System z – The premier platform for Enterprise Modernization

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The Modern Enterprise

System z delivers unmatched value for today's critical workloads

A comprehensive portfolio for business intelligence and data warehousing:

Information Management on System z

A large portfolio of leading applications growing ISV support:

Business Applications on System z

Industry-leading virtualization, management and qualities of service:

IT Optimization and Consolidation on System z

The premier platform for modernizing and optimizing IT service delivery:

Enterprise Modernization with System z

Customer challenges – Non-optimized IT enterprise architecture

Business Needs

- Continuous pressure to deliver new business value
- Rip and replacement of core business applications are too high risk
- Reduced flexibility to adapt to changing business requirements
- Core business processes lack real-time integration

Resources

- High cost to maintain legacy assets
- Non-portable skill sets
- Redundancy in IT operations
- Integration of silo'ed architectures consume development and operational resources

Technology

- Complexity prevails – Silos of legacy and modern assets slow innovation and reduce QOS
- Stagnant technologies lack modern integration and delivery capabilities *(Web 2.0, mobile….)*
- Multiple data architectures make Business Analytics challenging

IT CONSTRAINED ENTERPRISE PRESSURES

System z is the Premier Platform for Enterprise Modernization

Preparing for the new risks of a more connected and collaborative world.

Reduce Risk

- ✓ Automatically transform legacy software assets to modern languages while preserving your investment in the core business logic that runs the enterprise.

Achieving breakthrough productivity gains tomorrow.

Lower Costs

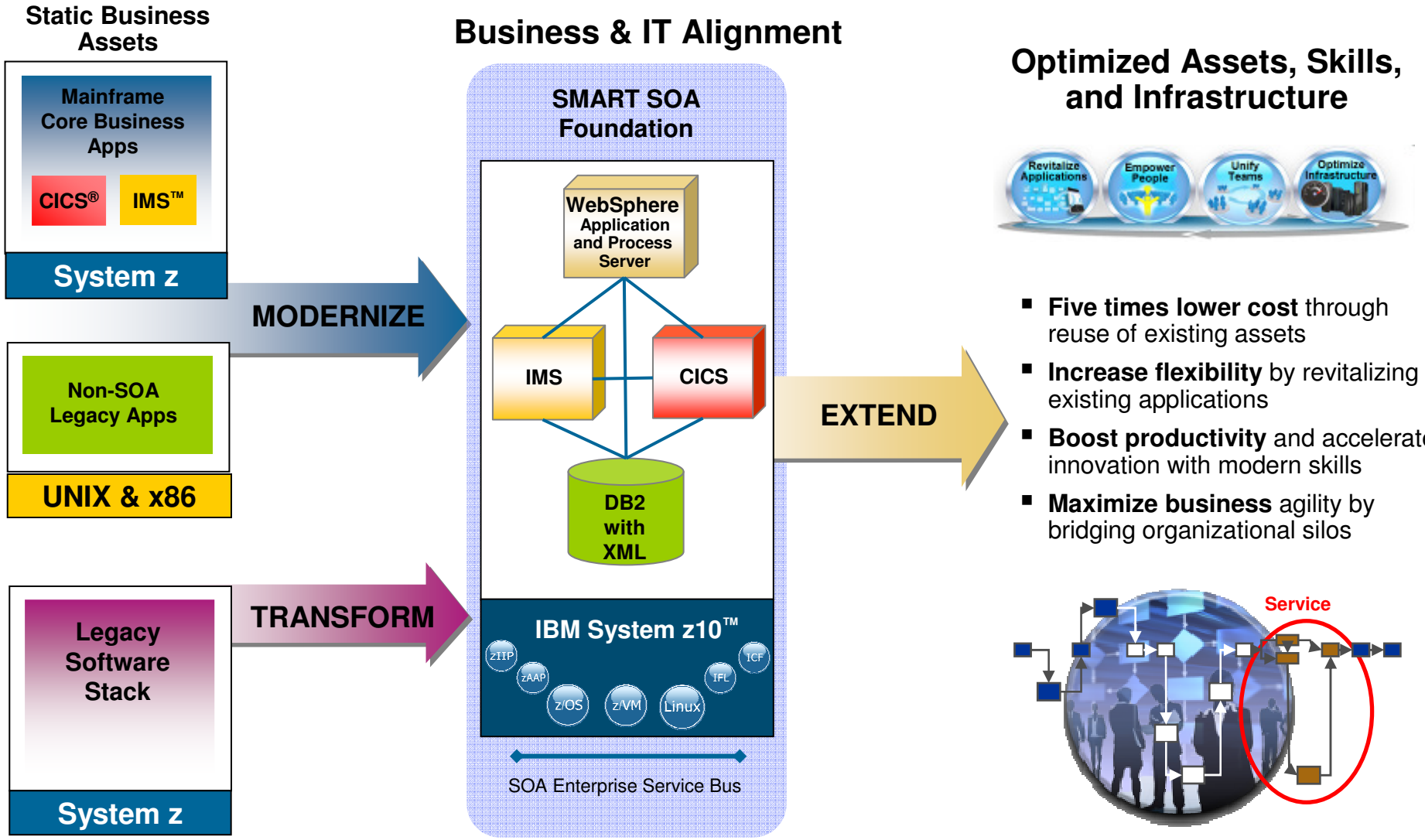
- ✓ Service, Web or Event enable your existing applications to promote reuse of core business functionality, automate handling and response to business events, and extend the ROI of exiting investments.
- ✓ Reduce the cost of deploying new applications that by leveraging Solutions Editions pricing for WebSphere and System z specialty engines.
- ✓ Boost productivity and accelerate innovation by standardizing on a common set of development tools and by leveraging a collaborative application lifecycle management solution to help unify teams and skills across the enterprise.

