



***Exploring a shorter path to cost savings –
Leveraging existing assets for
on-demand applications***

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Vice President, Enterprise Platform Software

March 2006

SOA on your terms and our expertise

ON DEMAND BUSINESS™

Solving Top Business Challenges

Creating or Improving IT Solutions by Leveraging the SOA Foundation

Productivity



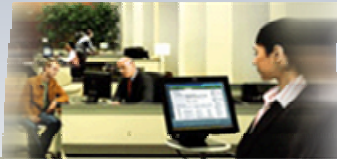
Easier change management

Agility and compliance



Single source of information

Collaboration



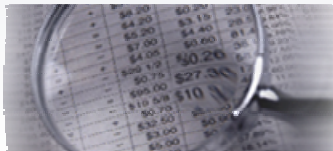
role-based access for all

Customer experience



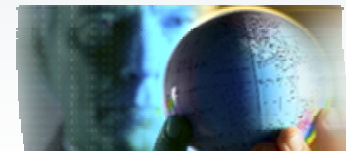
Tasks provided by others

Responsiveness and service



Reduce transaction time

New opportunities



Expand access to apps and systems

The IBM SOA Foundation

Provides What You Need to Get Started with SOA

IBM SOA Foundation: Integrated, open set of software, best practice, and patterns

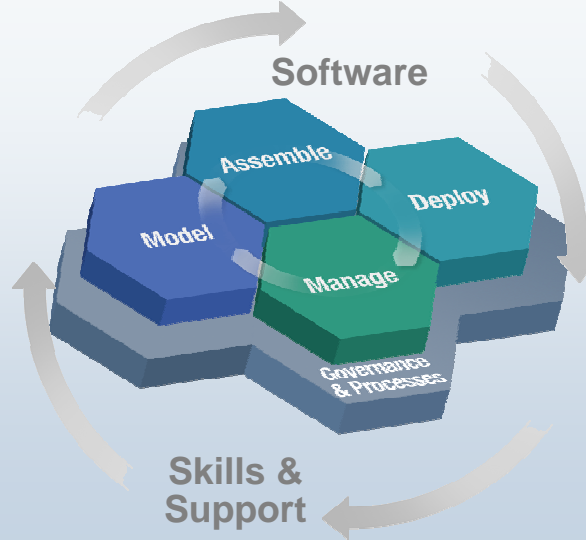
Supports complete lifecycle with a **modular** approach

Extends value of your existing investments, regardless of vendor

Scalable; start small and grow as fast as the business requires

Extensive business and IT standards support; facilitating greater **interoperability & portability**

IBM SOA Foundation



Leveraging existing IT Infrastructure

ORACLE

SAP

bea

CICS

DB2

WebSphere

IMS

IBM

Microsoft

ca

Custom Apps.

Your Existing Applications Assets are the Foundation of an SOA Strategy

Many of the IT assets required to enable an on-demand business already exist and have been supporting the business for years or even decades. Enabling these IT assets to participate in integrated business processes is key to improving responsiveness.

DH Brown Associates, Inc.

Application Transformation: Leveraging Existing IT Assets to Build Competitive Advantage (September 2004)

What about “before SOA”?

- **Significant business intelligence exists in ~~legacy~~ core systems**

- "200 Billion lines of COBOL code in existence" *eWeek*
- "5 Billion lines of COBOL code added yearly" *Bill Ulrich, TSG Inc.*
- "2 Million COBOL developers" *Gartner*
- "Majority of customer data still on mainframes" *Computerworld*
- "Replacement costs \$20 Trillion" *eWeek*

- **Rewriting - is it an option.....**

- How long will it take? (lose strategic benefit)
- Who will do it? (who has the business knowledge?)
- How much will it cost?
- Risk?

Rewriting all existing applications and moving them to new platforms is not a viable option

Existing applications are among the most valuable assets a company owns

It is 5X less expensive to reuse existing applications than to write new applications from scratch -- Software Productivity Research (SPR)

Reusing proven, time-tested applications results in significantly lower risk and faster time to market

Host applications are probably better suited for exposure as part of an SOA than many applications based on more modern 4GL object-oriented languages -- Forrester Research

We will help you identify an incremental, affordable migration path to extend and integrate your existing applications

Styles of transformation for zSeries environments

Transform User Experience

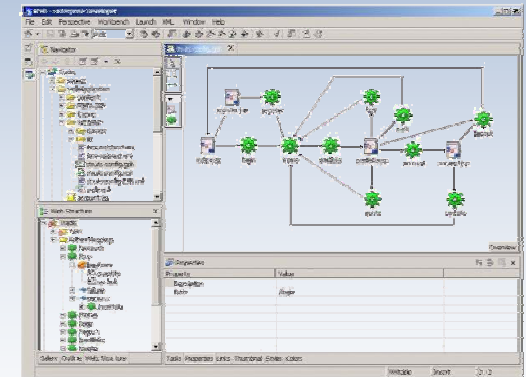
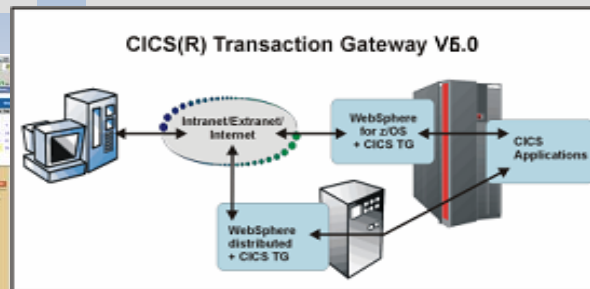
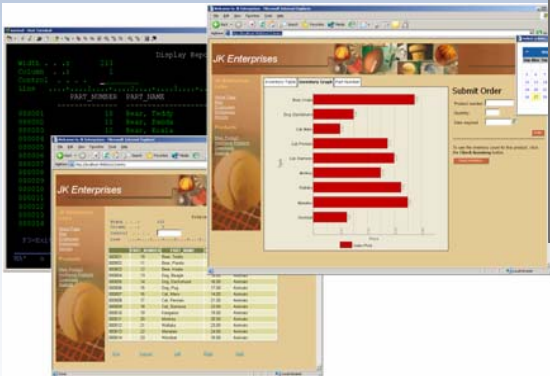
Enhance user interface and workflow for quick return on investment

Transform Application Connectivity

Improve business processes and develop customer, partner and supplier relationships using Web services and Java connectors

Transform Application Architecture

Update and extend mission-critical applications as services, leveraging their core value in new ways

