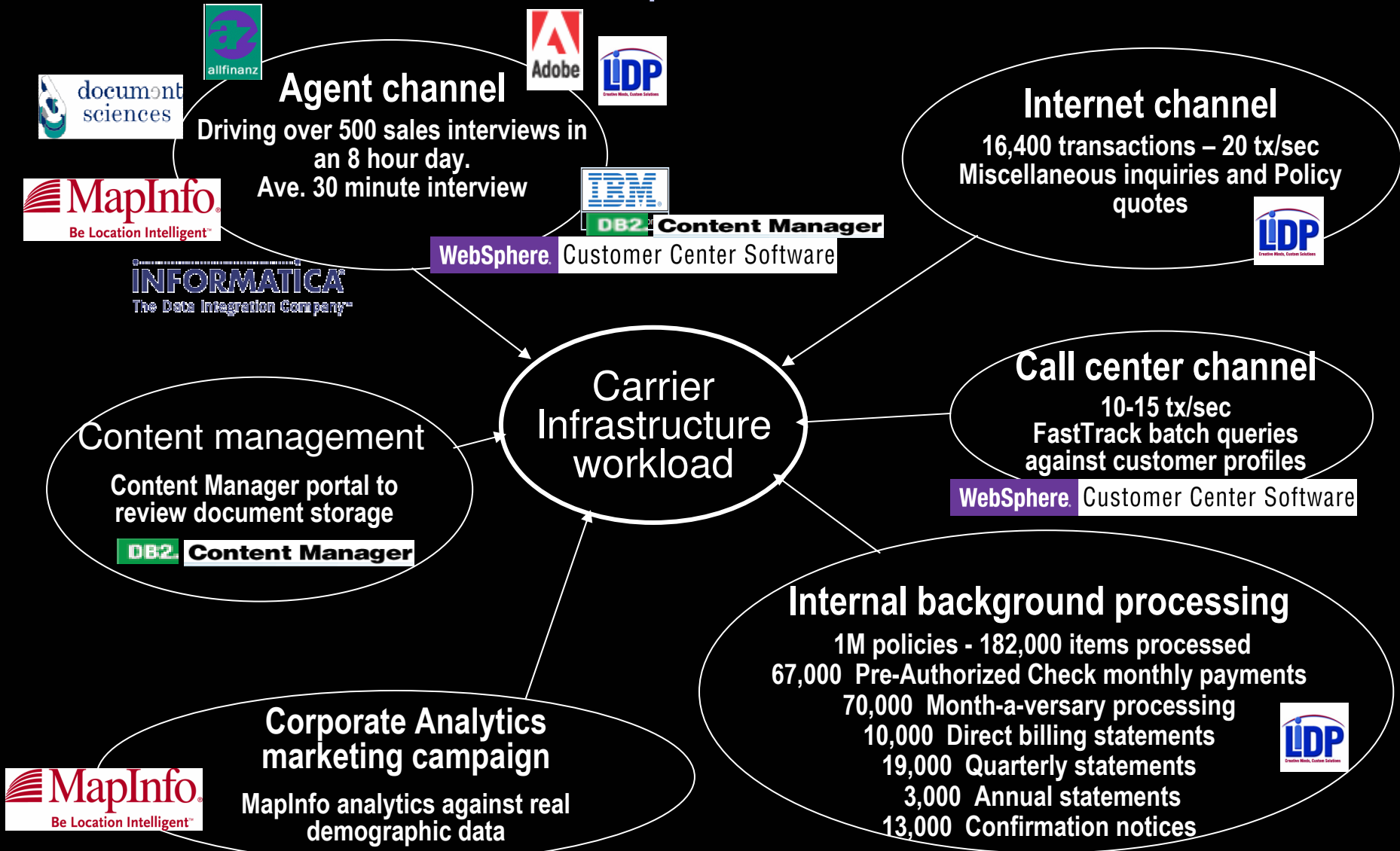
- Leading edge SOA enabled “Straight Through Process for Life Policy Issue” built by combining nine (9) applications into a SOA composite business application
- 90 minute laptop discussion presented at client location



Life Insurance *Infrastructure* Solution Showcase

- Running the SOA Business Showcase application in a live, production-like System z - centric heterogeneous infrastructure to demonstrate SOA scale, performance, resilience and cost effectiveness.
- One day briefing hosted at Gaithersburg, MD and Montpellier, France briefing centers

Insurance Showcase runs production workloads



Insurance Showcase - delivers an optimized, resilient, heterogeneous infrastructure