Providing for real-time, dynamic access to innovative new services.

Improve Service

- ✓ Dramatically reduce time to value for new capabilities to stay competitive in today's rapidly changing environment by enabling Lines of Business (LOB) to discover, implement, and managed business rules for existing mainframe applications.

Modernizing the Enterprise Through SMART SOA

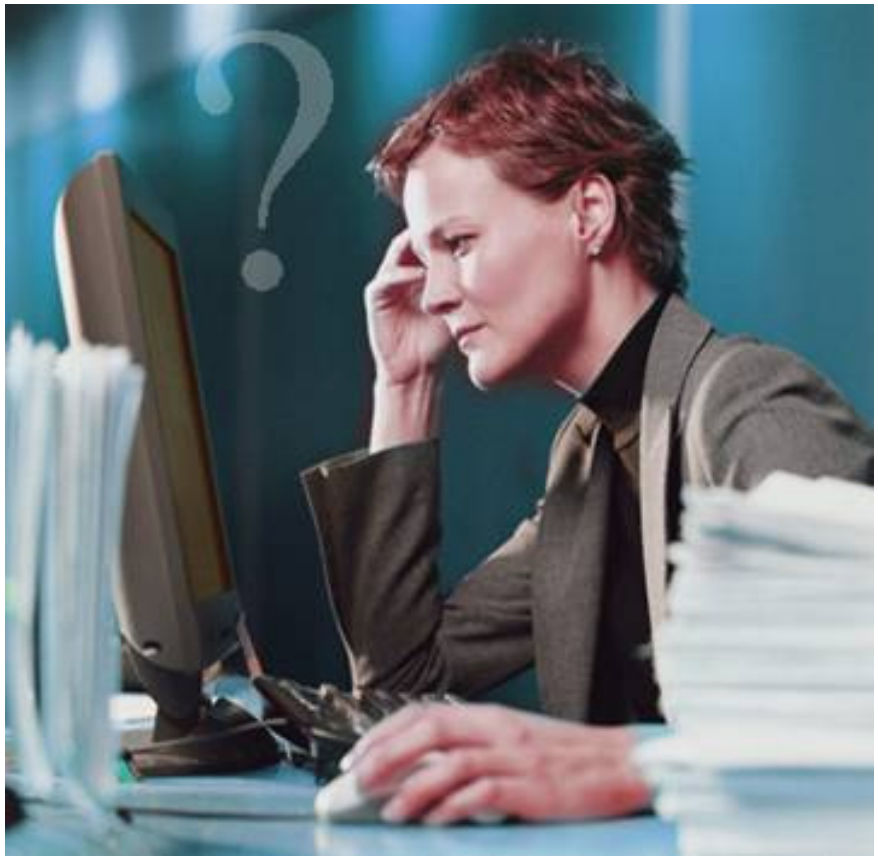


TRANSFORM

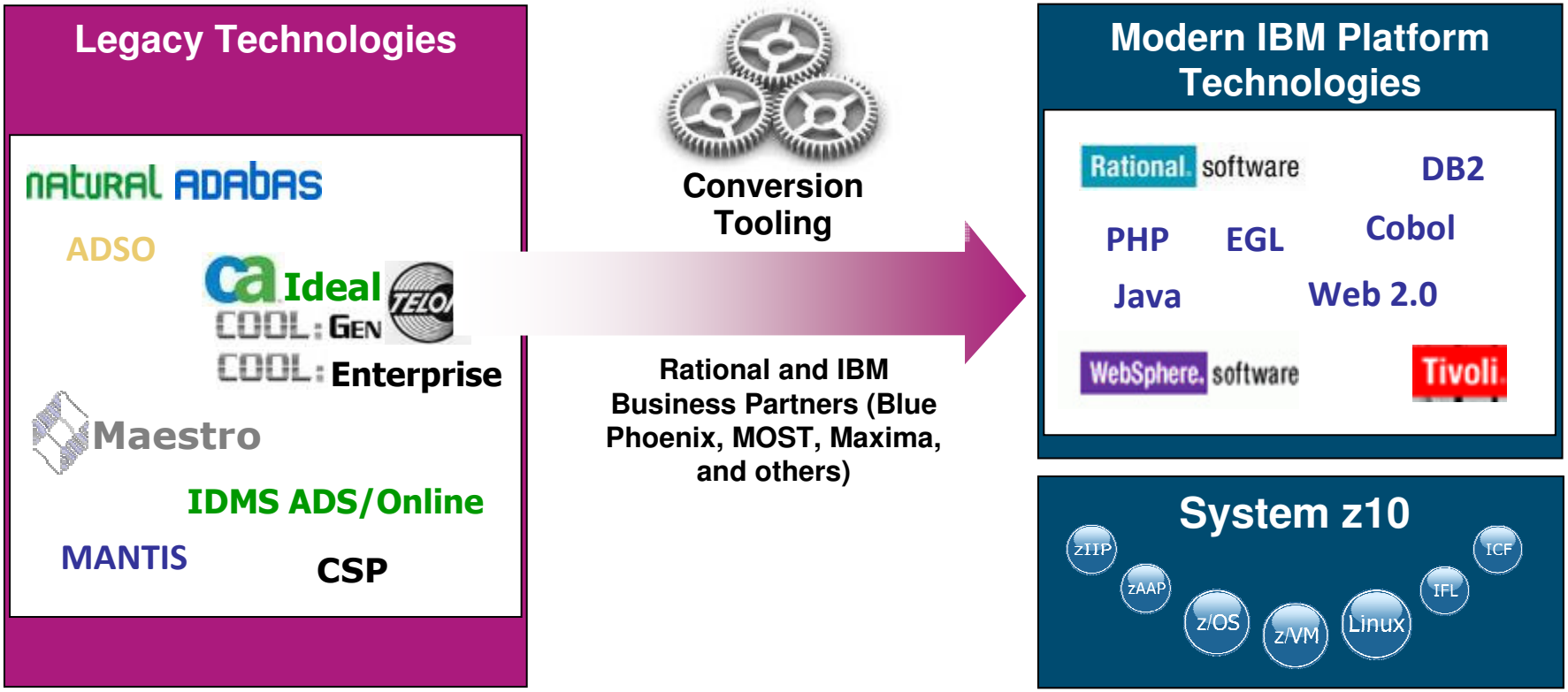
critical IT assets for agility

Application transformation challenges

- Major investment in older applications (time, money, effort)
  - This is tested, proven, business-critical code – it runs the business
  - Advantageous to reuse (harvest) as much as possible
  - Escalating software vendor maintenance fees for obsolete environments
- Maintaining separate tools for each platform
- Retraining, Retaining and Attracting talent
  - Advantageous to leverage existing IT staff and skills



Enterprise modernization solutions – Migrating customers to modern languages and technology



- Establish a Modern, Flexible Application Development Platform
- Reuse of Existing, Mission-critical, Production Tested Software Assets
- Maximize the Existing In-house IT Skills & Domain Expertise

Case study – Montreal Informatica

Business challenge:

To seize a marketplace opportunity to help its clients modernize their legacy enterprise systems, move away from Natural/ADABAS technology and to provide a flexible platform for core business applications moving forward.

Solution:

Working with IBM, Montreal Informática conducted a proof of concept project using IBM Rational Business Developer, IBM Rational Migration Extension for Natural and IBM DB2 information management software together with Enterprise Generation Language (EGL) technology to modernize a legacy Natural/ADABAS application.

