Accelerate solution delivery by simplifying and modernizing your applications with IBM Rational Business Developer Extension

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Agenda

- Business drivers and IT Evolution

- Software Development Challenges

- IBM Rational Business Driven Development

- Dealing with Construction challenges

- Rational Business Developer Extension and Enterprise Generation Language

  ▶ Capabilites and value proposition
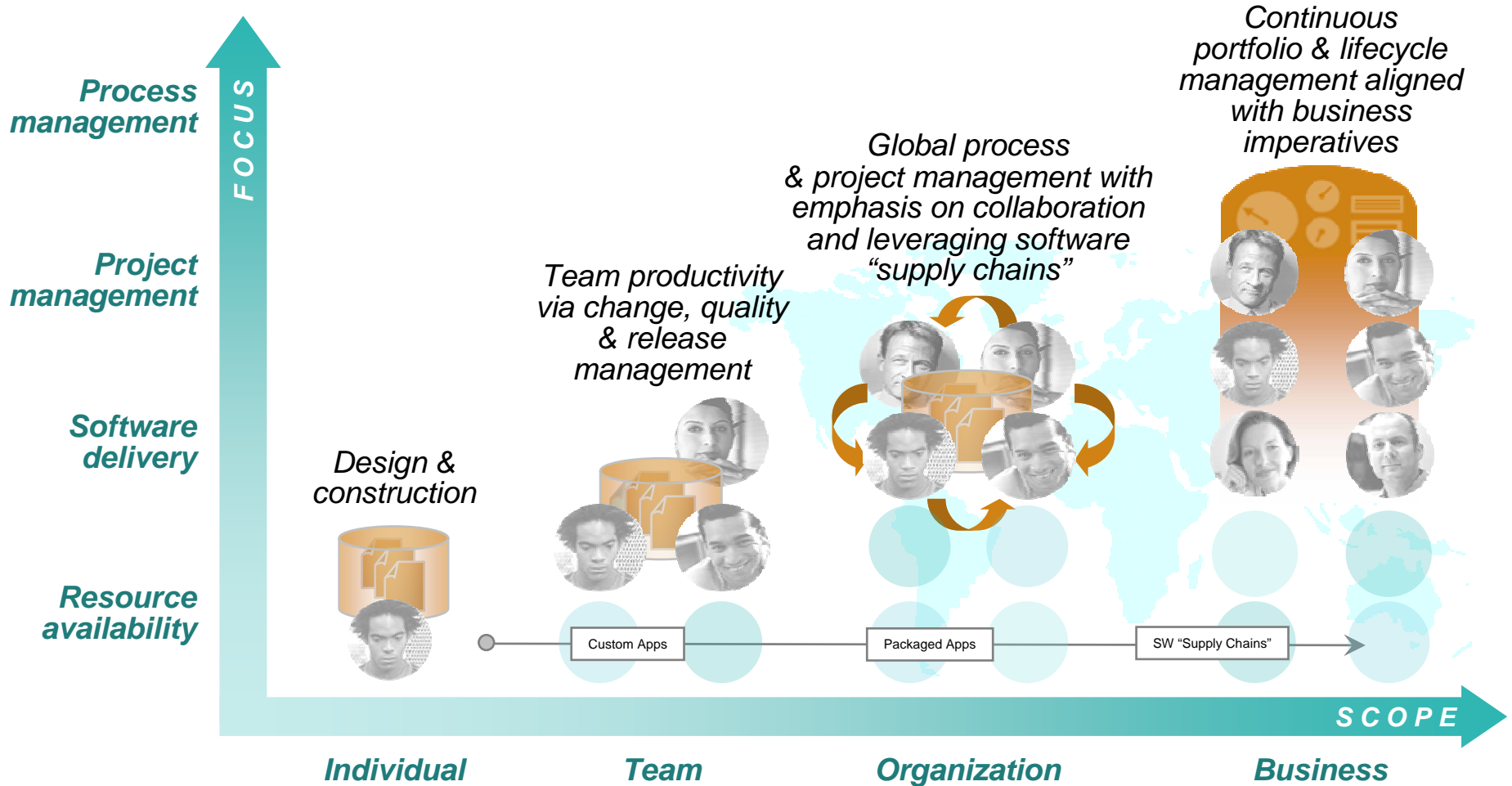
  ▶ Customers success

- Summary

The imperative

An **On Demand Business** is an enterprise whose business processes — integrated end to end across the company and with key partners, suppliers and customers — can respond with speed to any customer demand, market opportunity or external threat.

