IBM Systems & Technology Group

Why SOA on System z

- *A prescriptive approach*

Andrea Greggo

SW Specialist, IBM Executive Briefing Center

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

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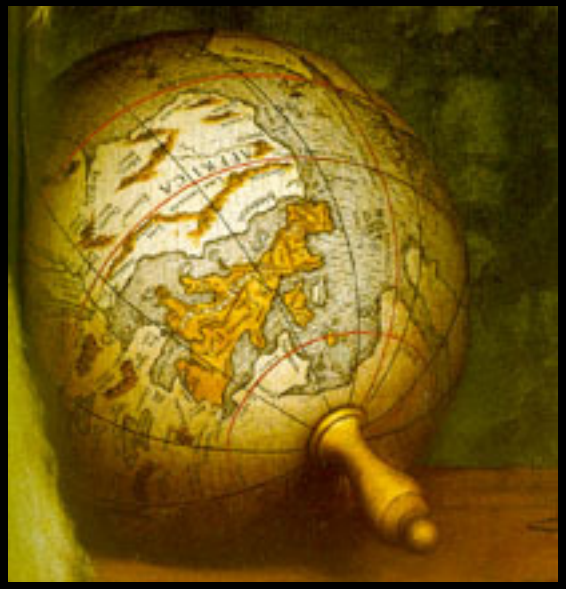

What We Do

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

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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

The reality of SOA
- Phases of SOA adoption
- Preparedness for disruptive IT technologies

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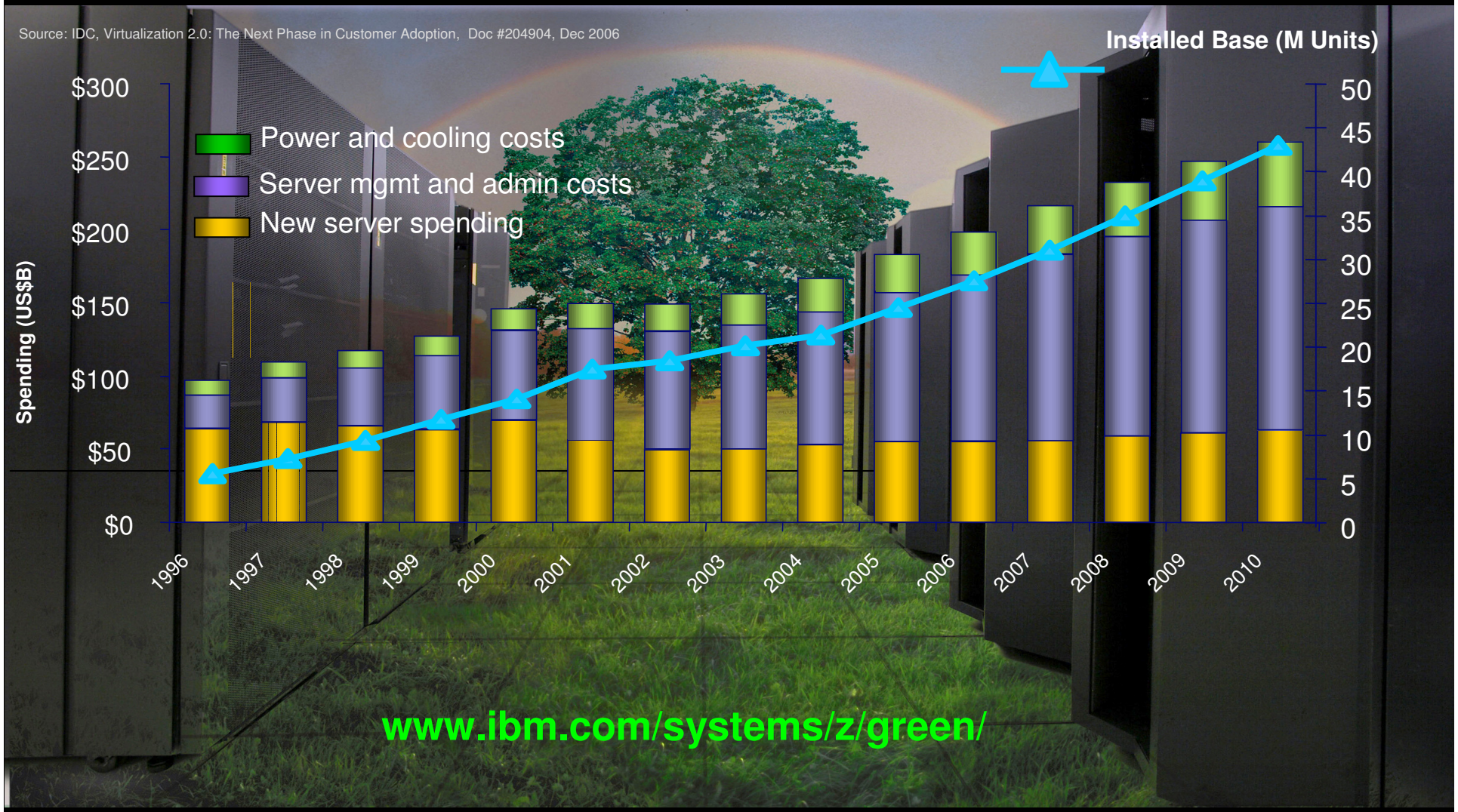
Creating a sustainable IT future