Results:

Montreal Informática has seen increased developer productivity. Developers from a range of backgrounds learned EGL rapidly, enabling Montreal Informática to use the same developers for building batch and online systems. The successful pilot project has opened new business opportunities because the company now has the ability to automate much of the transformation process, while offering clients a choice of deployment platforms.

"At the beginning of this project I was a bit skeptical. I have almost 30 years of IT experience. After the first Discovery and Analysis delivery, I was surprised because it was really very good. I see that with the right skills, developers are very productive. I am very enthusiastic about the results and about the future of enterprise modernization at Montreal Informática."

— Mauricio Alvarenga, IT manager at Montreal Informática

M.I. MONTREAL INFORMÁTICA

MODERNIZE

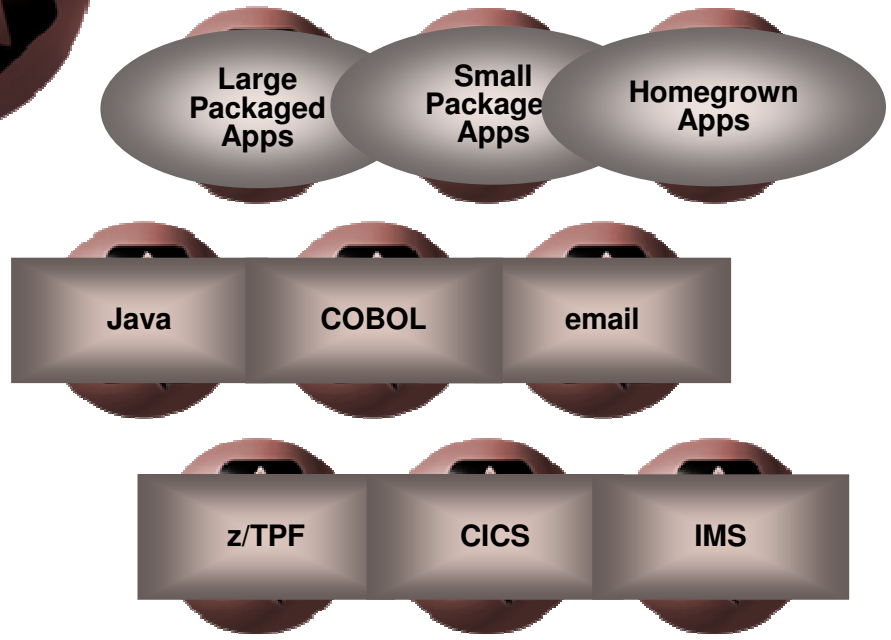
to System z with Smart SOA

Reuse business applications

Enable agility required for smart business outcomes

Get More Value from Applications & Expand Business Opportunities

- Service-enable existing packaged and existing apps
- Create new, reusable services
- Extend reusable services to the web
- Consume external reusable services



Benefits

- Extend ROI by reusing prior investments
- Reduce risk and costs by leveraging robust applications
- Speed time to market with faster development cycles

The Right Platform for Any Situation
SOA Enabled Integrated Application and Transaction Environment