An evolution of desired value – What you want
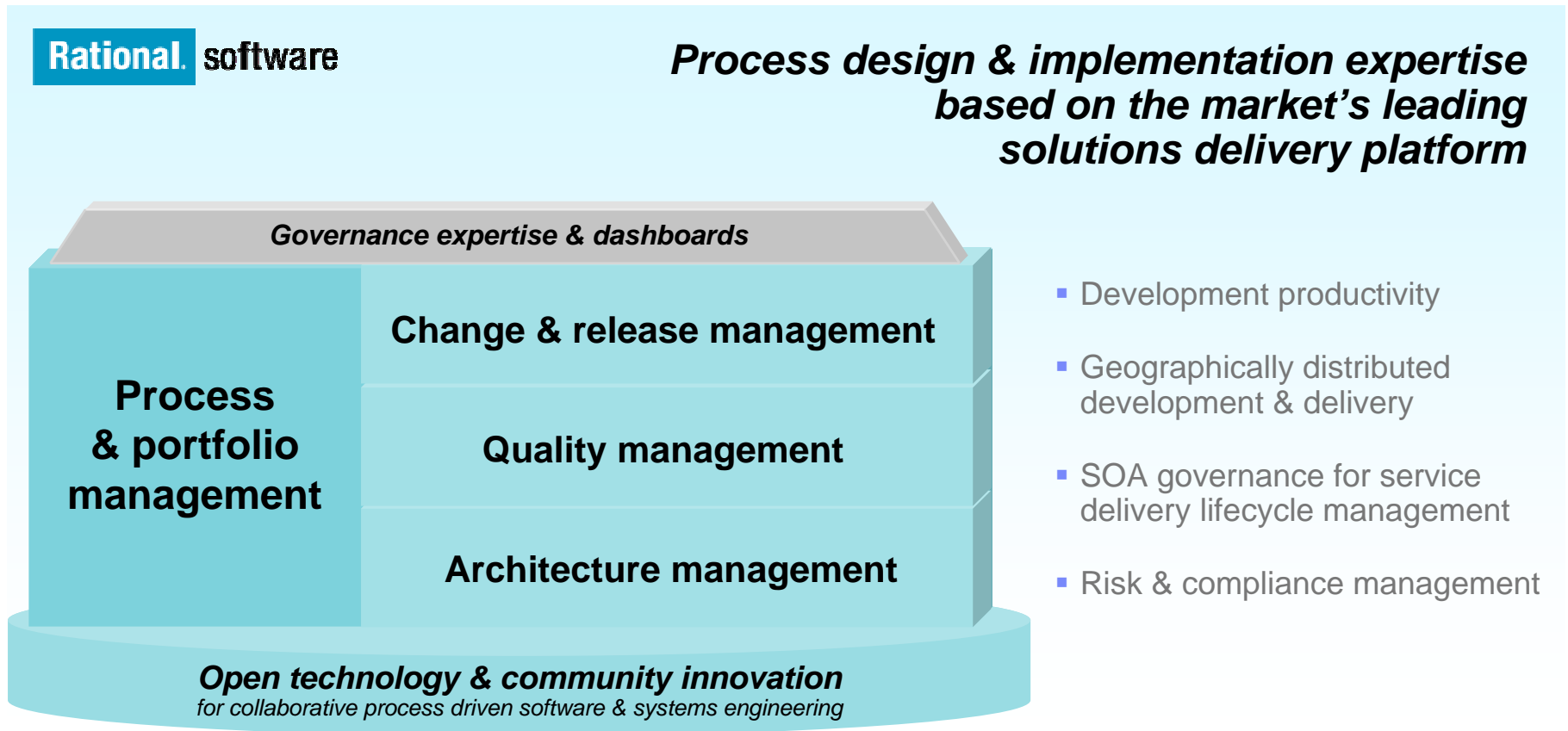## *Customers are maturing their approach to software delivery*

FOCUS

Process management

Project management

Software delivery

Resource availability

Continuous portfolio & lifecycle management aligned with business imperatives

Global process & project management with emphasis on collaboration and leveraging software "supply chains"

Team productivity via change, quality & release management

Design & construction

Custom Apps — Packaged Apps — SW "Supply Chains"