Channel Access Points



Agent

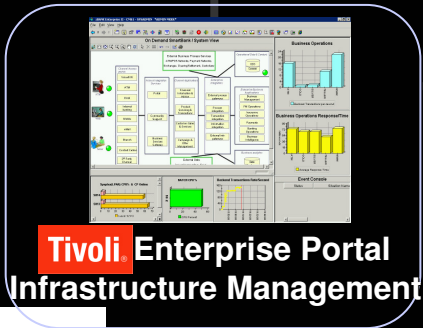
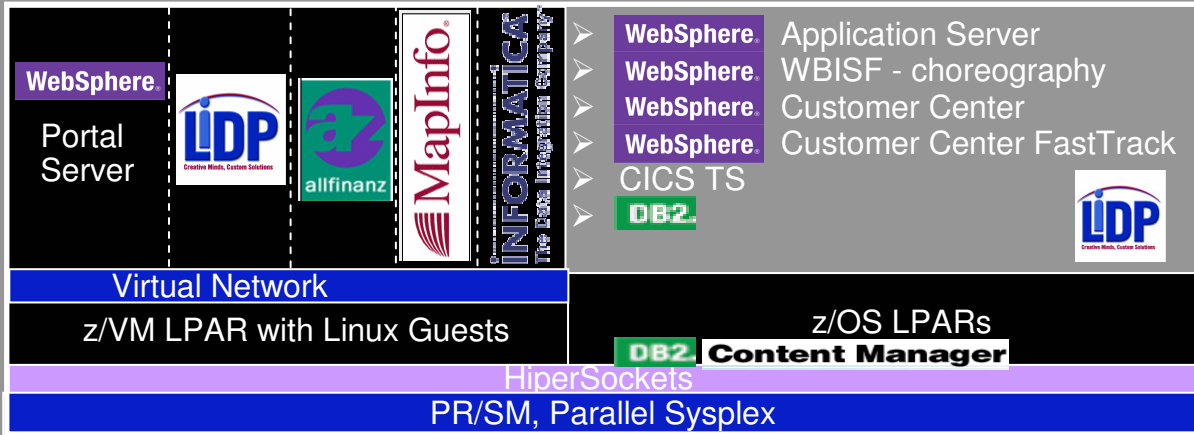


Call Center



Internet

IBM System z9™ Enterprise Class

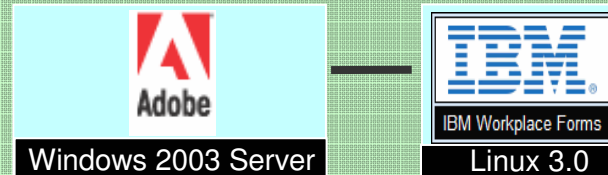


Systems Management

IBM System p5™ 570



IBM BladeCenter®



Showcasing IBM System z infrastructure by creating a live banking operating environment for On Demand business