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

http://www.cio.com/article/121210

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

Hannaford

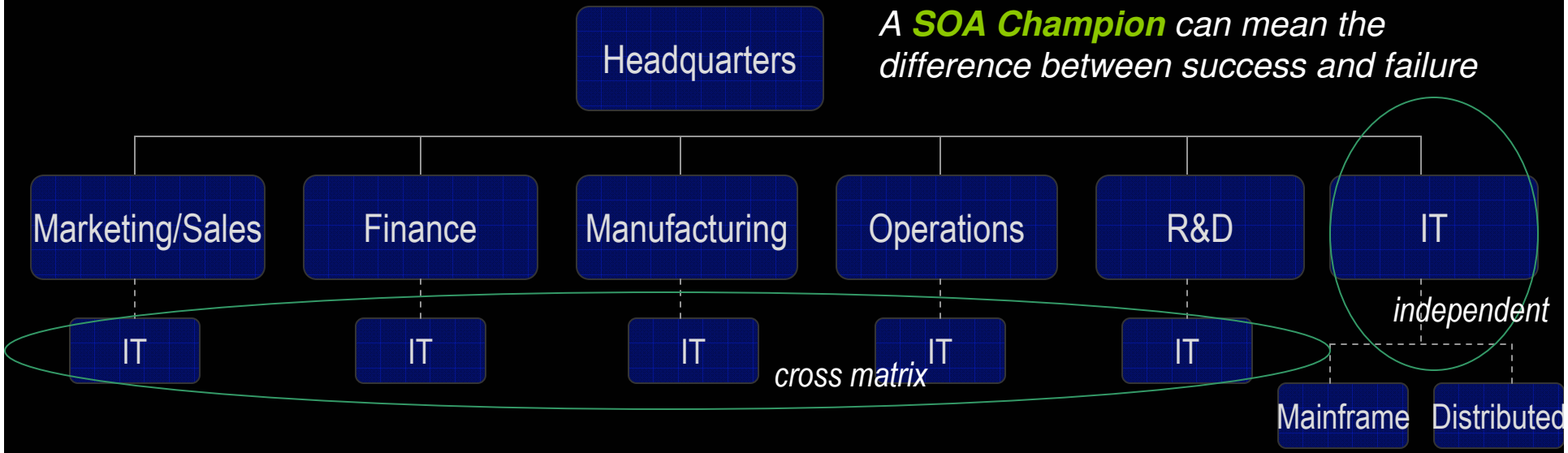
worldspan

Nationwide

IBM

WACHOVIA

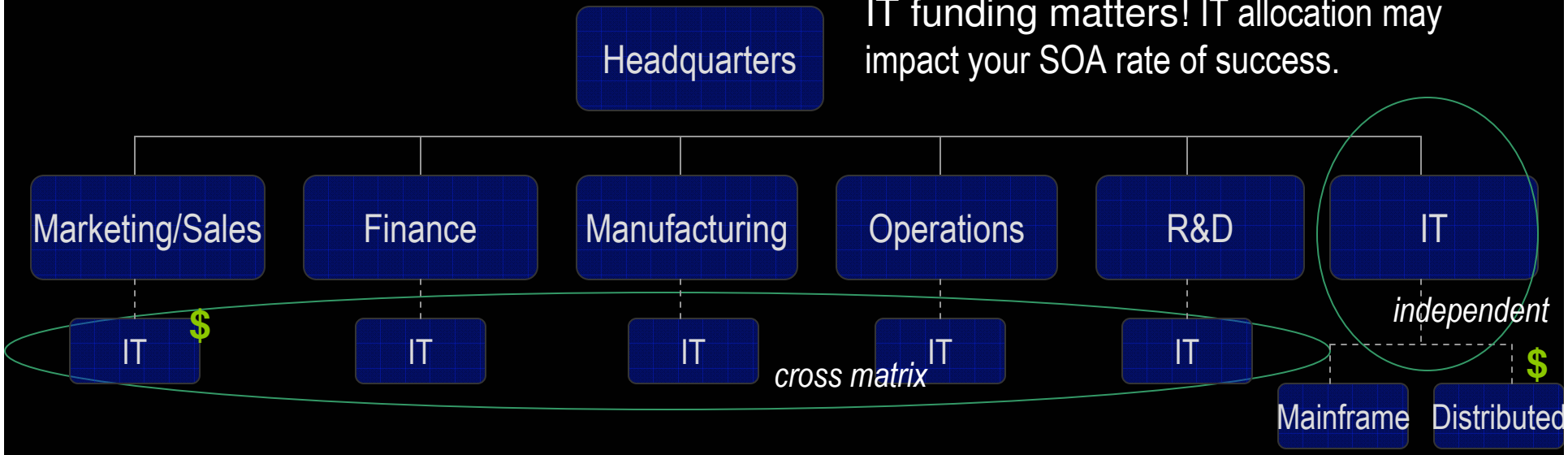
The enterprise at a glance



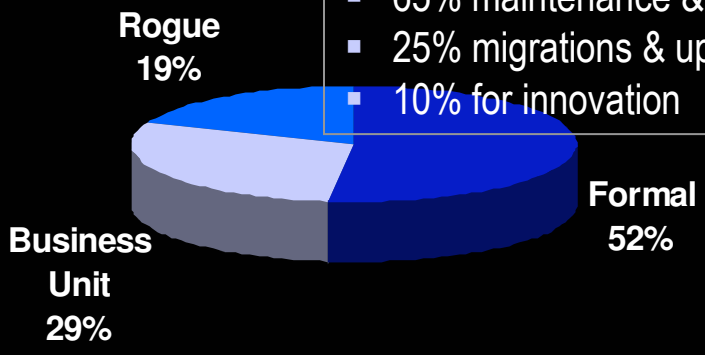
- Does your company have a business strategy that includes IT?
- How does your IT shop fit into the corporate organization - *independent operation, cross matrix, or both*?
- How integrated is your IT shop – *across disciplines, islands, or somewhere in between*?
- Is your IT organization divided - *mainframe & 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*.

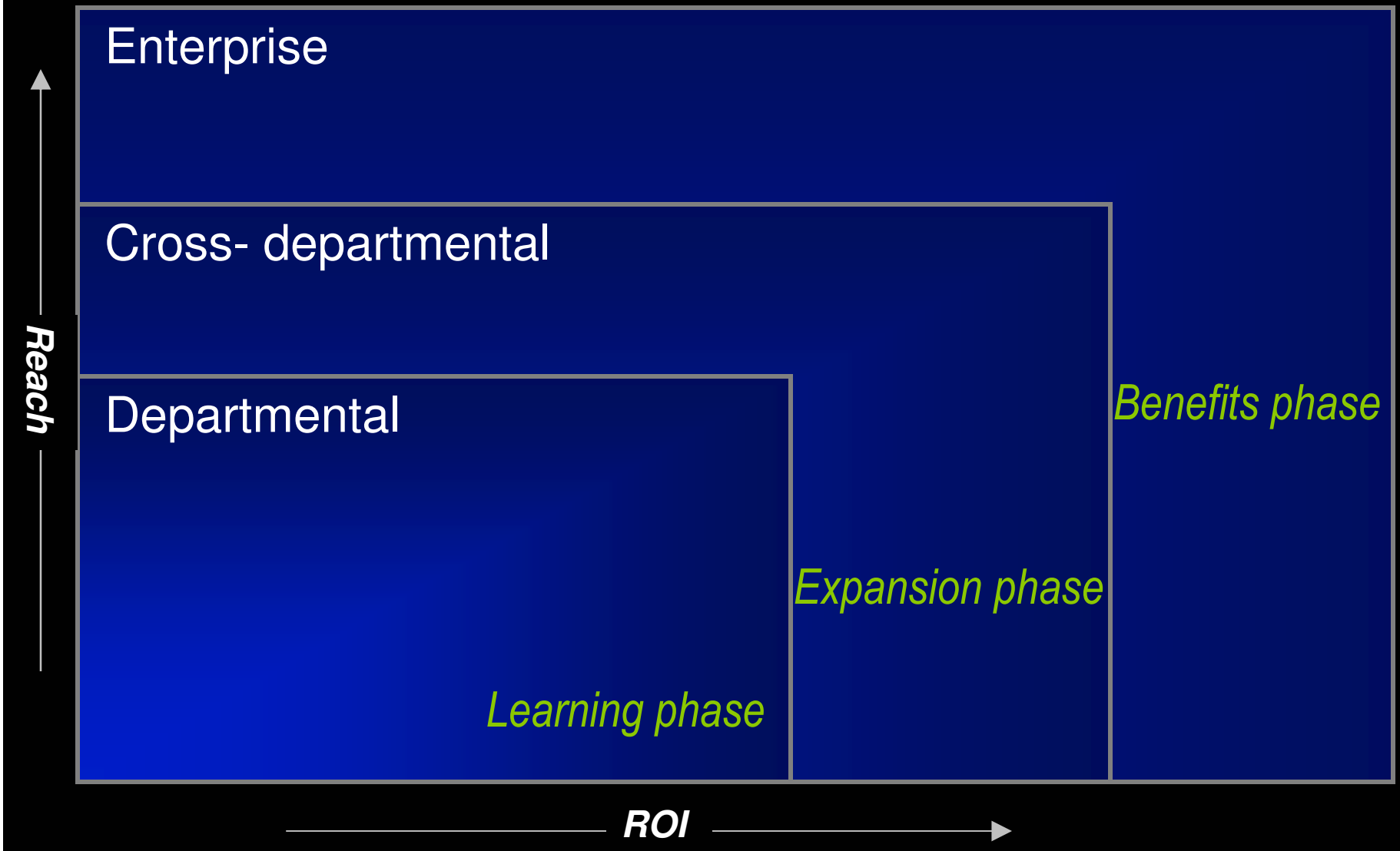
- Reduced complexity
- Improved time to market
- Increased business flexibility
- High return on investment
- Innovative business solutions
- Collaborative business culture