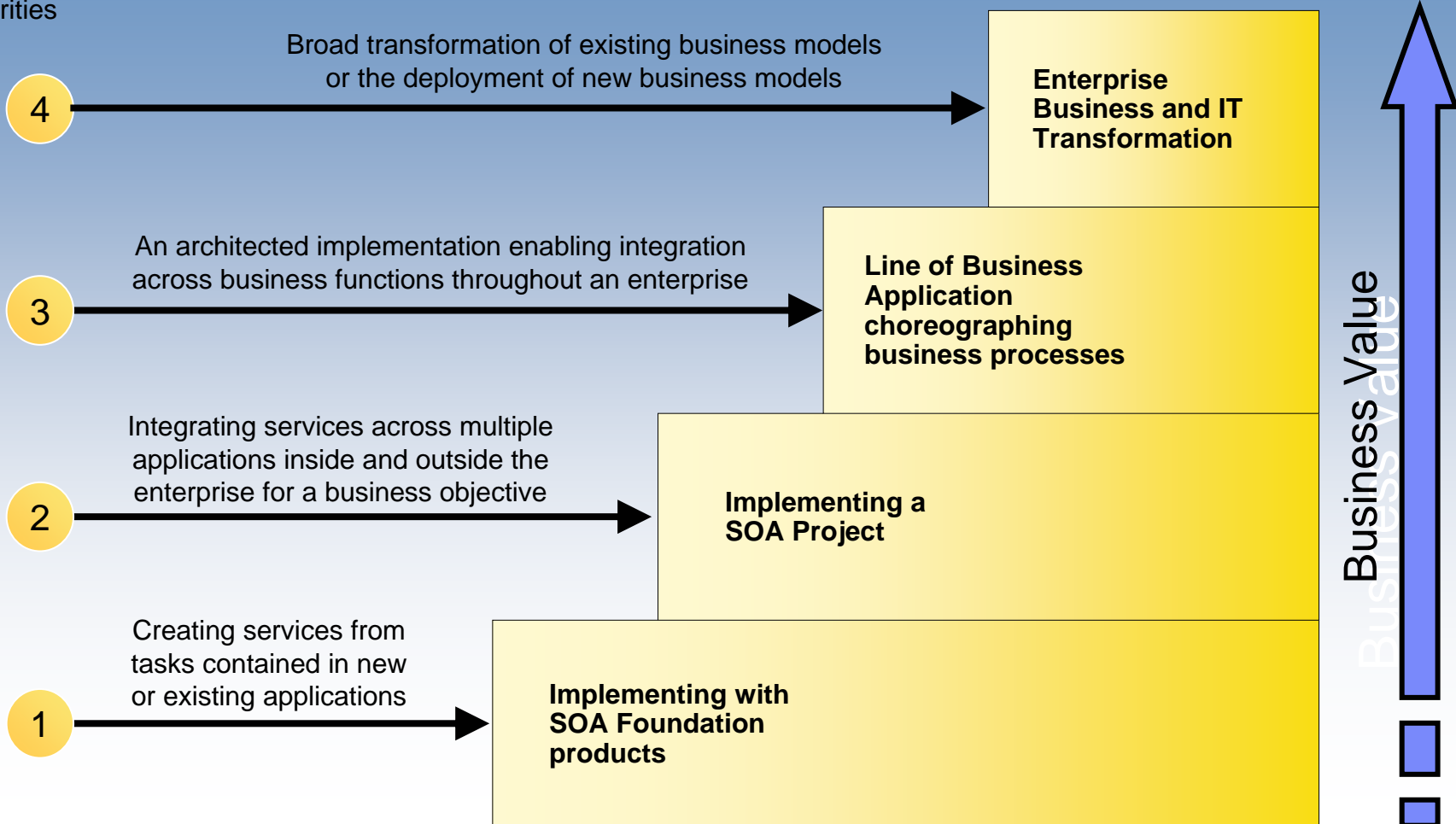


Single integrated delivery vehicle across application transformation styles

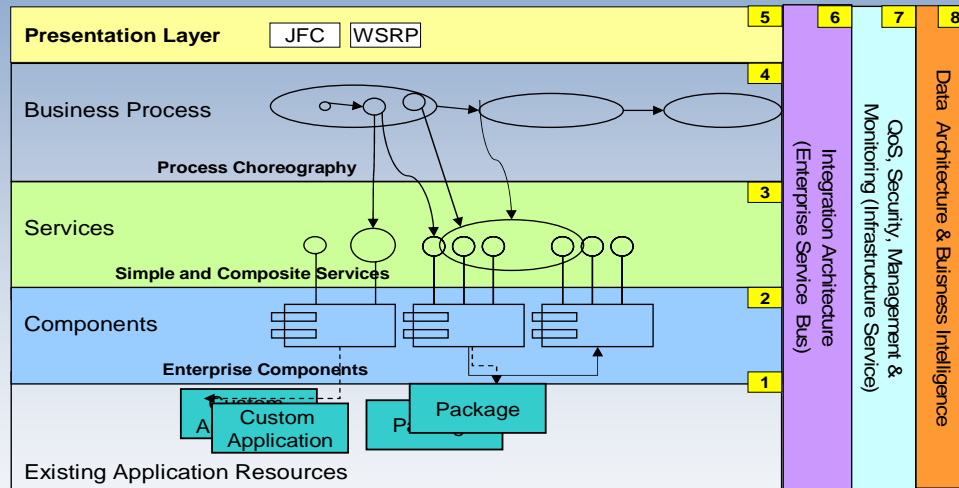
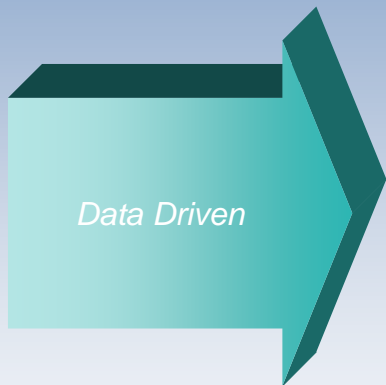
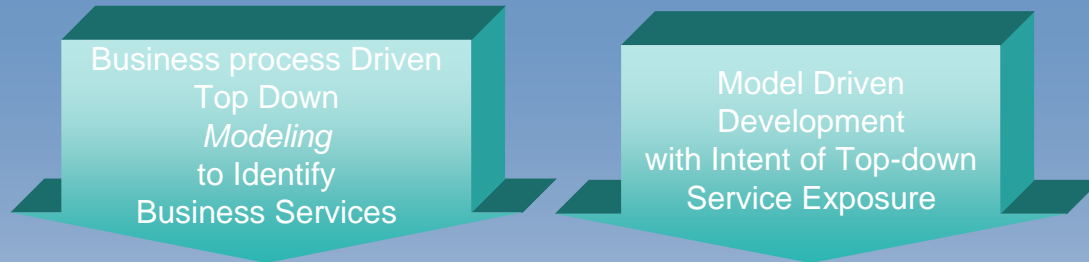
Organizations can take different paths to eventual adoption of SOA depending on your business goals and IT constraints.

Entry Points

Based On Business Priorities



There are several approaches/entry points to move towards a Service Oriented Architecture (SOA)



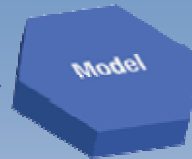
Enterprise Modernization

Application Understanding and Analysis Tools

"OK. I have hundreds of programs using many different technologies. How do I understand and identify the assets that would make good services for my SOA?"



How do I discover program units and business rules for reuse?



How do I wrap programs as services and create composite apps?



How do I deploy into robust, flexible SOA runtime environment?

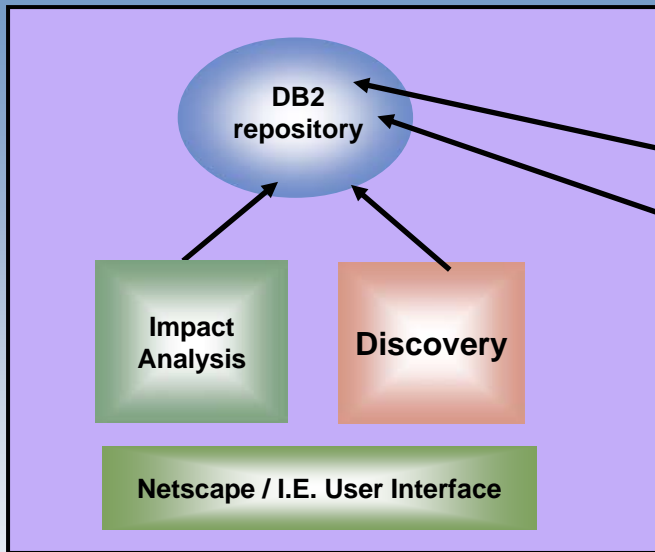


Model

Discover Existing Assets and Analyze



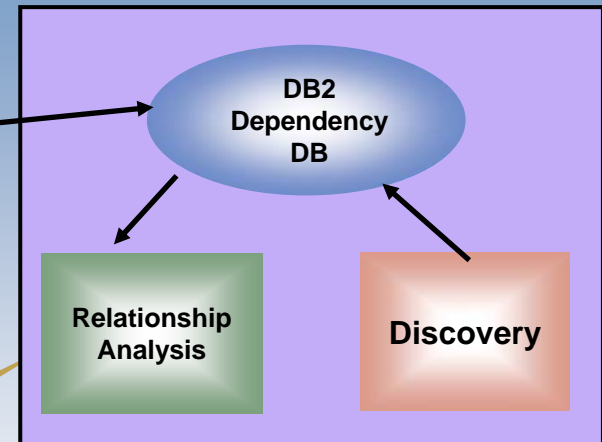
WebSphere Studio Asset Analyzer



CICS Application Resources
Transactions
Programs, Files
TDQs, TSQs
DB2/IMS DB etc