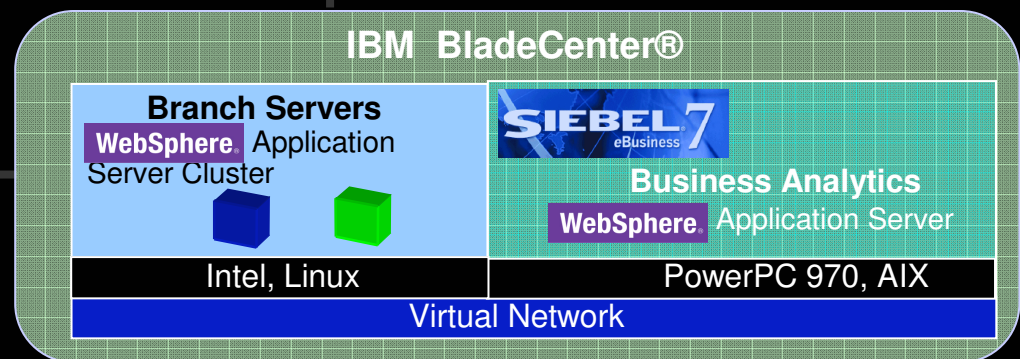
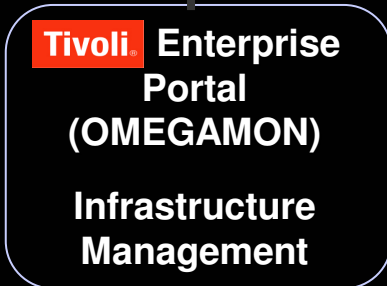
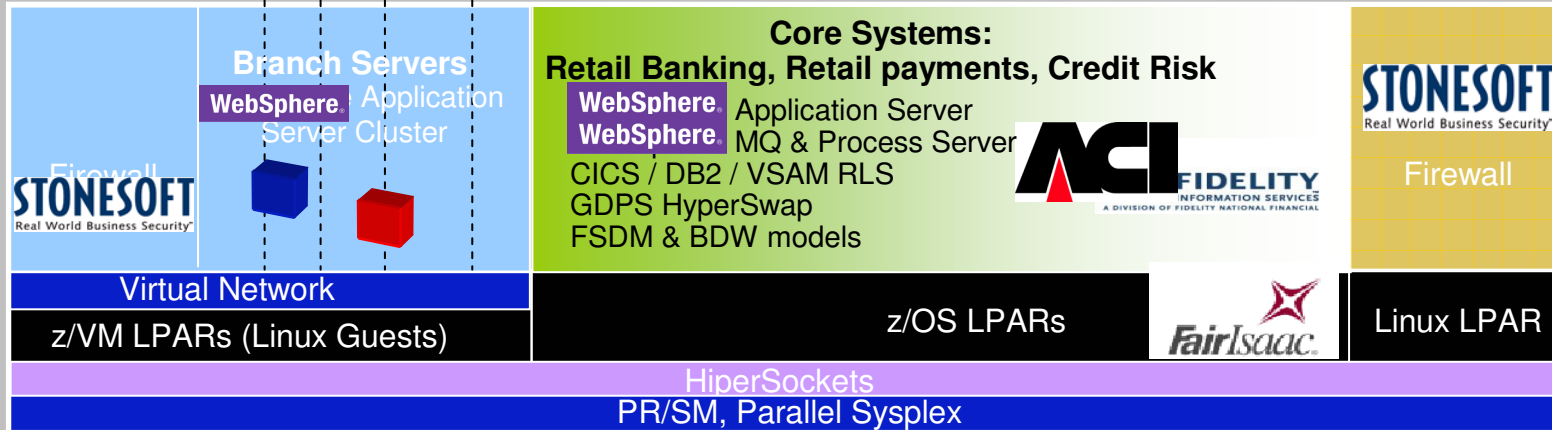
The SmartBank is designed to

- Demonstrate the linkage between infrastructure and business value – through a set of SOA inspired scenarios representing banking pain points and opportunity areas
- Showcase an IBM infrastructure by creating live retail bank operating environments for on demand business
- Use a data center scale, realistic mix of workload that shows the value that IBM Systems, System Storage, Software and ISV components can bring can bring to help accelerate business transformation
- Demonstrate how you can leverage your existing mainframe investment
- Deliver knowledge through document of our findings as a Reference Architecture:

<http://www.redbooks.ibm.com/abstracts/SG247113.html>

SmartBank Showcase - delivers an optimized, resilient, heterogeneous infrastructure

IBM System z9™ Enterprise Class



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You can jumpstart your SOA success



- IBM Design Centers provide services to help drive successful first-of-a-kind advanced solutions in the marketplace: <http://www-03.ibm.com/systems/services/designcenter/index.html>

- ITSO System z workshops: <http://www.redbooks.ibm.com/projects.nsf/WorkshopIndex/>

Engage with your IBM BP or IBM sales rep to be nominated for:

- Invitation Wildfire Workshops: <http://www.ibm.com/support/techdocs/atmastr.nsf/WebIndex/PRS1778>

Services engagements are available to transform your business:

- Learn more about ISSW services: <http://www.ibm.com/developerworks/websphere/services/>
- Learn more about STG lab services: <http://www-03.ibm.com/systems/services/labservices/>
- Learn more about GTS services: <http://www-935.ibm.com/services/us/index.wss/itservice/igs/a1025998>
 - NEW: IBM Healthcheck services for SOA Web cast: <http://www.kingfishmedia.net/emails/IBM/11.15.html>

Additional resources

- System z SOA homepage with links to customer testimonials, events – telecons and Web casts, analyst reports, white papers, etc: <http://www-306.ibm.com/software/os/systemz/soa/>
- WatchIT's SOA and the System z Platform Web video: <http://info.watchit.com/releases/izse.cfm> (link is at the bottom of page)

Redbooks of interest:

- Implementing & testing SOA on System z: A real customer case: <http://www.redbooks.ibm.com/abstracts/sg247502.html>
- Architecting Access to CICS within an SOA: <http://www.redbooks.ibm.com/abstracts/sg245466.html?Open>
- Infrastructure Solutions: Building a Smart Bank Operating Environment: <http://www.redbooks.ibm.com/abstracts/sg247113.html?Open>
- SOA Transitions Scenarios for the IBM z/OS Platform: <http://www.redbooks.ibm.com/abstracts/sg247331.html?Open>



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