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.

- **Unified communications**
- **Business process modeling**
- **Metadata management**
- **Mash-up and composite applications**
- **Real world web**
- **Social software**

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

Gartner

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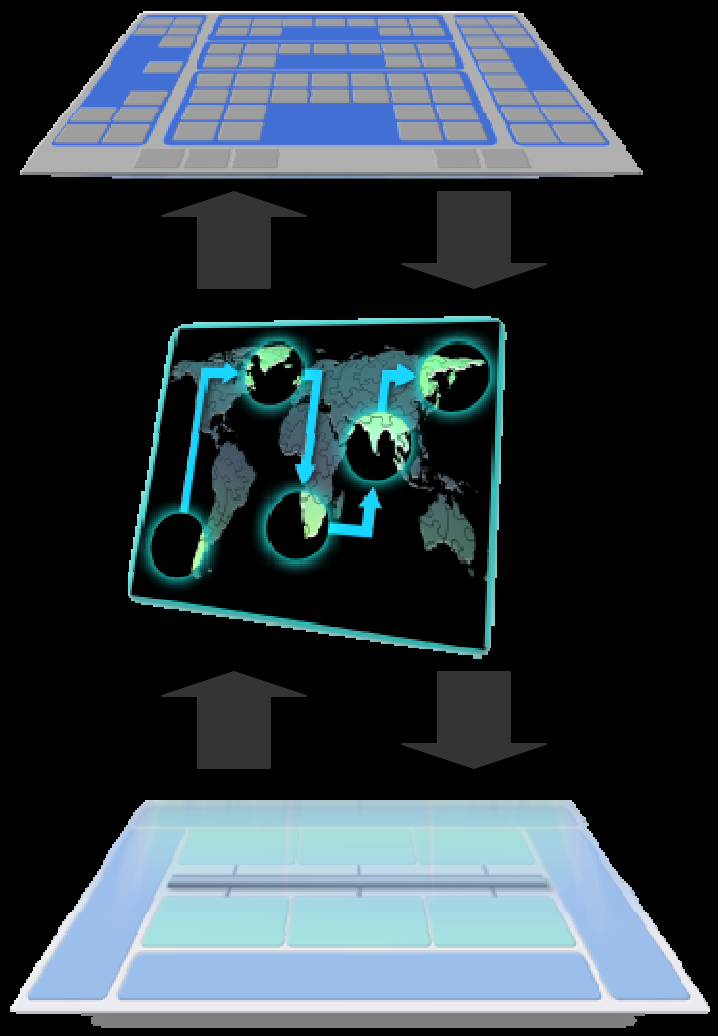
A *meet in the middle* approach to SOA on System z

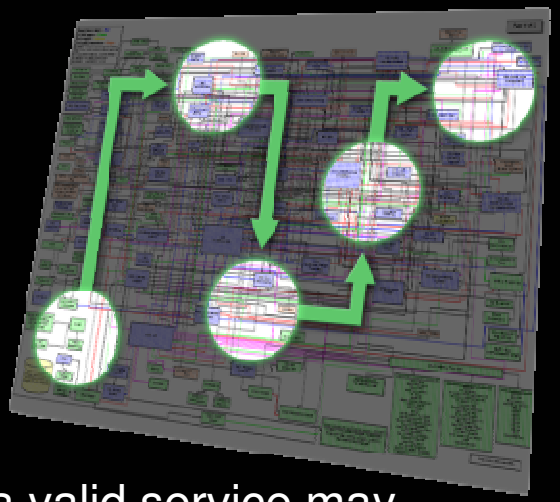


Begin with the business … focus on identifying the needs of the business

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



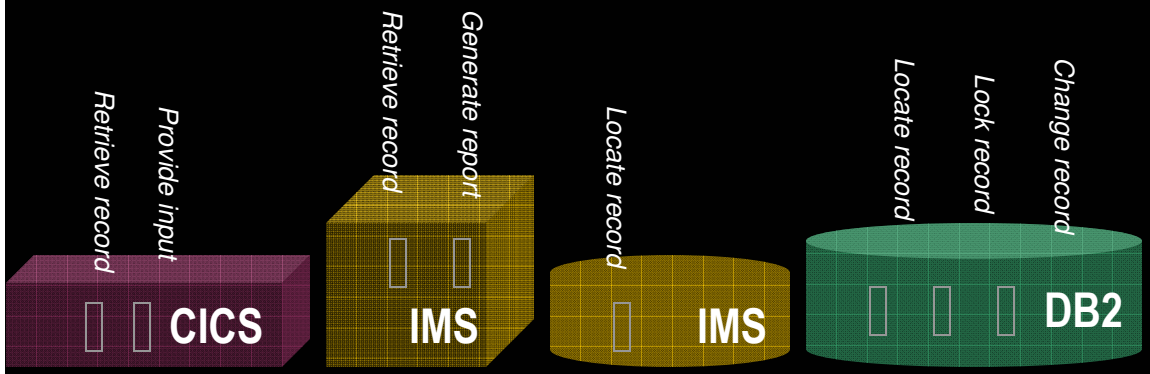
Begin by:

- Discovering your mainframe assets
- Understand their relationships

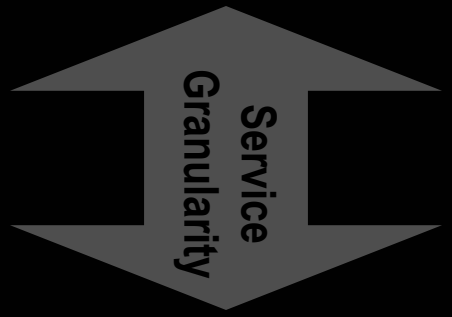
Sounds easy, right?