Enterprise Customer AD artifacts
Java, COBOL, PL/1, Assembler
CICS/IMS Applications
WebSphere Applications
DB2, WSMQ

CICS Interdependency Analyzer

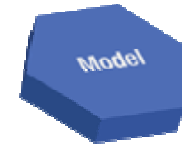


Customers:
business analysts, system analysts, developers, testers, project managers, System Programmers, QA analysts
Management

Benefits:

- Automated discovery of application code and CICS runtime relationships
- Higher quality of application change management
- Reduce or eliminate intensive efforts to create components
 - ▶ Use existing skills and application knowledge
- Position for evolution to dynamic e-business
 - ✓ Reuse of IT assets as components

Model Discover Business Rules and Program Units



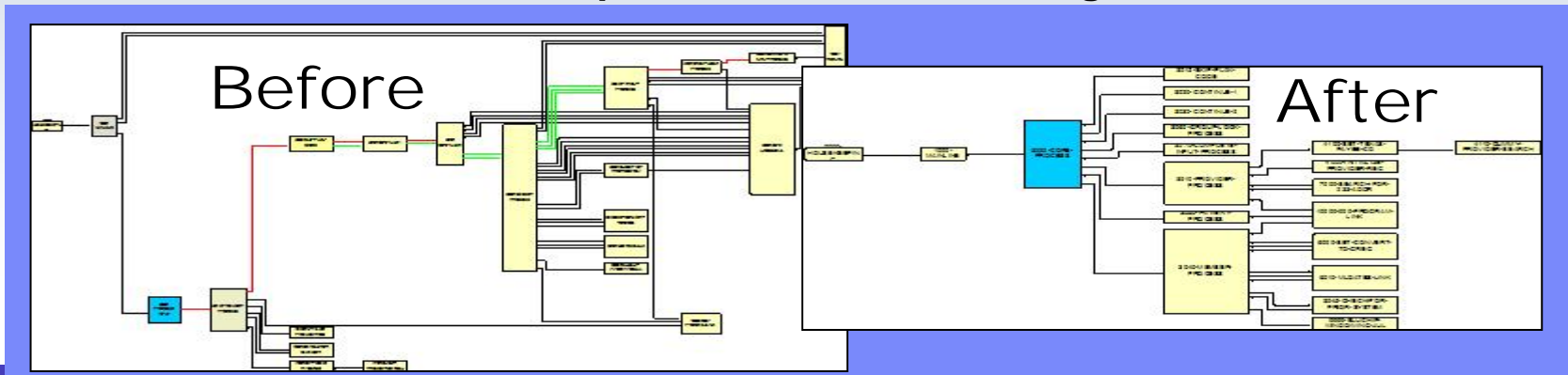
Asset Transformation Workbench

The screenshot shows the HyperView interface for 'CUSTOMER.ccp'. On the left, a flowchart illustrates the process flow: PROCESS-CUSTOMER-MAIN -> PROCESS-SEARCH -> SELECT-AN-ENTRY -> READ-CUSTOMER-RECORD -> PRINT-DETAIL-PROGRAM. On the right, a code editor displays logic for handling customer records, including actions like 'MOVE *1* TO ACTION', 'PERFORM 1100-READ-CUSTOMER-RECORD', and 'SET PROCESS-ADD-CUSTOMER-TO TRUE'. A 'Business Rule Candidates' panel is visible in the center.

The screenshot shows the HyperView interface for 'PRODAUD.ccp'. The code editor displays logic for processing audit data, including actions like 'DELETE DATABASE('CUSTOMA')', 'PERFORM 1100-READ-CUSTOMER-RECORD', and 'SET SEND-EASE-ALARM TO TRUE'. A 'Rules' panel on the right shows a table of rule parameters.

Rule Parameter	Function	Parameter Value
Function	Function	
Apply	Function	
Call Location	String	
Execution Order	Integer	
Parameter	String	
Business Area	String	
Business Function	String	
Priority	Integer	
Description	String	
Business Location	String	

Code improvement via Refactoring



WebSphere Developer for zSeries

Assemble Services Across Platforms

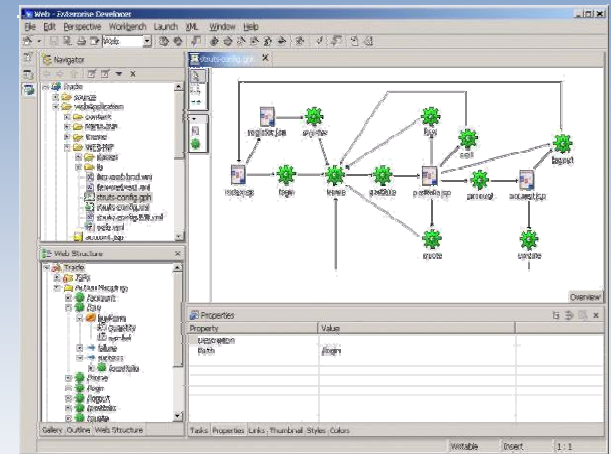


Create composite applications with Core Assets

- Bridges mainframe and client-server development
 - For end-to-end integrated processes running across platforms
 - Shared developer repositories and tooling framework

- For deployment to WebSphere, CICS, IMS, DB2 and batch
 - Cross platform development
 - Workstation based development tool
 - Workstation based mainframe application analysis tool

- Develop SOA systems that combine Web services, web applications and traditional applications
 - Cobol, PL/1, EGL (4GL)
 - Java, J2EE, WSDL, Java Beans, XML adapters
 - Portlets and complex user interfaces
 - Service flow modeler for CICS and HATS



WebSphere Developer for zSeries became generally available in June 2005.

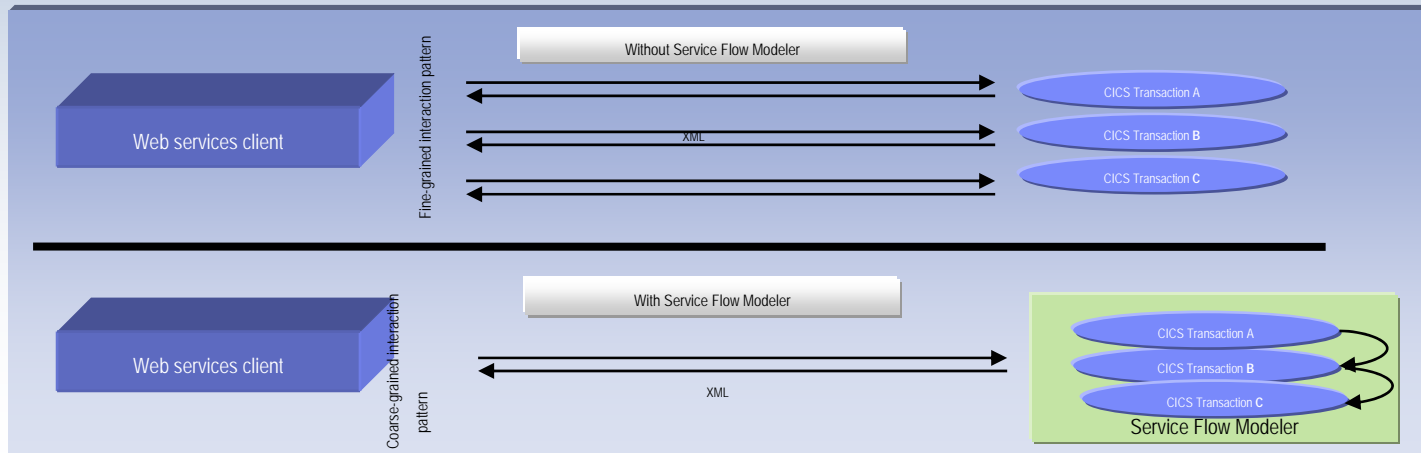
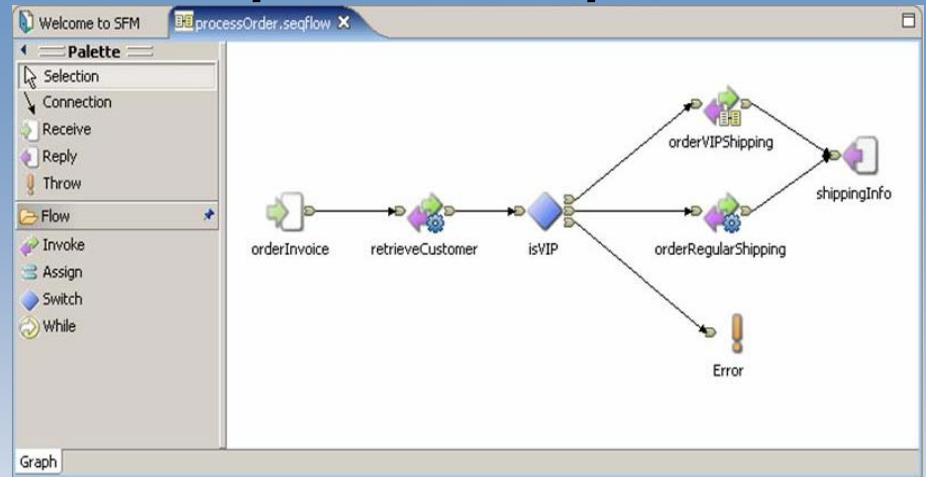