SCOPE

Individual   **Team**   **Organization**   **Business**

IBM Rational software
Partnering in business innovation and transformation

Business imperatives

- Global capability

- Business flexibility

  - Time to market

- Risk & compliance management

Governance & lifecycle management

Rational. software

Governing the business process of software and systems delivery

Decades of proven process expertise & customer success

Business innovation & transformation

- Alignment

- Control

- Efficiency

IBM Rational Software Delivery Platform
What we offer

Rational. software

Process design & implementation expertise based on the market's leading solutions delivery platform

Governance expertise & dashboards

Process & portfolio management

Change & release management

Quality management

Architecture management

- Development productivity

- Geographically distributed development & delivery

- SOA governance for service delivery lifecycle management

- Risk & compliance management

Open technology & community innovation
for collaborative process driven software & systems engineering

Key architecture management challenges

SAP HR system

Custom .Net applications

Back-office legacy systems

Home-grown line of business apps.

Oracle Siebel CRM

Windows

.Net

AIX

Linux

Java

COBOL/zOS

5iOs

Existing Applications

- Costly to maintain

- Monolithic

- Hard to reuse in new ways

Skills

- Skills silos

- Skills mismatch

- Erosion of legacy platforms skills
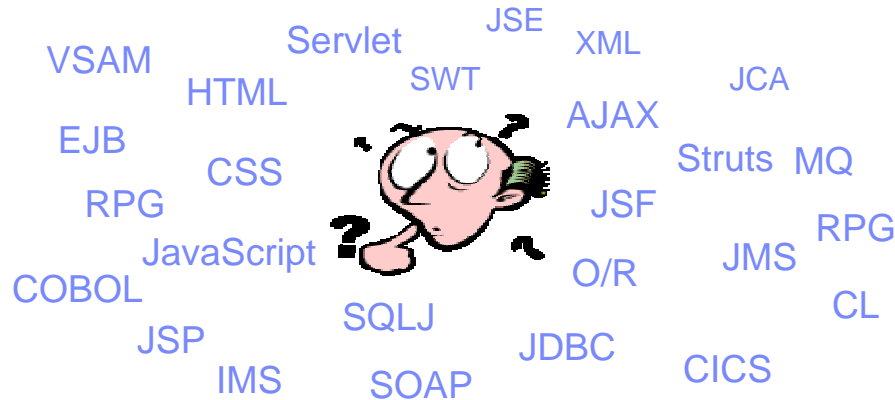
Platforms / Middleware

- Proliferation

- Coexistence

- Complexity

❌ **High costs**   **Compromise**   **Slow response** ❌

A Closer Look at Construction Challenges
Building applications today is not easy

VSAM HTML Servlet SWT JSE XML JCA

EJB CSS AJAX Struts MQ

RPG JSF RPG

JavaScript O/R JMS CL

COBOL SQLJ

JSP JDBC CICS

IMS SOAP

- Learn and master a myriad of middleware programming interfaces

- Understand new programming paradigms, frameworks, libraries

- Cross platform solutions require totally different programming skills

- Constantly emerging new technologies, frameworks, standards, etc

IBM Rational EGL
addressing the challenges of construction of Services and Applications

- Decouple application specification from runtimes

- Immediately useable by developers of any background

- Hide technical complexity

- Support emerging standards and technologies

- Guarantee optimal (native) deployment to any platform
  - ▸ New and traditional

- Ensure easy inter-operability with legacy

- Ensure productivity without compromising flexibility
  - ▸ Language simplicity
  - ▸ Language robustness