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



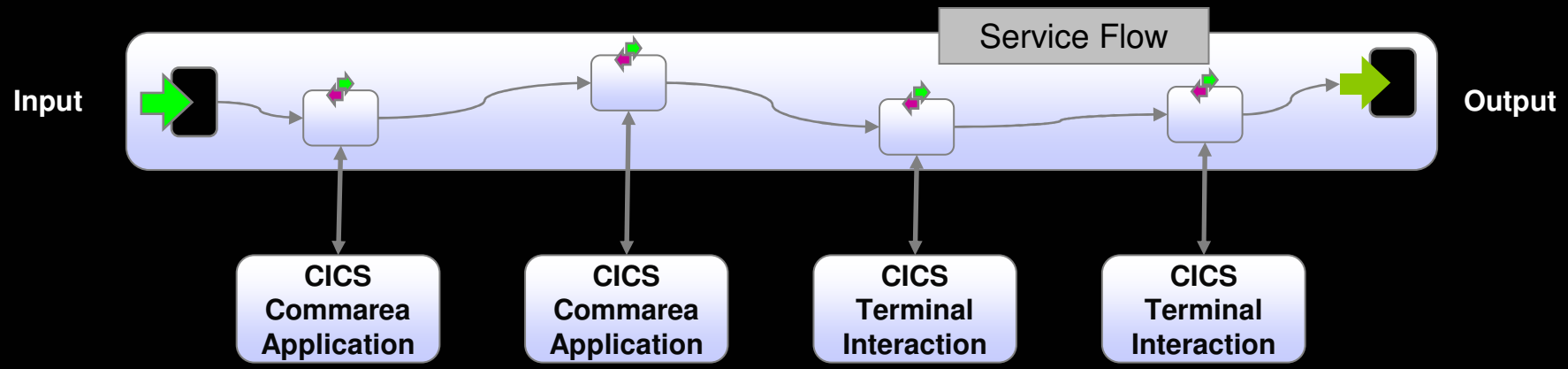
Services that are too fine grained provide little value

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

CICS introduces service flows to support SOA

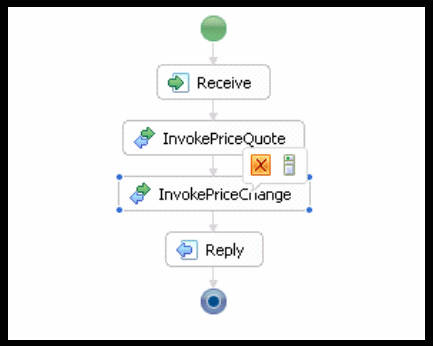
- A service flow is a non-interruptible micro-flow (or script) that is constructed from a collection of nodes that represent the invocation of CICS resources
- The flow describes the navigation of the nodes and allows data mapping between the nodes
- A single request may cause the execution of many CICS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



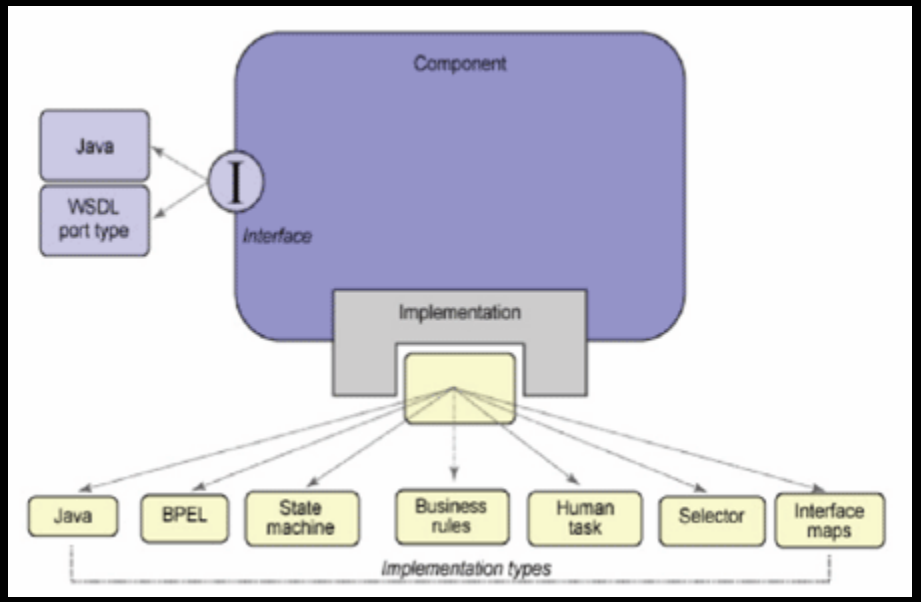
Business process integration accelerates SOA adoption