IBM WebSphere Application Server for z/OS

Modernize and transform your environment

IBM WebSphere Extended Deployment Compute Grid for z/OS

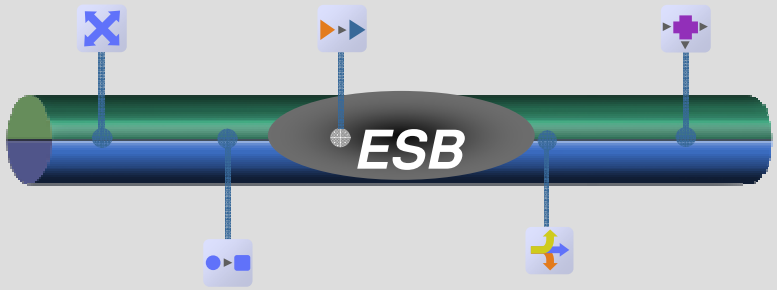
IBM CICS Transaction Server and CICS Explorer

SOA enabled Modern OLTP Platforms

IBM IMS Transactional and Database Manager

IBM WebSphere MQ for z/OS

- Connects everything to everything
- Transform data formats
- Transport protocol conversion
- Deliver Business events
- Matches & routes communications between services



Optimize Costs by:
Integrating new customers and partners up to 80% faster, Improving performance more than 10x - with lower costs, and Achieving full ROI within as few as 6 months

IBM WebSphere Message Broker for z/OS

IBM WebSphere Enterprise Service Bus

IBM WebSphere DataPower Integration Appliance

WebSphere Application Server for z/OS
Integrated Mainframe Values – Open Standards Flexibility

Business Applications

Value-add Middleware

Open Standard Application Programming Model

WebSphere Application Server for z/OS

Passive Qualities of Service

Value attributes of the operating system

Active Platform Exploitation
- Workload Mgmt
- Security
- Transaction Mgmt
- Thread Management
- Scalability
- Recovery

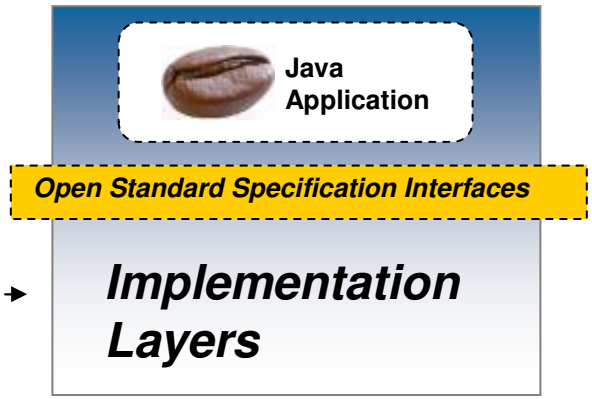
Value attributes of the hardware

Read the Whitepaper on Value of WAS on z/OS

ACTIVE **Areas of exploitation for WAS on z/OS**

1. **Exploitation of SMP/E**
2. **Exploitation of JES and common z/OS facilities**
3. **Exploitation of zAAP specialty engines**
4. **Exploitation of WLM**
5. **Exploitation of RRS**
6. **Exploitation of SAF and Crypto**
7. **Exploitation of SMF**
8. **Exploitation of z/OS exclusive Cross Memory Communications**