- Provide agile, iterative development

The Rational Business Developer Extension Solution
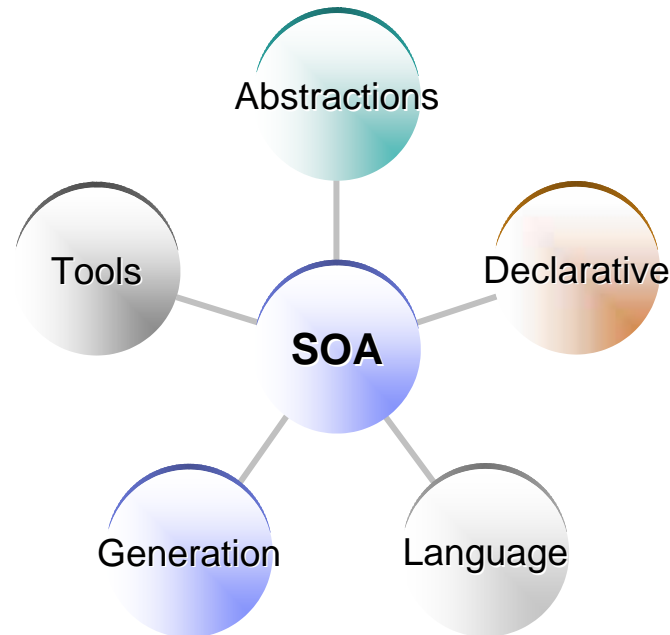
A simple and robust unified approach to end-to-end construction of services and applications that shields developers from intricacies of runtimes and middleware and is easy to learn and highly productive
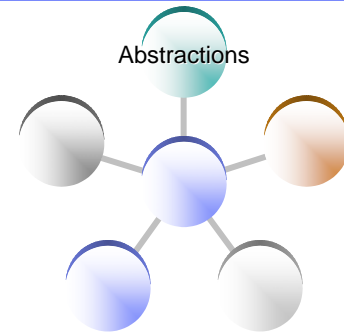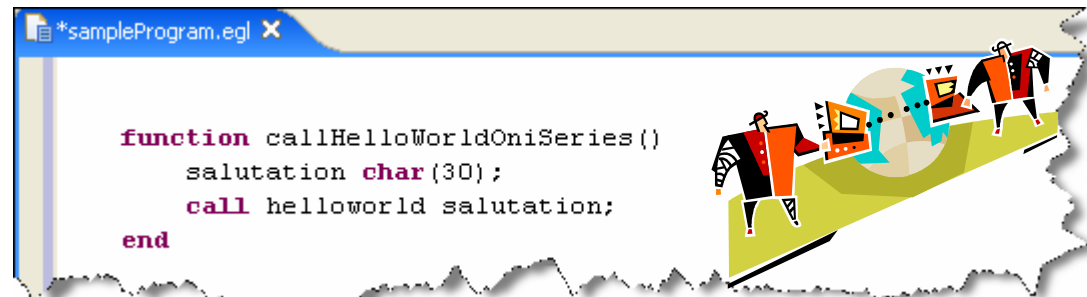
The power of abstractions

Abstractions

- Data access:
  - ▶ "Records" provide access to:
    - SQL, Indexed, Relative, Serial, DL/I, Service data
  - ▶ Common Verbs for data access (**Get, Add, Replace, Delete**)
  - ▶ Allows complete access to SQL statement if needed
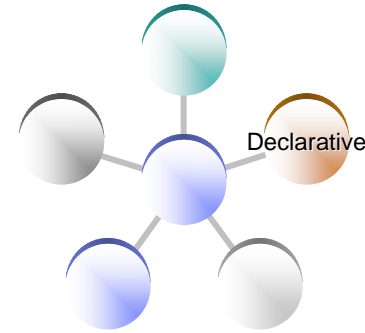 - ▶ Common Error Handling

```
*sampleProgram.egl ✕

    function allLoans()
        loans LoanRec[];
        get loans;
    end
```
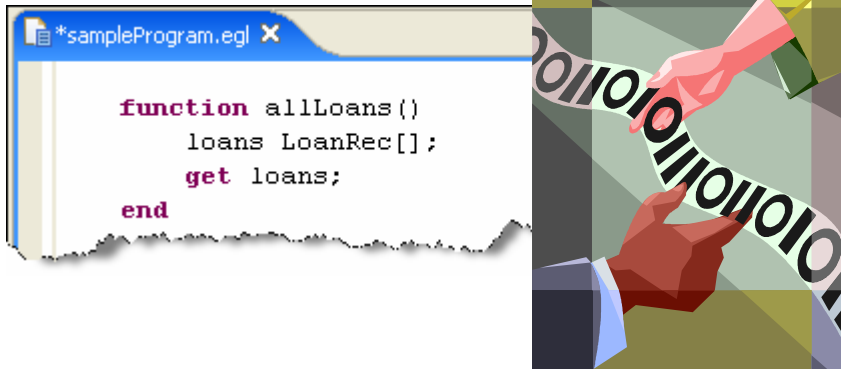
- Remote Invocation
  - ▶ Call COBOL, RPG, C, Java
  - ▶ Linkage information separated from code
  - ▶ Data mapping, protocol invocation all resolved at runtime, NO code necessary!

```
*sampleProgram.egl ✕

    function callHelloWorldOniSeries()
        salutation char(30);
        call helloworld salutation;
    end
```