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

Integrate the business process

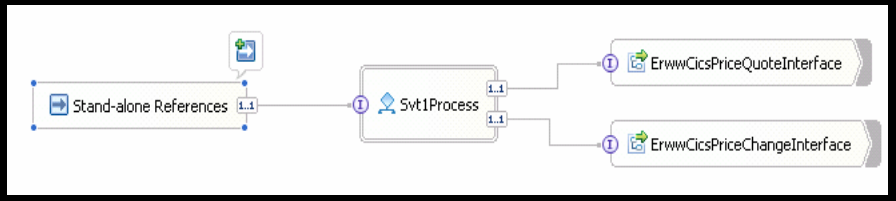


Example using WebSphere Integration Developer



Example of SCA usage in WebSphere Process Server

Assemble as an SCA module

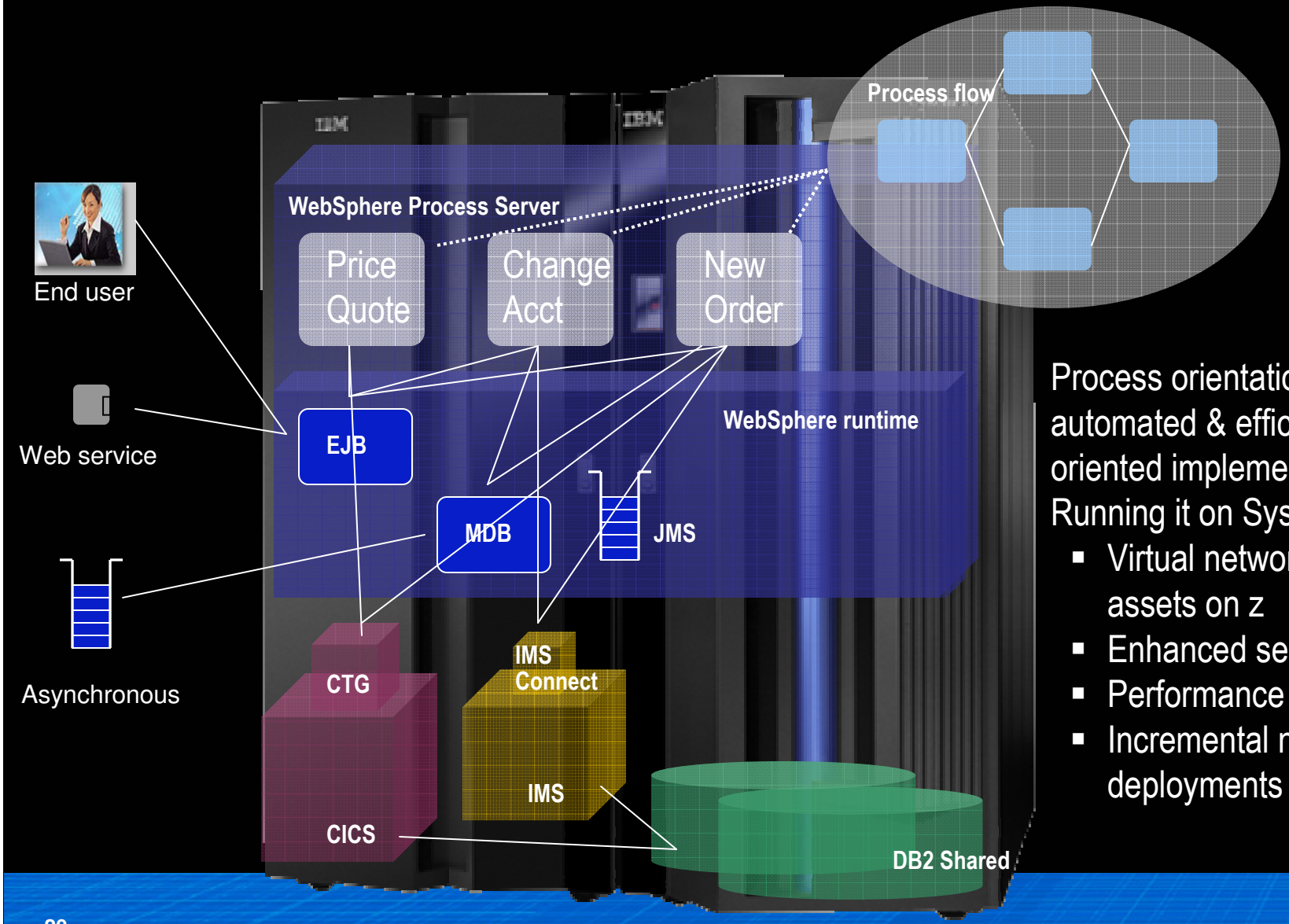


Example of the process implemented as an SCA module

SCA service modules support a standard…

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

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)

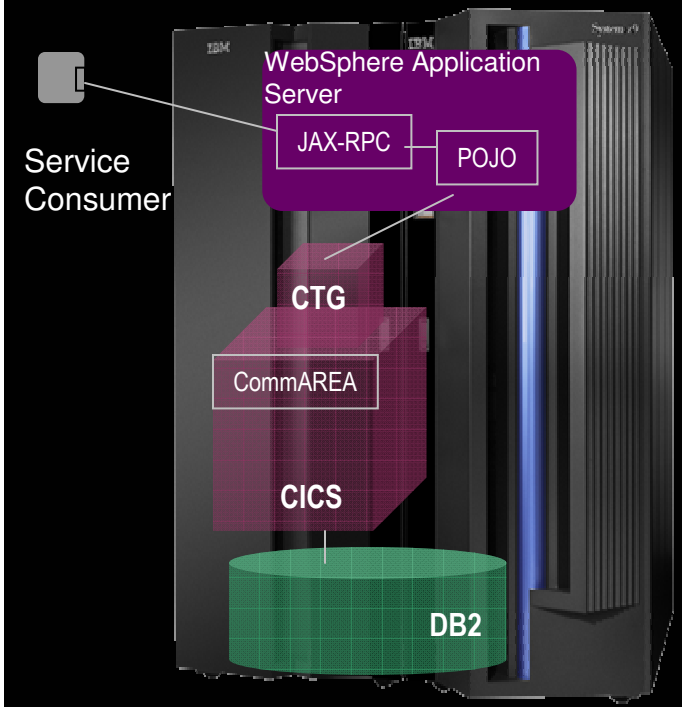
- Service enable existing CICS
  - Indirect exposure with WebSphere Application Server
  - Direct exposure
- Create a new service

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

Indirect exposure of CICS with 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:

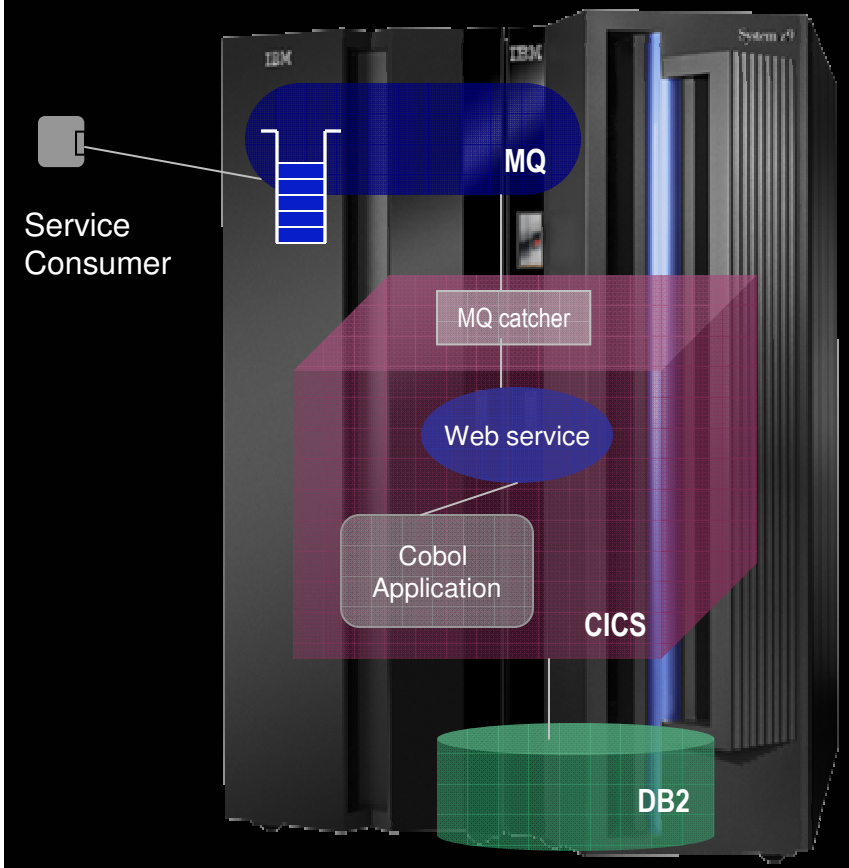
Security
- Multiple network authentication points
  - Encryption