These are all z/OS value attributes

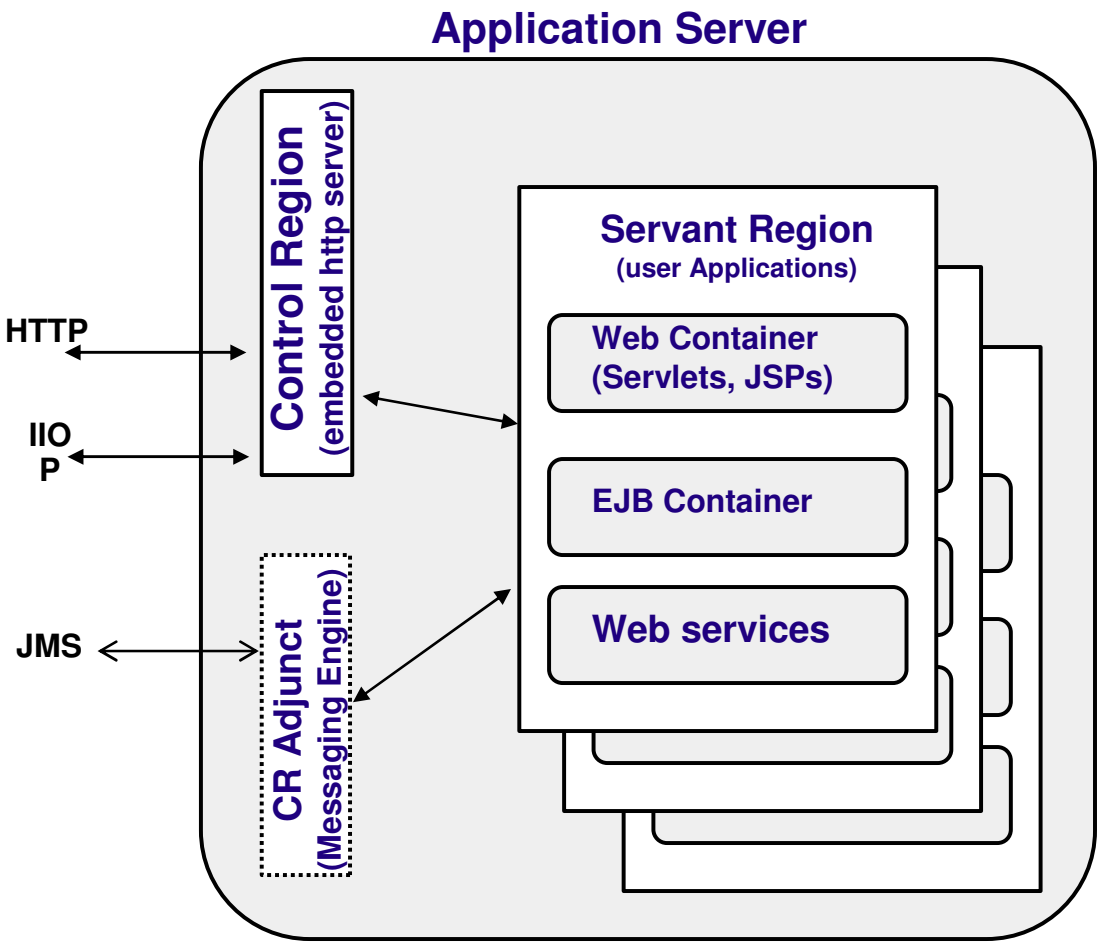


WebSphere is WebSphere up here. It's all based on accepted standards.

Exploitation taking place below the open standard interface line.

WAS z/OS internal architecture – very different!

- z/OS implementation uses a “master-slave” hierarchy
  - This architecture is at the heart of CICS and IMS also
- A WAS “Control Region” distributes the application work to its “Servant Regions”
- This is key to understanding the value of WAS on z/OS
- This is what brings the business value



Example ACTIVE Exploitation – Workload Management (WLM)

Many view WLM exploitation as the heart of the platform exploitation model for WAS z/OS. There are four main elements of this exploitation …

Intelligent Dynamic Capacity Expansion	Intelligent Workload Flow Control	Intelligent Management of Mixed Work in Server	Intelligent Workload Routing Advice
The ability to increase the number of JVM instances based on WLM goals and configuration settings. This is the "Controller / Servant" structure you may have heard about.	An element of the Controller/Servant structure. Inbound work is queued and held, waiting for a thread to select it, based on importance and arrival. It's a pull model rather than a push. Applications in JVMs take only what they can handle.	Multiple servants allows differently classified work to be placed in different servant regions. This allows WAS/WLM to understand what kind of work is in each and to manage system resources accordingly.	WAS z/OS using WLM to determine where best to route certain kinds of work

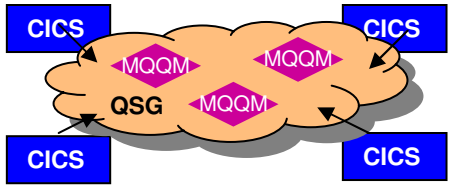
The key is the controller / servant architecture …

CICS is at the heart of smart business

Revitalize Business

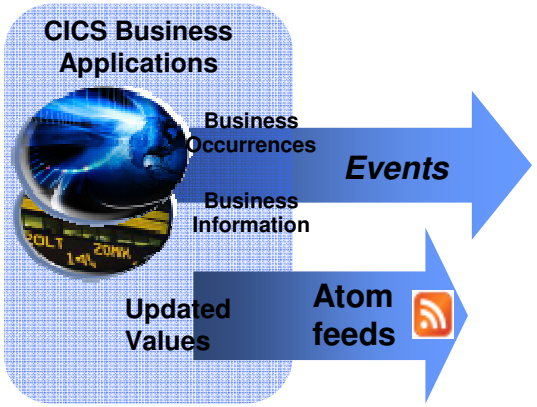
"Real-time visibility for smarter decisions and actions"

Integrated Tool Solutions



Tighter MQ Integration

Event source for Dynamic Business Networks



Integration for LOB and COBOL business rule mgmt.

Revitalize Infrastructure

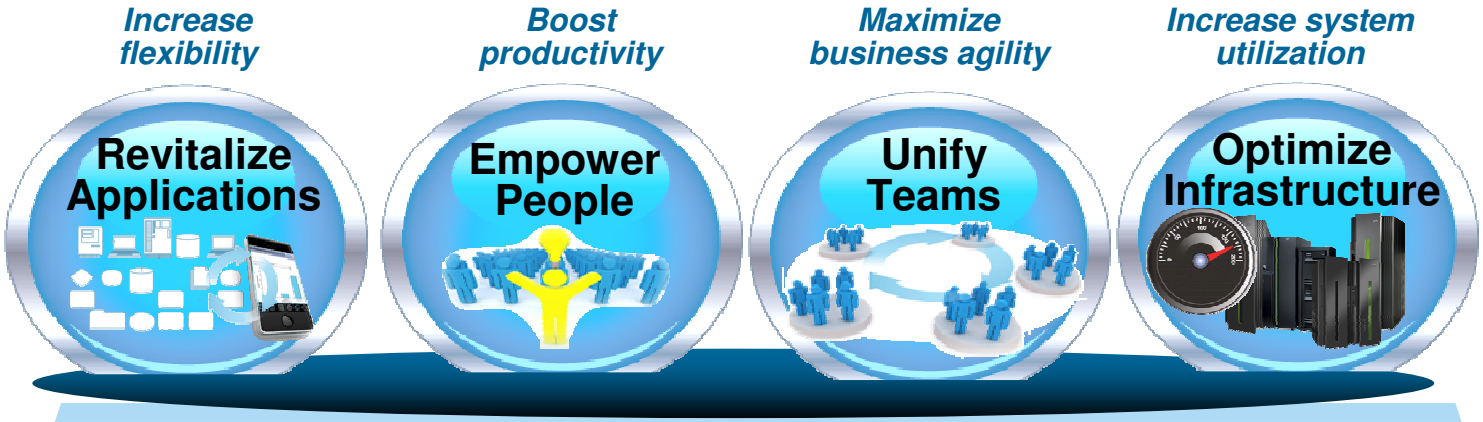
"Greater efficiency and reduced costs"