Assemble Service Flow Modeler

New Feature! Service Flow Modeler in WebSphere Developer for zSeries

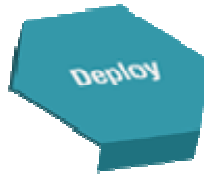
- Builds Web services from existing CICS applications

- Aggregates multiple CICS transactions into high-level business processes through visual modeling
- Supports CICS BMS (terminal-based) applications & CICS commarea applications
- Highly optimized CICS runtime supporting Web services and XML interfaces



Enabling a robust, flexible SOA runtime environment

While maximizing the value of existing assets



WebSphere Application Server V6

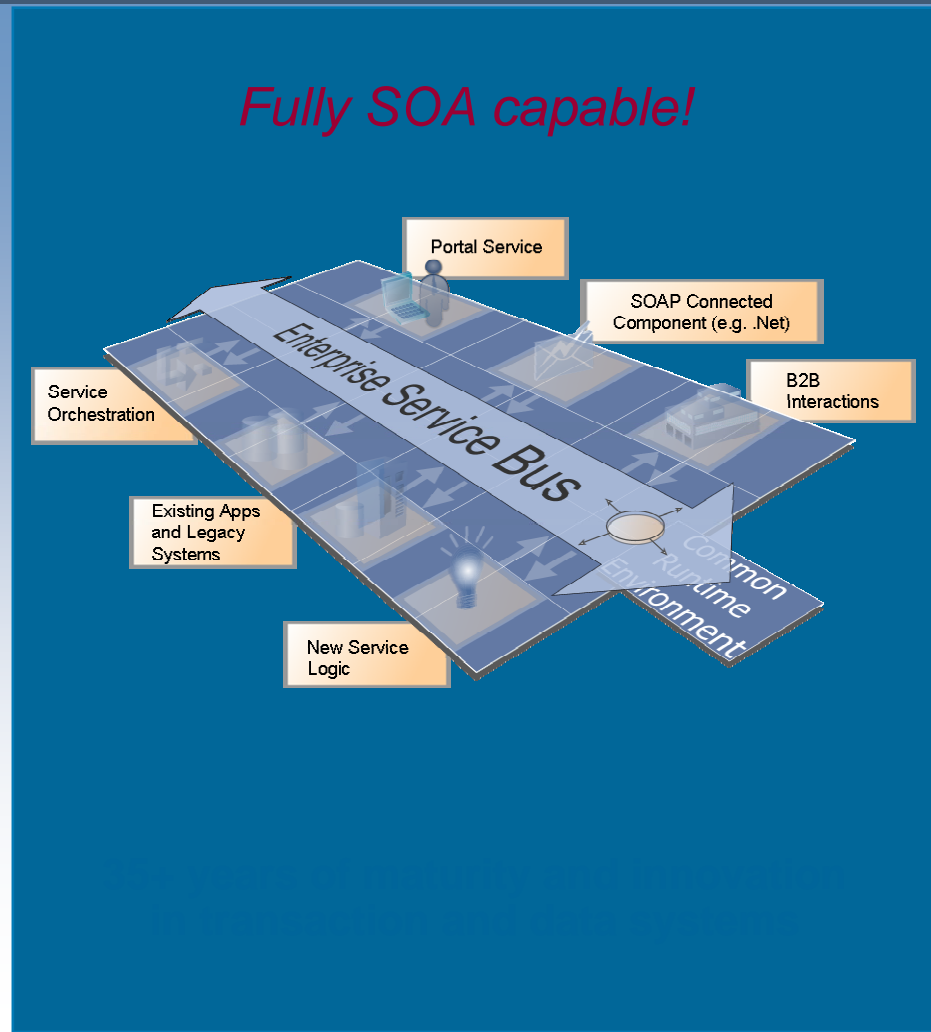
- Extend existing Java assets with support for Web Services standards and standards-based messaging
- Help ensure 24x7 availability of business-critical applications with clustering and high availability
- Build and deploy Web Services quickly and easily with rapid development and deployment features

CICS Transaction Server V3.1

- Exploit provider/requestor Web service support for CICS assets, based on full Web service standards
- Extend the value of CICS transactions in a mixed language environment
- Build Web services from CICS transactions with no change to existing applications.

IMS Transaction and Database V9

- Exploit Web service support for IMS assets, based on full Web service standards
- Extend the value of IMS transactions in a mixed language environment
- Build Web services from IMS transactions with no change to existing applications



Gartner: Best Practices for Mainframe SOA

- Act tactical, think strategic
- Evaluate tools that provide good microflow orchestration
- Create services that utilize function from across existing application boundaries.
- Build a reuse culture and technology infrastructure.
- Work with operations to create management/performance-monitoring support.
- Use code understanding/inventory/restructuring tools to improve service granularity.
- Define the role of the mainframe in future application architecture.

IBM zSeries Software Solutions

Platform Readiness is Key

Platform Readiness

(Technology, Sub-capacity pricing (WLC))

Integrated Tool Set / Enterprise COBOL and PL/I V3

WebSphere
v6

IMS
v9

DB2
v8

CICS
v3

NetView
v5.2

WebSphere
MQ v6

Operating System z/OS 1.6 (1.7 in 1H)


zSeries Hardware, zAAP, zIIP

Why IBM for SOA?

Get started today!



Skills



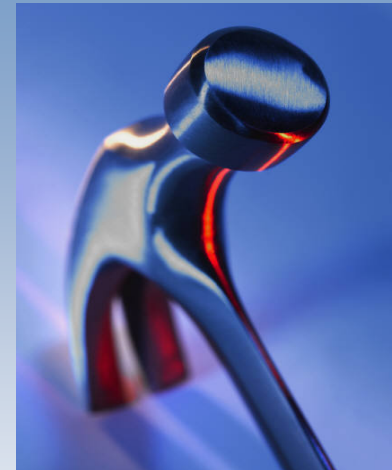
Know-how & best practices

- **Best Practices** – practical ‘how-to’ guides in applying proven practices to solution implementation.
- **Reference Architectures** – validated, best practice driven business and IT architectures.
- **Models** – industry standards based models including business process, information and UI models.
- **Software components** – industry specific software from IBM and ISVs to accelerate solution assembly and deployment.
- To get you started:
 - **zIAW** (zSeries Infrastructure Architecture Workshop). Free 2 Day Seminar
 - **CODs** (CICS On Demand Seminar) Free 1 Day Seminar
 - **zCoE** - zSeries Center of Excellence Services
 - **LT** - IGS Legacy Transformation Services

What is a zSeries Infrastructure Architecture Workshop?