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

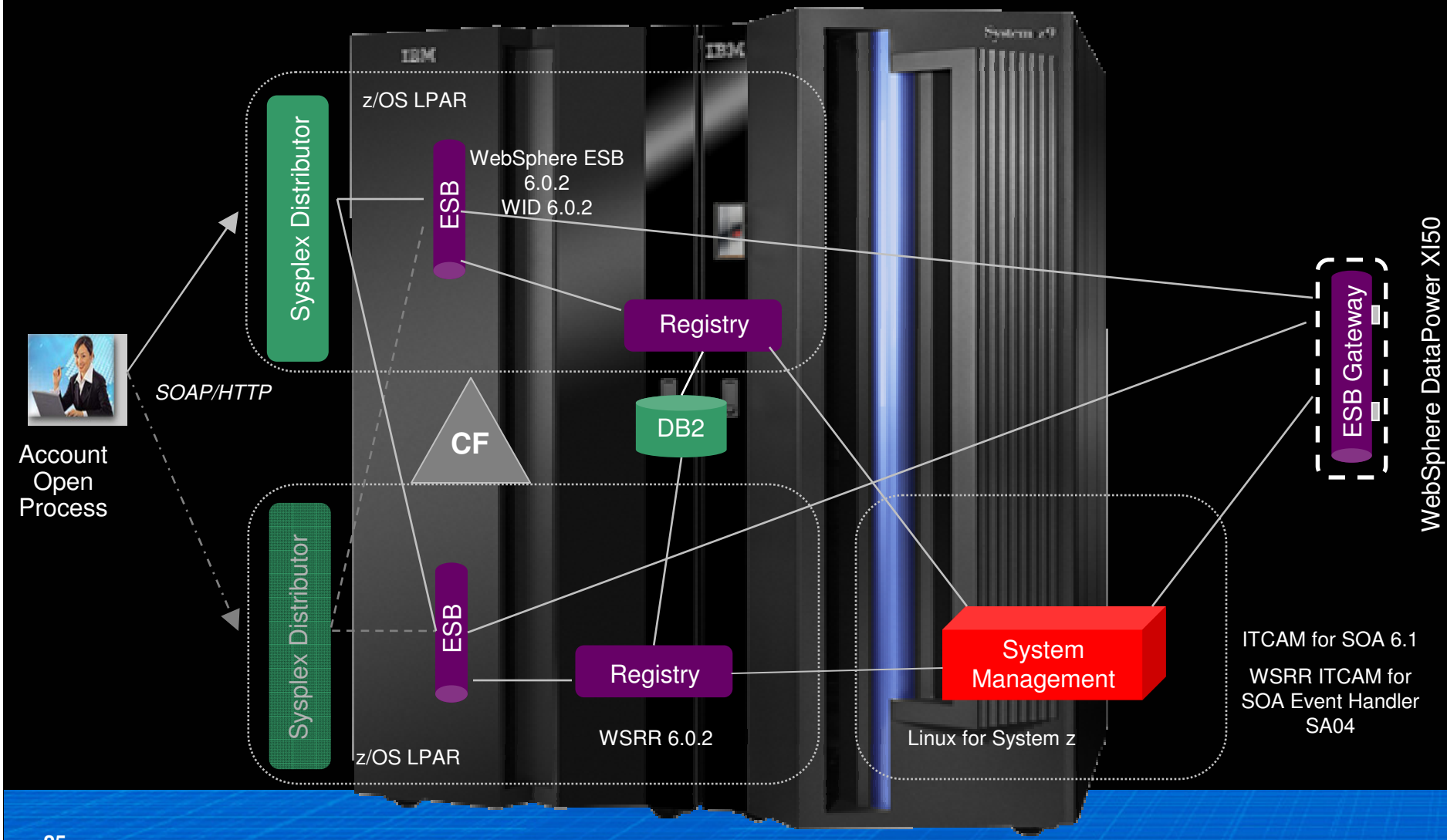
Direct exposure of CICS Transactions



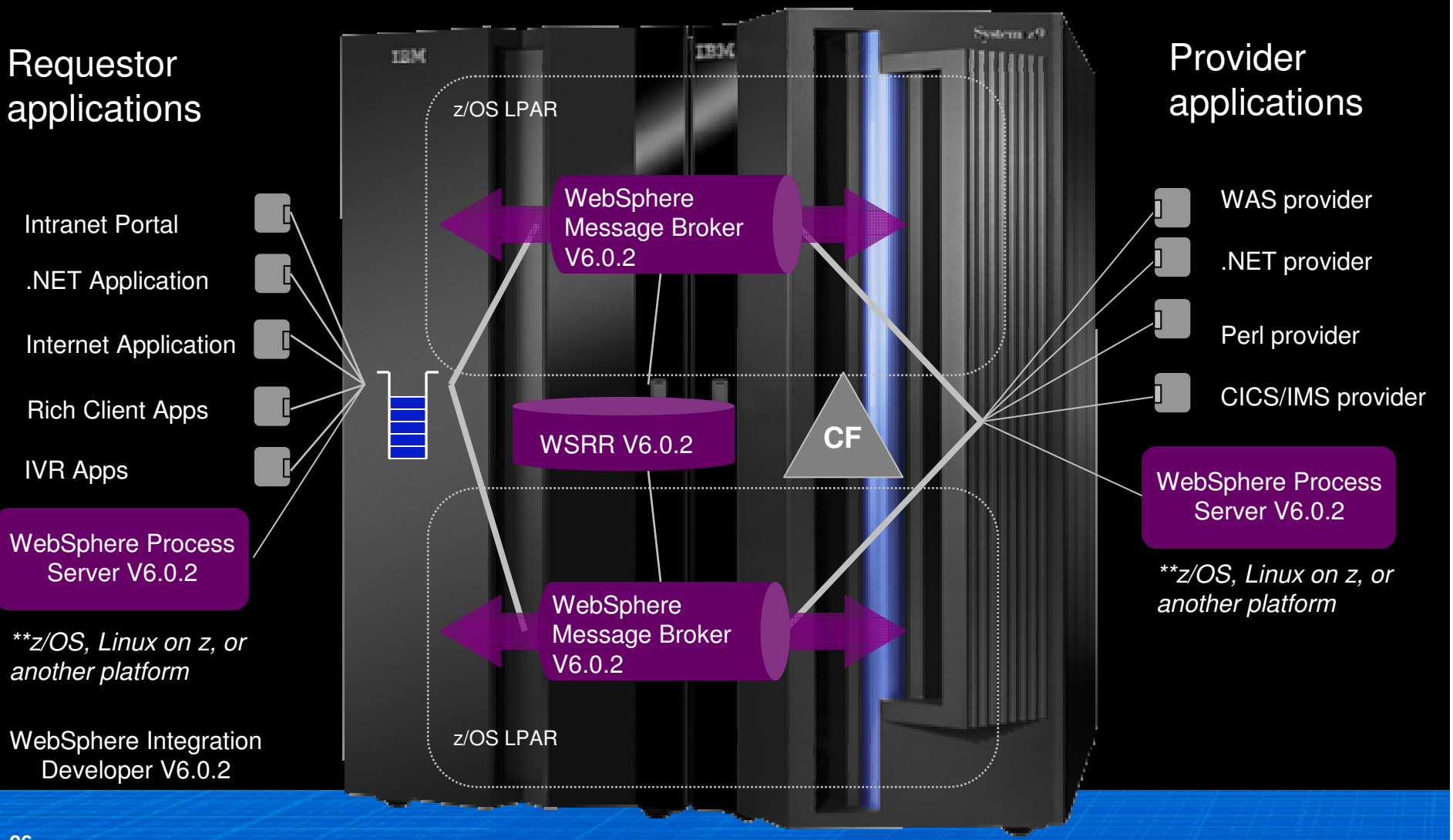
CICS V3.1:

- 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 open integration on System z



SOA business integration of process systems



System z supports Industry solutions

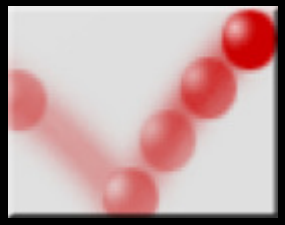
Across industries, common needs are driving customers to System z ..