# The power of declarative programming

Declarative

- Validation/Editing Rules
  - ▶ Via properties in "Data Items
  - ▶ Define formatting & validation rules in a common place
  - ▶ Reuse data items for Records, screens, web pages, reports

```
*sampleProgram.egl ✕

DataItem SSN Password char(9) {
    validatorFunction = "ValidateSSN()",
    displayUse = secret,
    pattern = "XXX-XX-XXXX",
    displayName = "Social Security No",
    inputRequired = yes}
end
```

# The power of tools: Robust Page Design
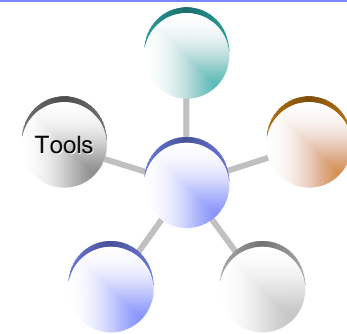
Tools

- First Class integration with Page Designer and JSF tools
  - ▸ Drop EGL data structures on JSP
    - Validation, editing, formatting rules from EGL Data Items applied
    - Appropriate UI controls rendered pre-bound to data declared in EGL Page
  - ▸ Server-side event handlers in EGL within context of page designer

- Integration is totally seamless

- No Java coding required to wire EGL data to JSF

- EGL logic can be used to handle user interaction with the JSP

- AJAX capability built in…partial refresh, etc…
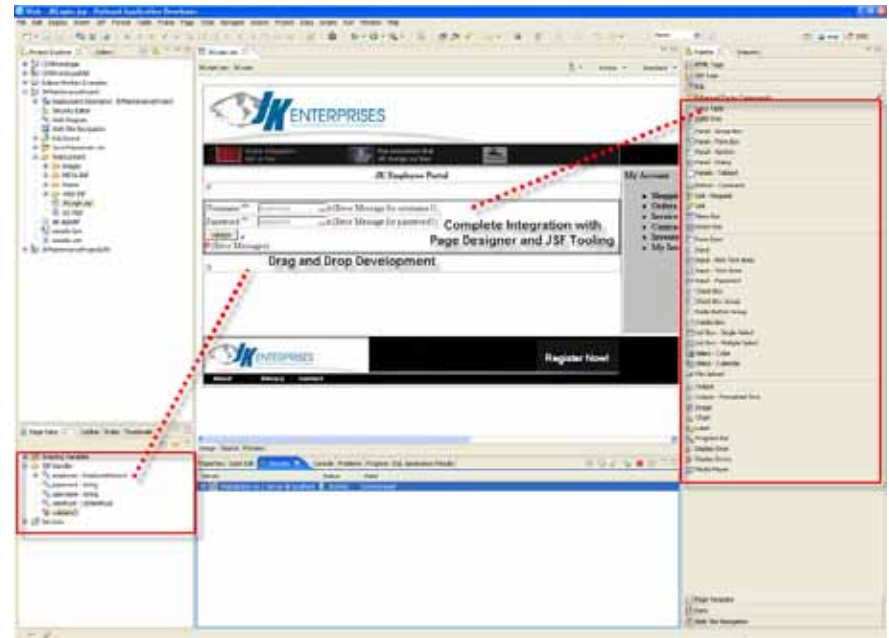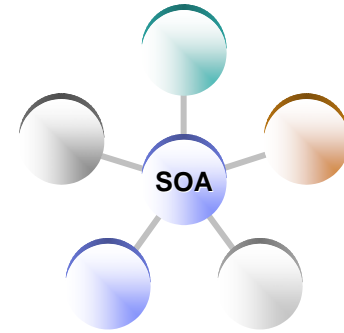
# The power of tools: Debugger

Tools
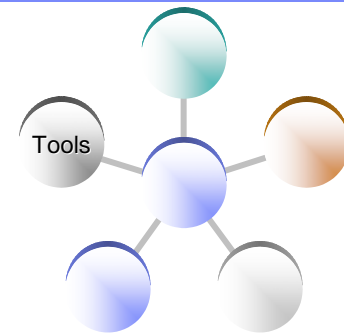
- Debug entire application regardless of ultimate deployment targets
  - Transition from debugging JSP's to EGL code to Java to … and back