Consultative, solutions based approach that is business problem focused; non-industry specific (typically 1-2 days)

- Uses established methodologies, concepts, and patterns based on proven results
 - Identify and document the current (AS-IS) environment
 - Develop a proposed future state (TO-BE) architecture
 - Discover and document needed capabilities to arrive at (TO-BE) architecture
- Combination of white boarding, presentations, subject matter expertise (includes both client & IBM resources)
- Interactive, collaborative “JAD” session
- Positions IBM’s SOA Reference Architecture and Cross Brand SWG product capabilities
- Focuses on leveraging mainframe assets and maximizing value of System Z as a platform
- Promotes internal client dialogue and brainstorming



System Z Focus: Leveraging existing assets and platform capabilities...

CICS On Demand Seminars - CODS

- Hear from CICS experts on how CICS can support your SOA
- Agenda tailored for your environment
- Great opportunity to get CICS developers, system programmers and architects together to explore how CICS could fit into your SOA architecture



CICS in an On Demand Environment Seminar Agenda (Sample)

Integration with CICS using Web Services

Application Development for Composite CICS Applications

WebSphere Developer for zSeries

Services Flow Modeller

Using CONTAINERS and CHANNELs to break free of the 32KB limit

Optimize your CICS systems for mixed workloads with CICS Tools

Next steps to an on demand environment

zSeries and System z9 Center of Excellence

zCoE – Is ready to help you!

- Modernize and Extend Legacy Assets
 - Improve User Interface and Connectivity
 - Improve Application and Data Integration
 - Provide SOA Solutions
- Extend Usage of Platform
 - Create new application code on zSeries
 - Host Linux applications on zSeries
 - Invest in new applications and solutions
- Improve Operational Efficiencies
 - Improve TCO across Hardware / Software
 - Improve platform skills
 - Improve operational and management processes

Partnering across IBM brands and organizations to provide YOU a single point of contact for zSeries Services

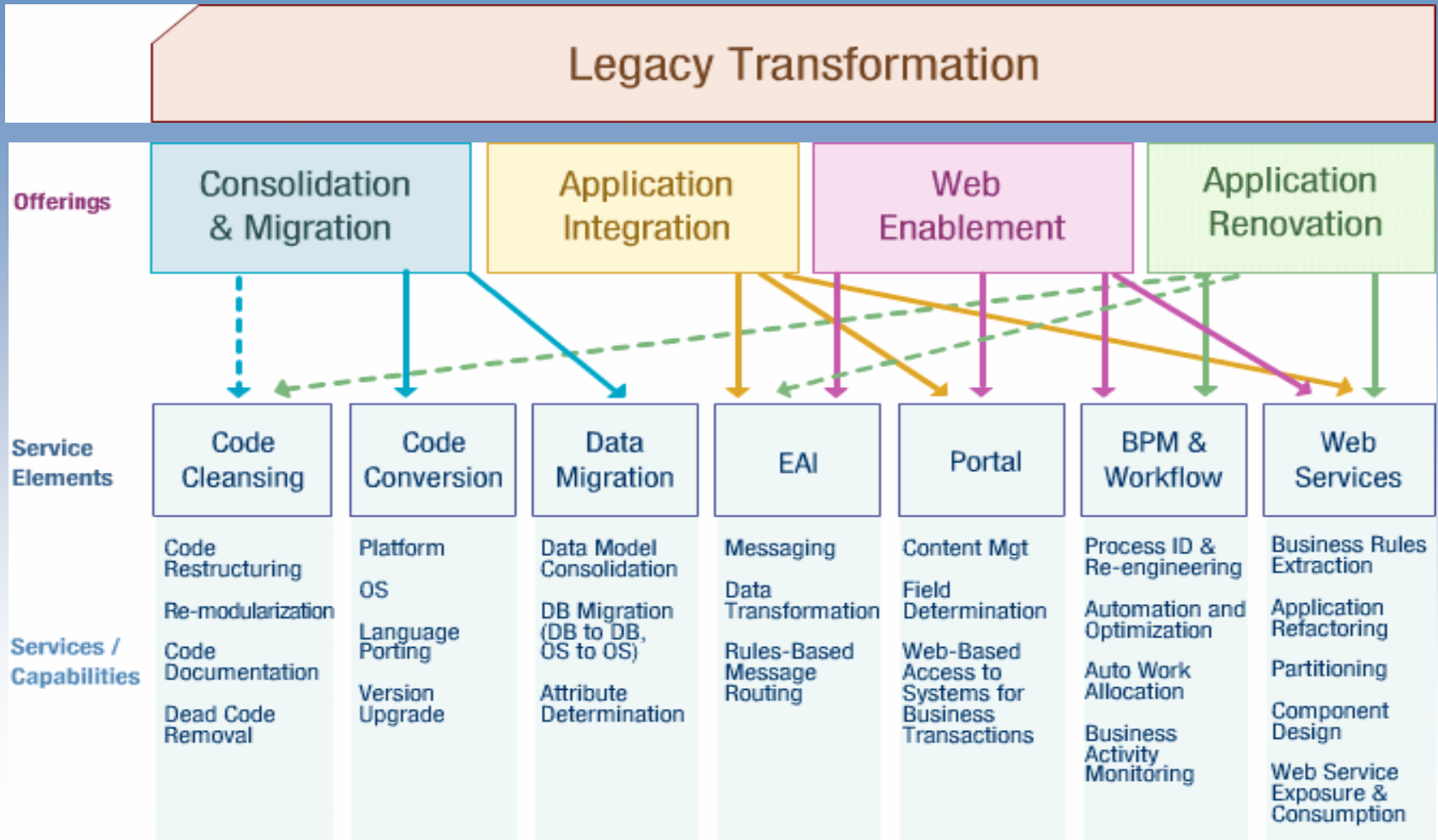


▶ zSeries and System z9 Center of Excellence

Contact: Brian Senn/Austin/IBM

IGS Legacy Transformation Services

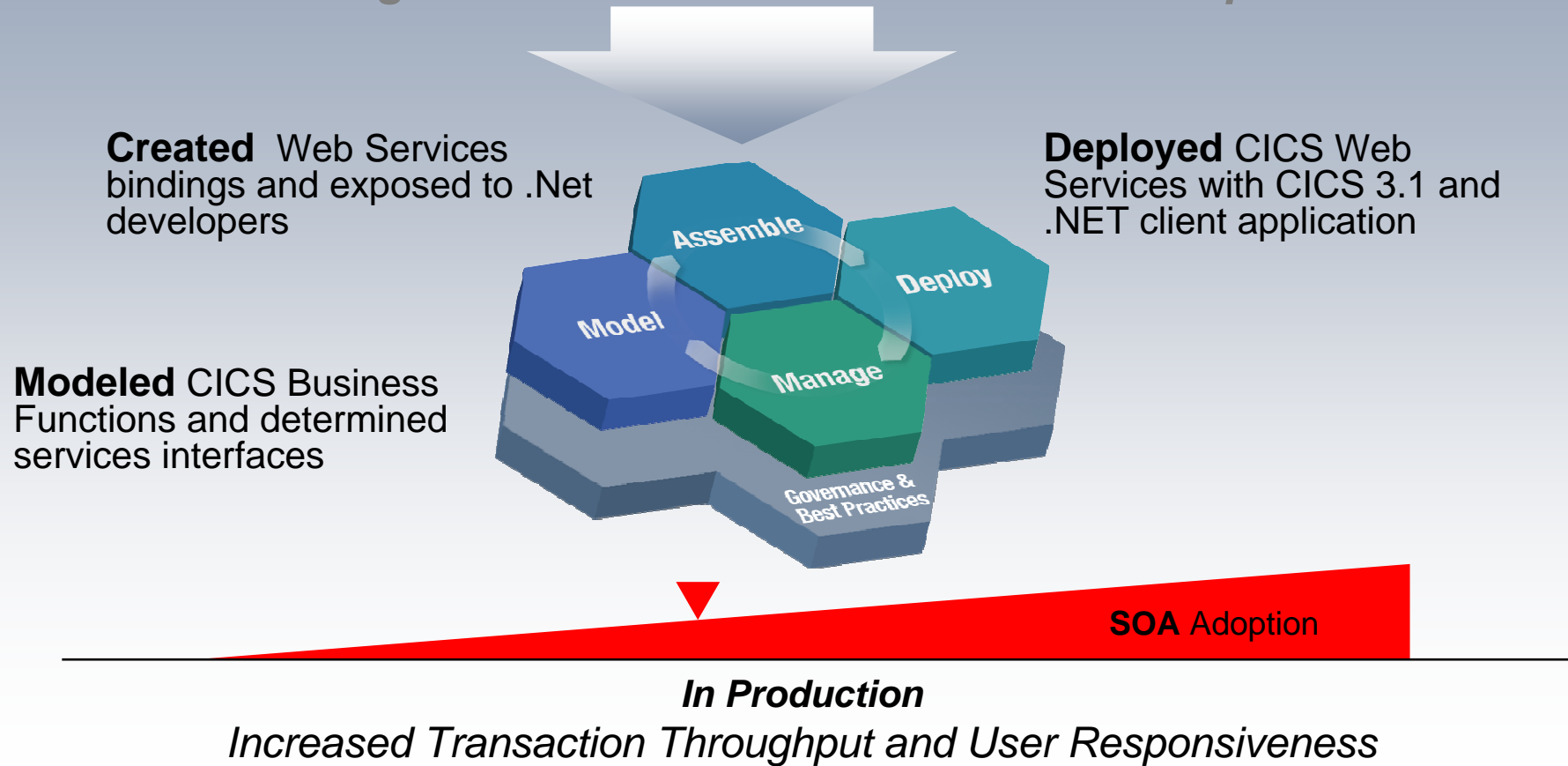
Help along the path to Application Renovation and SOA