Economics

Energy Efficiency

Security

Data Serving



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

Government

Financial Services

Automotive

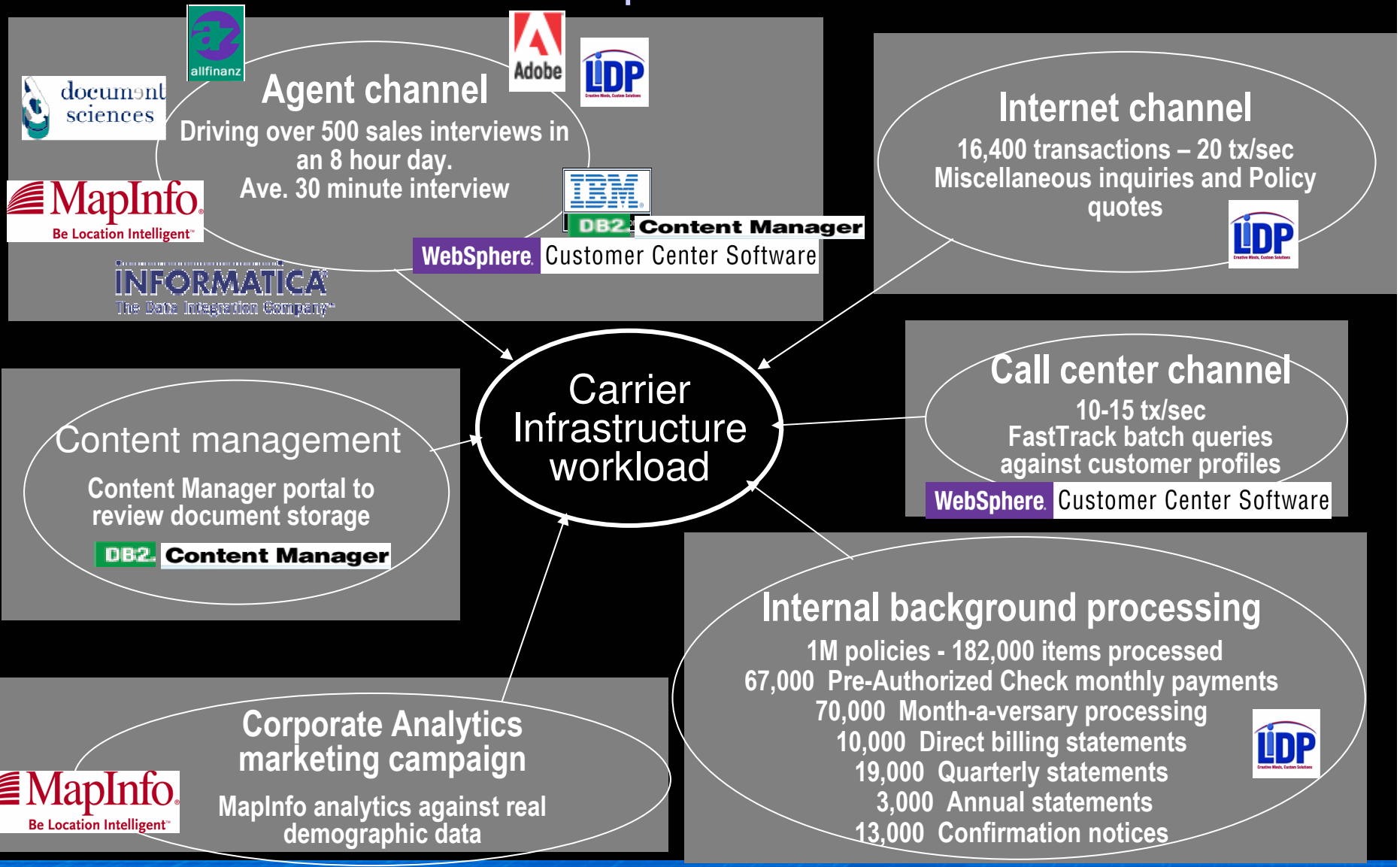
Retail

Electronics

Telecommunications

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

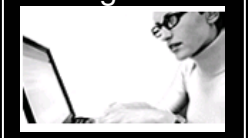
Insurance Showcase runs production workloads



Insurance Showcase - delivers an optimized, resilient, heterogeneous infrastructure

Channel Access Points

Agent



Call Center

Internet

IBM System z9™ Enterprise Class

WebSphere Portal Server

LIDP

allfinanz

MapInfo

INFORMATICA

- WebSphere Application Server
- WebSphere WBISF - choreography
- WebSphere Customer Center
- WebSphere Customer Center FastTrack
- CICS TS
- DB2