- EGL source debugger
  - Breakpoints
  - Watch variables
  - Change values
  - Extends base Eclipse debugger

- Great debugger = great productivity
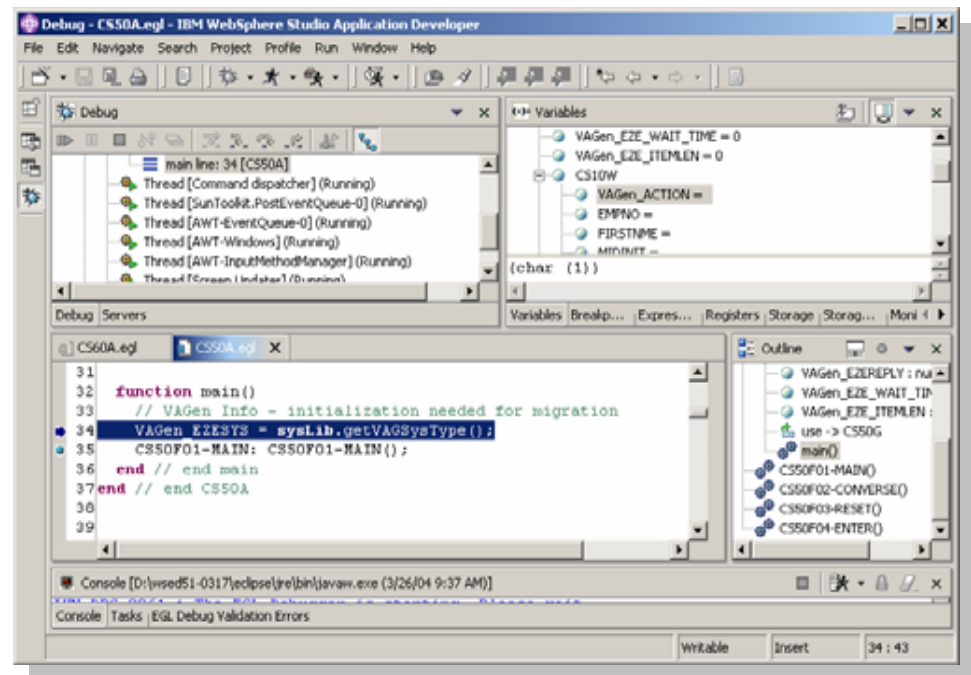
# The power of Services
## *Built into the language*

**SOA**

- Service part
  - ▸ a generatable part containing code that will be accessed
    - ▪ from EGL code by way of a local or TCP/IP connection (*EGL Service*)
    - ▪ from any code by way of an HTTP connection (*EGL Web service*).

```
customerService.egl ✕
// service
Service CustomerService
        Function getCustomer(custid String) returns (string)
//           …
        end
//       …
end
```

- Interface part
  - ▸ Used to access external services as EGL services or simply to provide separation of concern

```
customerService.egl    creditCheck.egl ✕
// interface
Interface creditCheck

    function checkCredit(SSAN string in) returns (string);
//  ...|
end
```

The Power of Services

EGL in IBM Rational Business Developer Extension: cross platform language for business oriented services development

At development time…
- Focus on the business logic
- Implement SOA design elements: services and interfaces
- Leverage existing business developers for new SOA development
- Ignore deployment targets/technology while coding/testing

Leverage external web services…
- EGL Interfaces
  - represent external web services
  - Are created via import from WSDL
  - Allow the EGL developer to stay within the context of the EGL programming model

Assemble

Deploy

Model

Manage
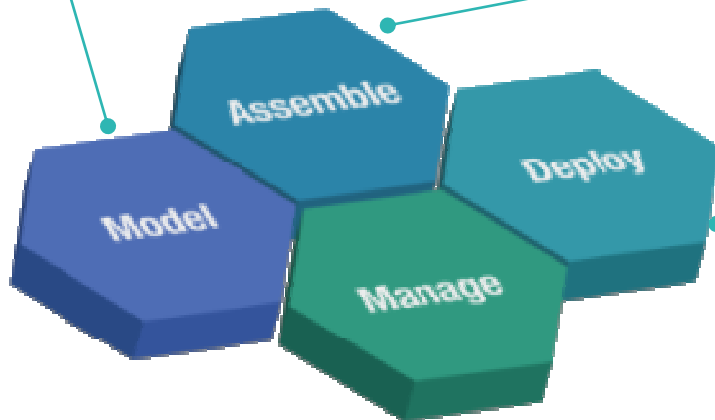
Deploy EGL services…

To any platform
- Java to WAS/Tomcat/etc.
- COBOL to CICS, iSeries (1Q 2007)
- COBOL to IMS (2H 2007)