SOA lifecycle in action at State Agency

Enhancing throughput and user responsiveness

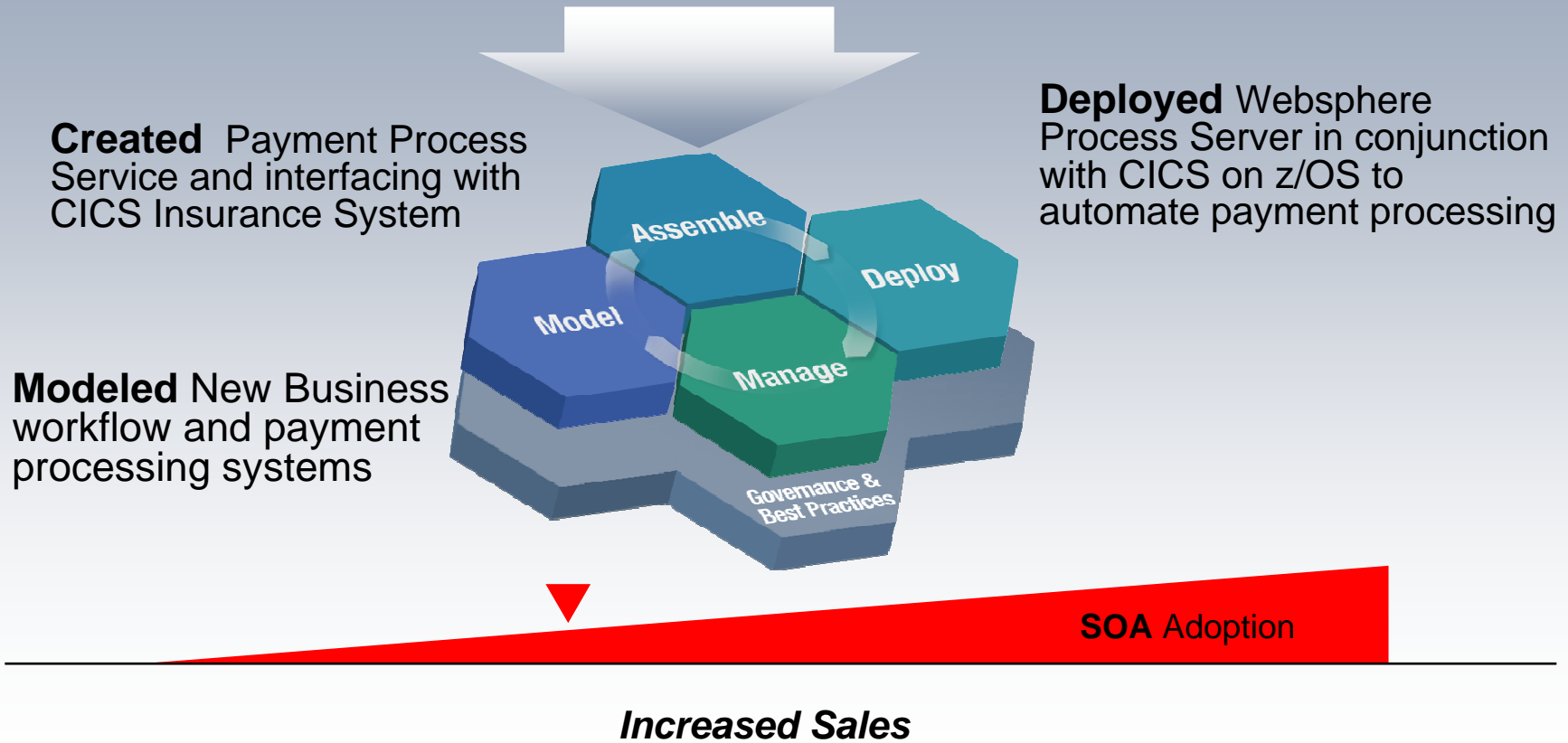
Interfacing CICS WebServices with .NET development



SOA lifecycle in action at a Major Insurance Company

Automating Initial Insurance Payment with Credit Card System

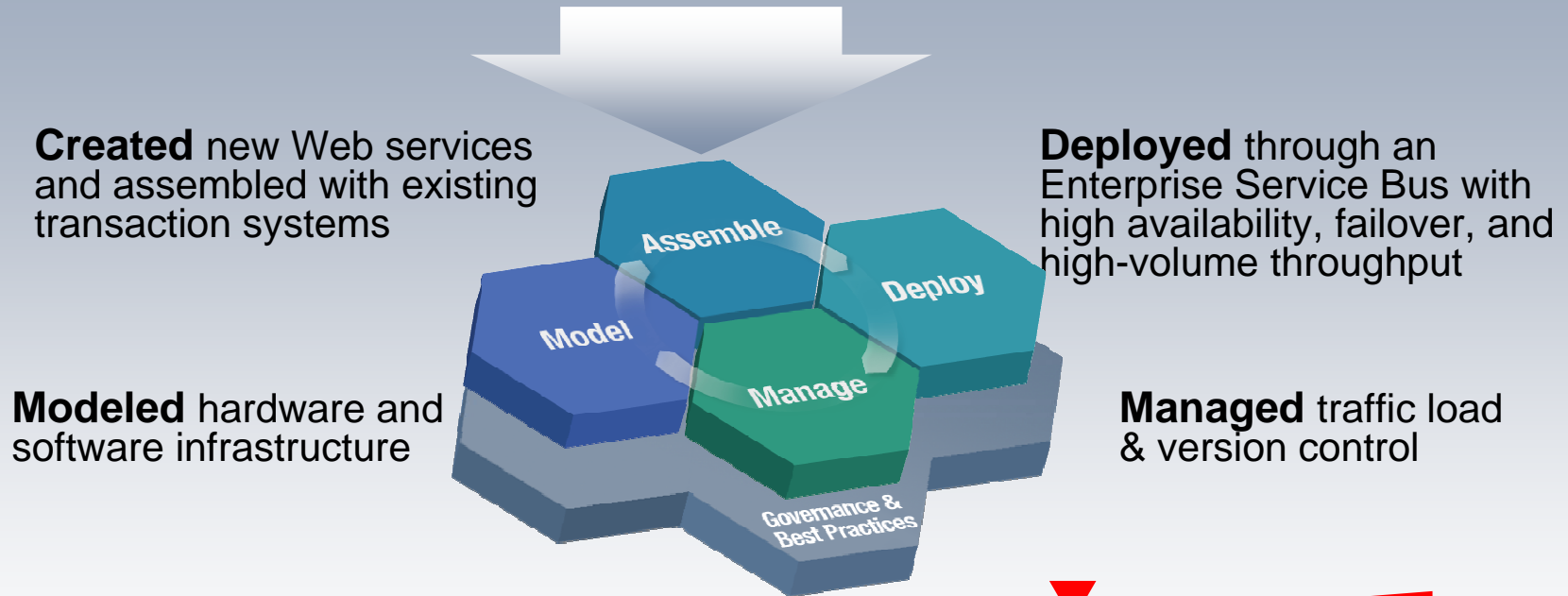
Integration of CICS into New Business Workflow with WPS



SOA lifecycle in action at Office Supply Company

Enhancing customer order management using SOA

Worked with business end users to define project



SOA Adoption

4 Month Project

Part of a plan expected to save over \$20M!