Revitalize Applications

"Faster and easier to respond to change"

IBM Rational Enterprise modernization solutions can help

Optimize your applications, people, team and infrastructure investments

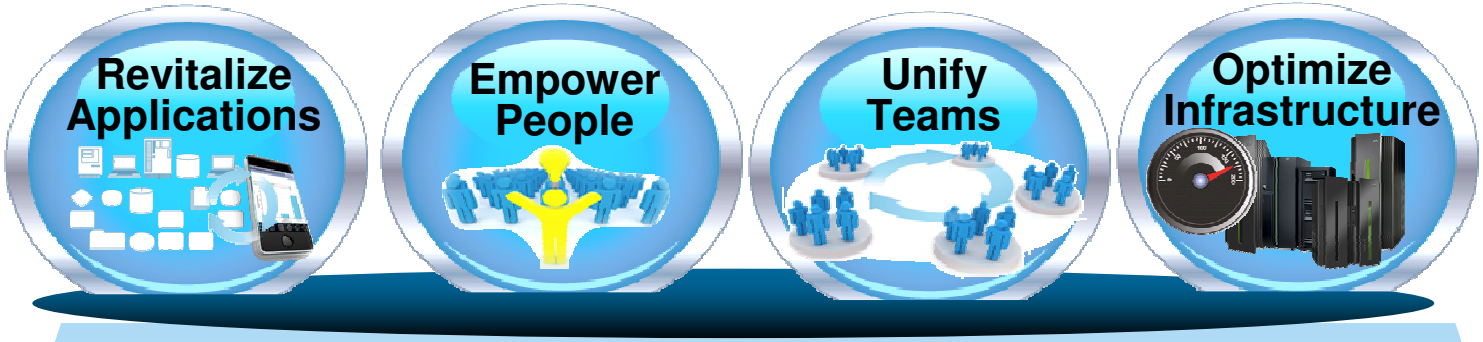


- **Increase flexibility** by revitalizing existing application portfolio
- **Boost productivity** and accelerate innovation with modern skills
- **Maximize business agility** by bridging organizational silos
- **Increase system utilization** by optimizing application infrastructure

Rational Software Delivery Platform *powered by* Jazz

IBM Rational Enterprise modernization solutions can help

Optimize your applications, people, team and infrastructure Investments



- Business intelligence for applications
- Enterprise architecture and portfolio mgt
- SOA tools for all platforms and languages
- Operational reuse
- UI modernization

- Modern IDEs for all platforms and languages
- Modern business language
- Training

- Consolidated, agile team infrastructure

- Advanced compiler technology

Rational Software Delivery Platform *powered by* Jazz

UniCredit

Improves developer productivity and testing efficiency for mainframe development

The challenge

- Modernize its development platform for core financial business software
- Development and testing efficiency for new and existing applications
- Make COBOL development more attractive to younger programmers

Solution

- More than 200 developers began using IBM Rational Developer for System z software to develop applications for IBM System z servers with IBM DB2 and IBM Information Management Systems software

NYS Department of Taxation and Finance
Modernizing applications with System z

What's Smart:

- Deployed an SOA solution that leveraged existing assets.
- Delivers faster execution.
- Easily adaptable and fast to implement.
- Open to new technologies.

Business Value:

- A single view of constituent data
- Cross-agency integration
- High Quality of Service
- New revenue generating opportunities

The new SOA infrastructure provides the needed structure to meet public sector demands of servicing the constituent needs along with the needs of the business.

EXTEND

to new value with System z

Insight contained in business events all around us

What is a Business Event?	An action that has occurred, or the absence of it occurring, which has relevance to the business

Nearly **4 Trillion** RFID events are emitted each day

Large companies can experience up to **800 Billion** business events (shipments, weather, customer contacts, delays) daily