LIDP

Virtual Network

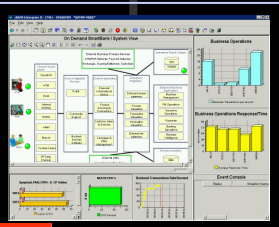
z/VM LPAR with Linux Guests

z/OS LPARs

DB2 Content Manager

HiperSockets

PR/SM, Parallel Sysplex



Tivoli Enterprise Portal
Infrastructure Management

Systems Management

IBM System p5™ 570

Adobe

document sciences

WebSphere Customer Center Software

AIX 5L™

IBM BladeCenter®

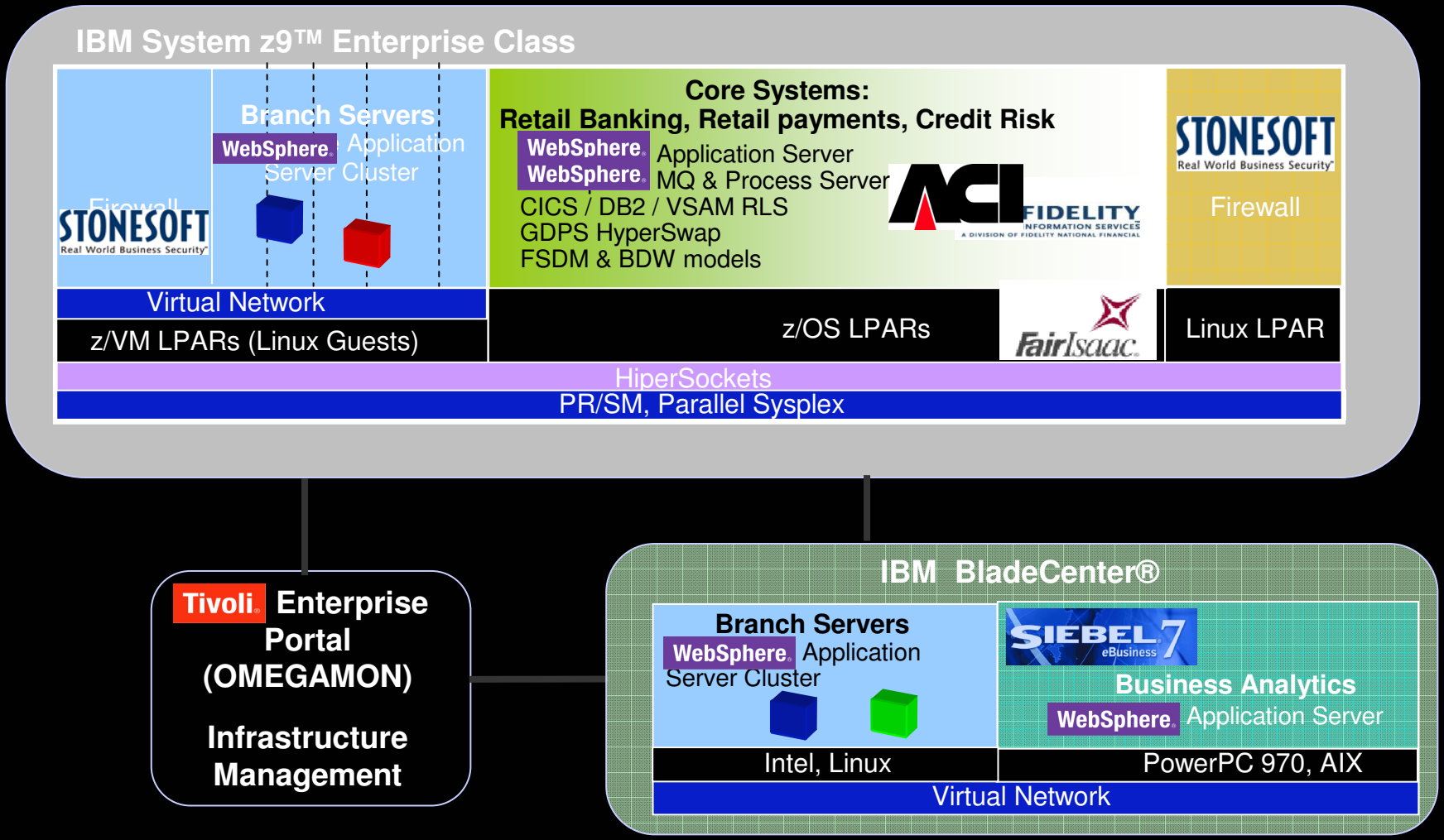
Adobe

Windows 2003 Server

IBM Workplace Forms

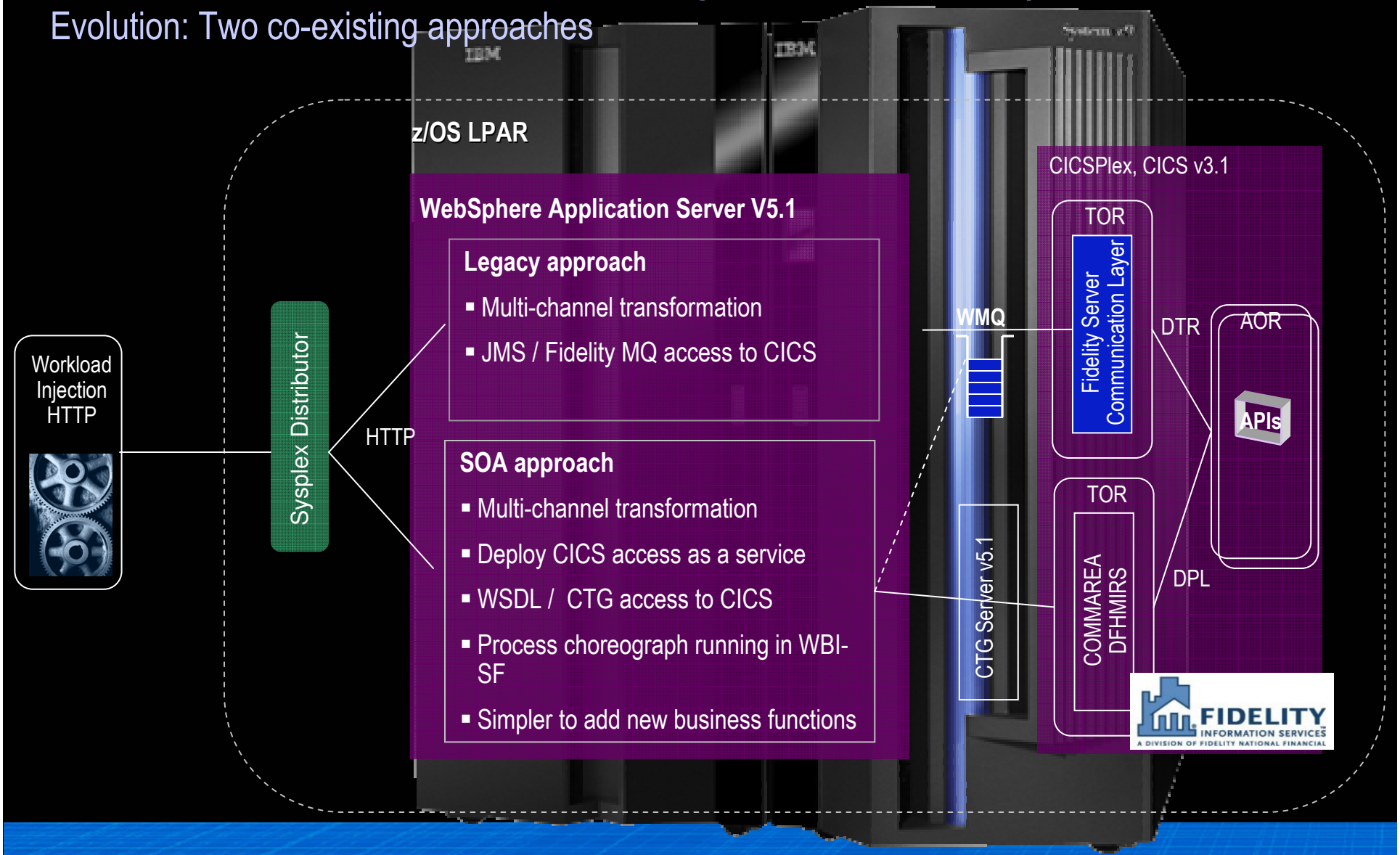
Linux 3.0

SmartBank Showcase - delivers an optimized, resilient, heterogeneous infrastructure



SmartBank Showcase - Linking new business processes

Evolution: Two co-existing approaches



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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/atsmastr.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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