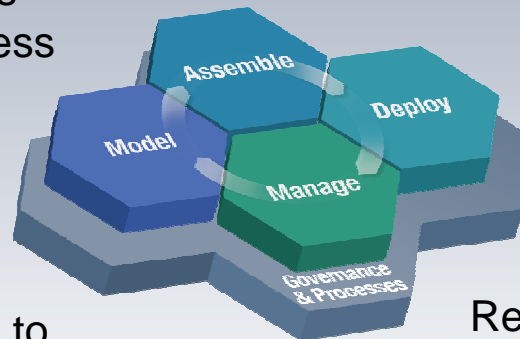
SOA lifecycle in action at Bank of Montreal

Revitalize customer relationship management across multiple banking channels



Re-used and assembled existing CICS assets with new Web services interfaces into new CRM business process

Web service interfaces deployed on WebSphere Application Server on zSeries to access CICS assets



Modeled options for new system to support hundreds of transactions per second

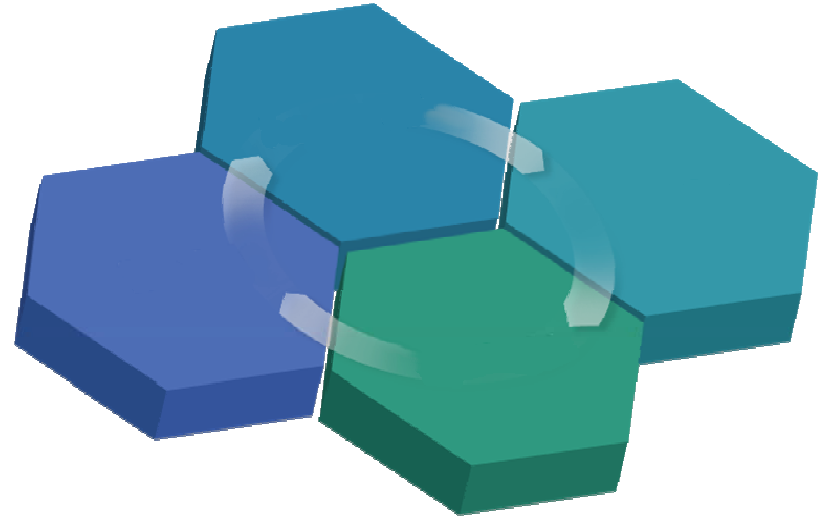
Real-time view of improvements in cross-sell and up-sell opportunities

SOA Adoption

“The new solution allows our channels—be it the Internet, the call center or a branch office—to work collaboratively on behalf of our customers. We’re ecstatic about that,”

Thank
YOU

The text 'Thank YOU' is rendered in a large, 3D, light blue font with a yellow-orange outline. Each letter of the word 'Thank' contains a different portrait of a person. The 'T' shows a man in a white shirt and orange tie. The 'h' shows a woman with dark hair. The 'a' shows a man with dark hair. The 'n' shows a woman with dark hair. The 'k' shows a man with glasses. The word 'YOU' is positioned below 'Thank' and also features portraits of people within its letters: 'Y' shows a man in a light blue shirt, 'O' shows a man in an orange shirt, and 'U' shows a woman with dark hair.



Q&A

Kawasaki uses Host Access Transformation Services to improve user interface and workflow

Challenge

The process of accessing multiple sales force applications was slow and complicated, which reduced selling time

Solution

Provide district managers with a single Web interface that combines screens and data from multiple sales force applications

“WebSphere Host Access Transformation Services allowed us to quickly deliver web-based sales force applications from existing CICS transactions.”

Gary Bramwell, Director
Information Technology



Business benefits

- Modify application workflow to streamline interaction and better meet the needs of district managers
- Customize screens to increase user satisfaction and reduce training time

Technology benefits

- Quickly convert existing host screens to a Web interface using default rules—allowing fast rollout of any required new CICS applications
- Deliver applications as HTML to Web browsers with zero-footprint and zero-download required on the desktop
- No modification or access to source code

Merrill Lynch reuses and saves!

Challenge

- Adapt to increased pressure from Internet brokerage competitors and improve services
- Combine business services to create differentiated offerings, and extend those offerings to Web for direct customer access
- Protect investment in **23,000+** working applications in production legacy systems

Solution

- Flexible Web Services infrastructure
- Seamless integration of CICS based application function in web user interface
- High reusability of Web Services function from

Tools used include:

***WebSphere Application Server on Linux
SOAP for CICS***

WebSphere Studio Application Developer



Business Value:

- Preserved value of proven applications without redevelopment*
 - \$800K redevelopment plan replaced with \$30K Web Services enablement*
- Merrill estimates developer productivity up 250%*
 - Web Services created in 12 hours*
 - Common development platform reduces programming & Q&A*

dwp Bank uses IBM tools to modernize legacy applications and integrate with J2EE

Challenge

Modernize and extend legacy COBOL and IMS applications and integrate them into an e-business infrastructure

Solution

Use IBM transformation tools to deliver higher levels of customer service at lower costs with reuse of existing assets

Transformation tools used by dwp Bank include:

WebSphere Studio Enterprise Developer
WebSphere Studio Asset Analyzer
WebSphere Studio Application Monitor
WebSphere Host Integration Solution
WebSphere Application Server for z/OS



Business benefits

- Allow the bank to sustain its transaction processing leadership in Germany and grow market share throughout Europe
- Reduce the cost of each individual transaction through economies of scale and decreased risk

Technology benefits

- Develop an IT architecture that is scalable and flexible, and that will allow the bank to integrate its existing and new systems
- Align the IT environment with business objectives
- Reduce functional and data redundancies

Web Services Helps Charles Schwab Respond to Market Conditions and Customer Needs

Business Challenge

Capture a new market opportunity by offering independent consultation and advice on a fee basis, leveraging existing IT assets

Solution

Partnered with IBM to build a services oriented architecture

Benefits

Shortened time to market for new service, minimized impact to existing applications and enabled them to leveraged their existing IT investment and skills

The screenshot shows the Charles Schwab website interface. At the top, there is a search bar and navigation links for 'Client Log In', 'Contact Us', and 'Open an Account'. The main navigation menu includes 'What We Offer', 'Investing', 'Lending', 'Advice & Research', 'Planning', and 'Market Insight'. Below this, there are sub-links for 'Schwab Philosophy', 'Independent Investing', 'Advised Investing', 'Active Trading', 'Our People', and 'Getting Started'. The main content area features a headline: 'Invest on your terms. Invest with Schwab Personal Choice™.' To the left is an image of a man and a child walking a dog on a beach. To the right is a 'Get Started' section with a photo of a woman and a child. Below the headline, there is a paragraph of text and a list of three service options: Schwab Independent Investing, Schwab Advised Investing, and Schwab Active Trading. At the bottom left of the screenshot, there is a quote: 'We hope the first choice you make is to invest with us. Now the choice is yours.'

“We need IBM to enable CICS as a service provider and eventually as a consumer and look forward to the day when CICS is fully Web Services enabled.”

– Charles Schwab team

Web Services Provides Santa Clara County (SCC) Criminal Justice Information System a Face Lift

Business Challenge

Provide an easy-to-use, secure, industry-standard way for customers to access Criminal Justice Information Control System (CJIC) data.