Over **190 Billion** emails are sent daily

Business events in the right business context enable proactive management

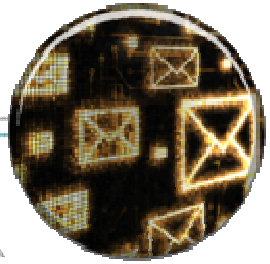
Event
POS purchase

Business Context
2nd purchase in a week and total purchases this year > $1000

Action: Offer loyalty program membership before customer leaves the store

Event
No meter signal

Business Context
Third consecutive period without signal



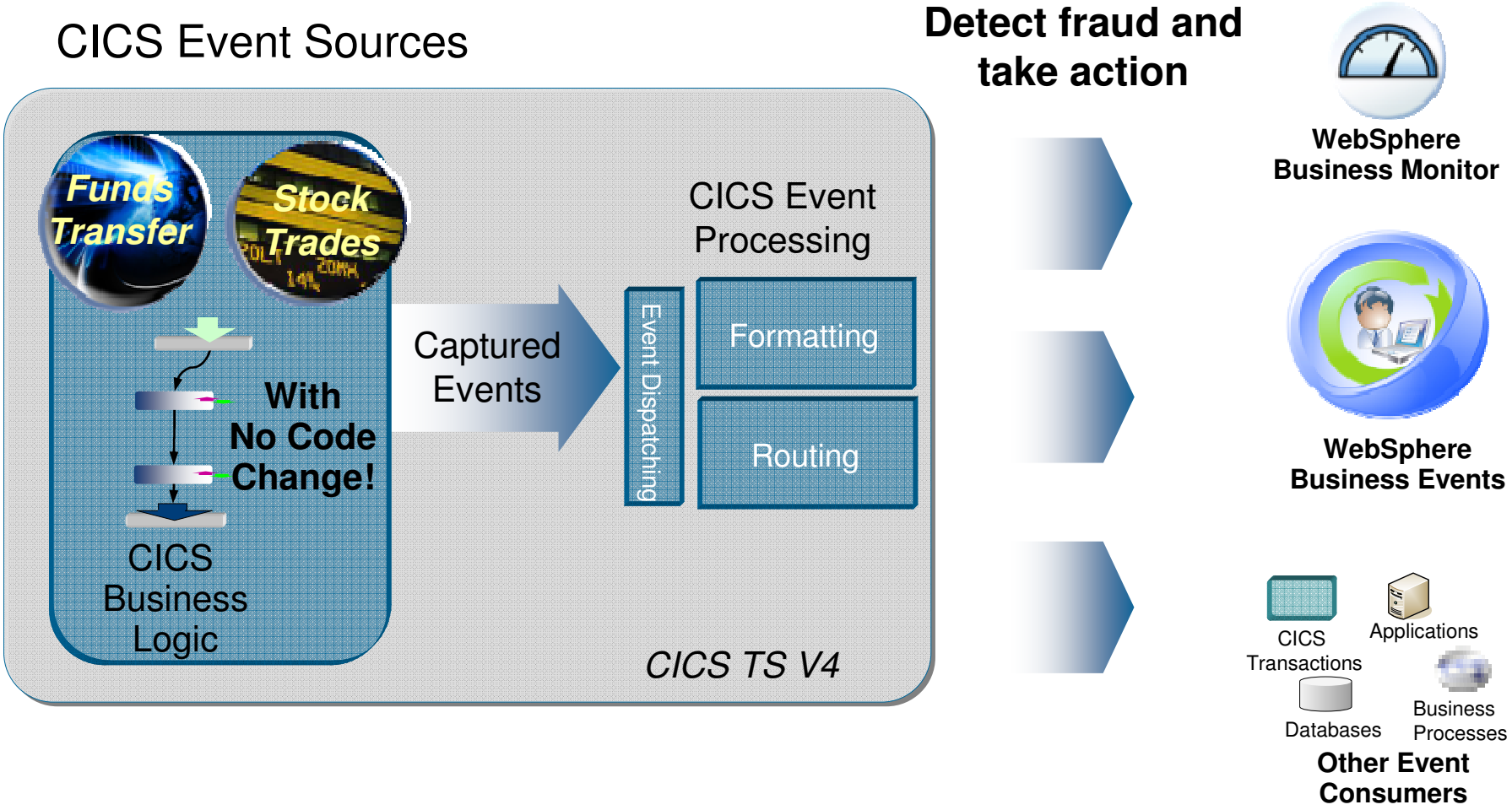
Action: Trigger automated troubleshooting process

Event
Parts assembly received

Business Context
3rd late delivery from third party logistics supplier in the last week

Action: Prioritize delivery to installation site and initiate follow-up process with supplier

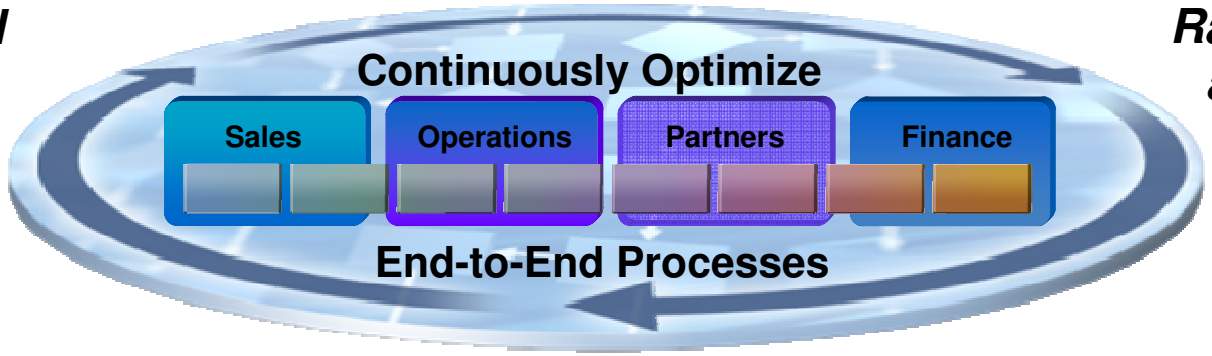
Capture mainframe events for smarter business outcomes



Process automation – Triggered by the Events of your Business

Improves operating efficiency and reduces cost

Model and Simulate



Rapidly Deploy and Change

Monitor, Predict and Act

Streamline business activities

Lower Costs

IBM WebSphere Process Server for z/OS

Complement and extend existing applications

Reduce cycle time

IBM WebSphere Business Monitor

Leverages reusable process components

Easier to Manage

IBM WebSphere Business Modeler

Smarter schools transform insight into action

A large university makes processes explicit and understood

What's Smart:

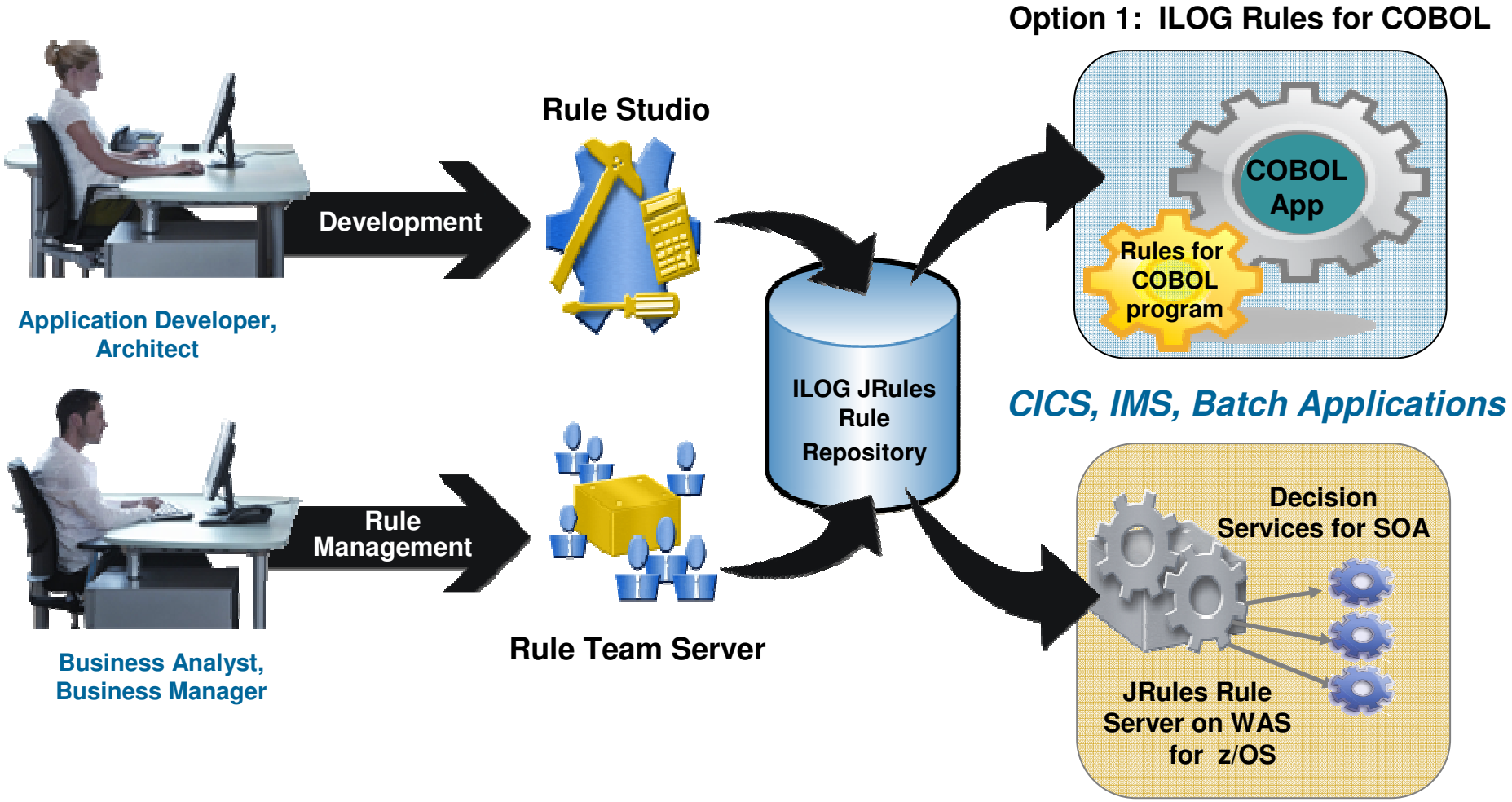
- Modeling and documenting existing business processes to identify areas for improvement
- Leveraging BPM to collaborate with process stakeholders across departments
- Deliver business agility for proven and trusted traditional System z applications

Business Value:

- Reduced new application development from 1 – 2 months to several days
- Improved user satisfaction by increasing success rate of online registration
- Reduced enrollment time from 3 days to instantaneous

The event processing system was implemented and deployed within 2 weeks and exceed its first year ROI estimate within the first month in production.

ILOG business rule management solutions on System z



WebSphere ILOG BRMS Case Study – Large Financial Service Provider

The challenge:

- The company was missing revenue by not being able to present the right offer at the right time when a customer was on-line.
- Decision logics were scattered and inconsistent across channels.
- Poor customer experience: branch staff attempts to cross-sell to clients who did not qualify for the additional credit resulted in negative client experience

Solution:

- Create an ILOG BRMS based cross-sell/up-sell solution
- Decision support throughout generation of personalized & qualified offers
- Cross-channel (branches, call centers, etc.), cross-product & customer centric

What Makes it Smarter:

- Improved client relationship – acquisition, retention & wallet-share
- Accelerated ROI
  - Increased revenues - $14M in approved bookings in 2.5 months
  - Significantly increased cross-sell offers: from 13% to 40%
  - Significantly increased acceptance from 3% to 20%-30%
- Instant updates of rules fully managed by business users

One of the Largest Financial Service Providers in the World Dramatically Increases Revenue through Cross-sell/Upsell

System z - The Premier platform for Enterprise Modernization

- An ideal platform for critical business workloads
- Delivering unrivalled integration across the stack
- Enabling you to take leverage your existing investments
- Modern technologies to accelerate deployment of new capabilities

Thank you!