Solution

Evolve existing CICS-based transaction services to be web services and allow them to be accessed using SOAP. The new SOAP for CICS feature is being used as the "middleware" to SOAP enable the transactions to enable deployment on CJIC's z/OS system



Benefits

New transaction services are managed by SCC's existing S/390 skilled staff and its users now have a fast, reliable system from which to access the information they need

Southern Californian Edison Improves System Management

Business Challenge

Reduce the cost of managing IT environment

Solution

Leveraged the CICS Web User Interface (WUI) to make network operations staff more aware of the state of our production CICS regions

Benefits

Helped reduce the time required for Technical Support staff to monitor and administer production systems



Back-up

Proof Point: Toyota Motor Sales

■ Challenges

- Expansion of vehicle accessories database (IMS) and program to support migration to a Service Oriented Architecture (SOA)

■ IBM facilitated a two day zIAW

- Selected the New Vehicle System for the workshop

■ Results

- Proof of Technology for WebSphere Studio Asset Analyzer (WSAA) and Asset Transformation Workbench (ATW)
- Established a good working relationship with Toyota
- Sale \$550K in WDz, WSAA, ATW and WMQ-MB as an ESB footprint
- Potential for additional software and services



Client Value

“(The zIAW) was a valuable experience that energized our project and increased our confidence in moving core assets towards a service oriented architecture.”

Terry Crawford, Lead IT Architect, TMS

BC/BS of Alabama

Challenge

Plan to rewrite/redesign their existing a COBOL/Batch claims process application using a service-oriented architecture

zIAW Recommendation

Phased approach:

- 1) Use HATs to improve user experience, VT to access DB2
- 2) “Wrapper” existing business logic and invoke as services via WMQ, lay foundation for ESB
- 3) Incorporate development tools (WD/z, WSAA, ATW)



Client Value

“The workshop forced us to bring different parts of our organization together to look at the problem more holistically than has been done before. We had not thought much about trying to leverage our existing assets - now we will. .”

Stacey Taylor, Project Mgr,
Universal Processor

IBM Value

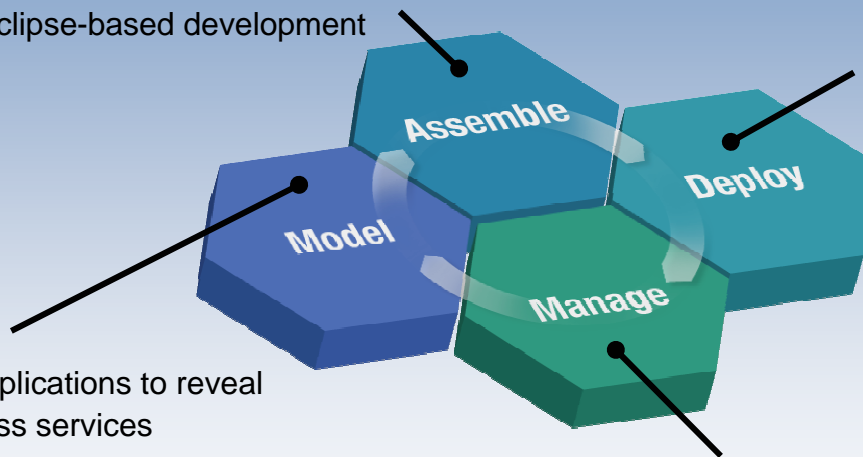
- **IBM Leadership/Partnership/Technical Credibility**
- **Significant addition to pipeline \$\$**
- **Footprint solution – long term value**

Enhance business flexibility with zSeries

Meet new requirements by leveraging your most valuable zSeries assets

IBM can help you build a service oriented architecture around your core zSeries applications

- Improve cooperation between your mainframe and client-server application teams using open integration technologies and common tools
- Program zSeries (WAS, CICS, IMS and DB2) with the latest Eclipse-based development workbench
- Analyze your applications to reveal reusable business services
- Trace usage patterns / service levels
- Use the latest middleware and management tools to reduce operational overheads
- Automatically generate web-interfaces for core CICS and IMS applications
- Create state-of-the art user interfaces without deep programming skills
- Integrate multiple core and new applications within the same workspace
- Compose business level web services from existing CICS and IMS transactions
- Retain mainframe availability, scalability, security and recoverability
- Connect applications right across your enterprise, across all platforms



Choose SOA from IBM so that you can maximize re-use and avoid the cost and risk of new application development projects.

Creating SOA composite applications with existing assets



Model



Model a new business process that builds on your current capabilities

WebSphere Business Modeler



...and discover program units and business rules you can reuse in the new process.

WebSphere Studio Asset Analyzer
CICS Interdependency Analyzer
Asset Transformation Workbench



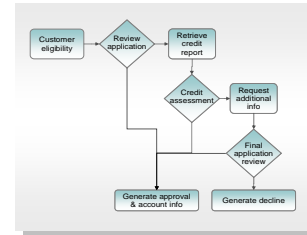
Assemble



Wrap programs as services, creating composite appl'ns from core assets....

WebSphere Developer for zSeries, plus Service Flow Modeler

Rational Application Developer



... and assemble the services across multiple platforms

WebSphere Integration Developer

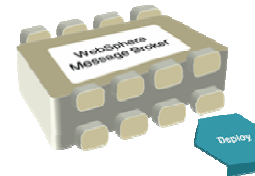


Deploy



Choreograph and deploy your new composite applications

WebSphere Process Server



... using an advanced ESB to power your SOA

WebSphere Message Broker



Manage



Monitor the processes across your SOA, and intervene if necessary

WebSphere Business Monitor
Tivoli Composite Application Manager for WebSphere



.... and export data for analysis and process improvement, back to

WebSphere Business Modeler



SOA on zSeries – Modernizing your most valuable assets!

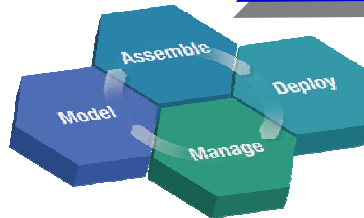
Extend and enrich core CICS, IMS and WebSphere applications

CICS, IMS and DB2
are enabled for SOA
today!

Creates opportunities for
new business processes
with ...

Running on any platform,
including z/OS and zLinux

\$5,000,000M (\$5T)
of core zSeries
applications



**WebSphere
SOA platform
products**

For asset reuse..

- time to value
- lower risk
- lower cost

.. and service integrity

- security
- availability
- recoverability

Unlocks the value of...

For advanced services..

- user interaction
- process management
- information integration
- enterprise service bus

Dealing with objections – Business needs are driving a renaissance in mainframe interest and use.

<p>The mainframe is obsolete</p>	<p>Enterprises are rediscovering mainframe values. IBM is seeing a resurgence of interest and use of the mainframe. The ability to efficiently deliver core services - without interruption – is critical to becoming an On Demand enterprise.</p> <p>IBM has invested \$bb of dollars to rejuvenate the platform. You will find most of the latest hardware & software technologies on the mainframe.</p> <p>The platform protects and enhances 40 years of investment in application assets. Our customers tell us they want this indefinitely.</p> <p>Competitors now wish their servers were more like the IBM mainframe.</p>
<p>The mainframe is too expensive</p>	<p>The mainframe delivers higher utilization, lower overheads and the lowest total cost-per-user of any platform.</p> <p>Mainframe delivers huge value through its leading security, availability and recoverability capabilities.</p> <p>You may be surprised at the affordability of new mainframe application projects</p>
<p>I can't get the skills</p>	<p>There is a resurgence of interest in the mainframe amongst younger IT professionals, driven by a recognition of career opportunities.</p> <p>IBM is sponsoring major initiatives in universities and colleges to facilitate the development of mainframe skills.</p>

Enterprise Modernization....a Roadmap to SOA

- Leverage existing investments and quality of services on the zSeries platform
- Create new business value from existing IT systems
- Transform business-critical legacy processes and applications into reusable, shareable business components that can be choreographed
- Integrate traditional COBOL and PL/1 applications with new Java applications into an efficient mixed-workload environment
- Leverage existing enterprise skills and improve developer productivity