As…
- A Web service (uses SOAP)
- A private service (uses CICS ECI or TCP)
- Other SOA runtimes when they reach critical mass

Respond to Broadest Application Needs

Batch Processes	Text UI	Web	Rich UI	Reports	Web/Native Services

EGL single, simplified programming approach

Other Programs and Services

- COBOL
- RPG
- PL1
- C, C++
- Java

Databases

DB2 UDB	Informix
SQL Server	IMS
Oracle	VSAM
Derby	other…

Platform Flexibility

ClearCase, CVS, Other

EGL program/library/service

System z

- **WebSphere**
- **USS**
- **Linux**
- **Batch**
- **CICS**
- **IMS***

COBOL

Windows, Linux, Unix

- **WebSphere**
- **Tomcat**

System i

- **WebSphere**
- **Native i5OS**
- **Native i5OS**

COBOL

* Planned

The RBD Extension Difference

Power	Flexibility	Simplicity	Productivtiy	Robustness
First Class Eclipse/RAD Integration		Concise Uncluttered Language		
	Any Application topology and UI		Model-to-Code automatic generation	
The Language of SOA		Platform neutrality		Native Deployment Exploit Runtime QoS
	Any platform (J2EE, zOS, i5OS)		Lower manual coding requirements	
Modern powerful Extensible Language		Single interface to any data source		First Class Development Lifecycle Integraiton
	Developers Portability		Source Debugging Iterative development	
		Seamless legacy invocation		Well behaved executables, first class Systems Mgmt
			Quick Generation and deployment	

Accelerating enterprise modernization
Rapid cross-platform Web and SOA development

| **Rapidly integrate existing mainframe assets into service oriented solutions**	**Break Skills Silos**	**Simplify cross platform development**
▼	▼	▼
Leverage trusted mainframes quality of service	**Maximize use of programming resources and business domain knowledge**	**Respond to business needs independent of underlying technology implementation**
Reduce mainframe and server maintenance and new development cost	**Reduce retraining costs**	**Improved quality and architectural integrity**

Leverage IBM Rational's commitment to open technology and modularity

Rational Business Developer Extension is right solution tailored to specific mainframe and cross-platform needs

Accelerating Application Delivery
Internal productivity benchmark for Sun PetStore reference application

Hand-Coded
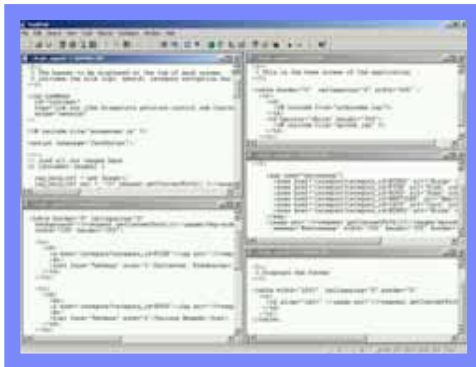
Java/J2EE IDE

RBDe

507 Hours

330 Hours

60 Hours

- RBDe and EGL/JSF is **dramatically faster** than traditional development

Morpheus:

Transform manual/paper process into state-of-the-art Web System for a Major UK Financial Instution

- **Challenge:**
  - ▶ The insurance quote process from major automobile dealerships (BMW, Renault, Peugeot…) clients, manual and paper based, was becoming a competitive handicap

- **Solution:**
  - ▶ A state-of-the-art web based e-business application providing direct access from dealerships to Insurance systems to rapidly gather accurate quotes.

- **Results:**
  - ▶ EGL's short learning curve, high level of abstraction, and automatic code generation enabled Morpheus, a System Integrator based in the UK, to leverage developers of different backgrounds in delivering the system to the Client in record time (less than 100 days!)
  - ▶ The new system virtually eliminates costly errors, delivering quotes in record time with great Customer satisfaction

MORPHEUS
eBusiness Solutions

"*EGL allowed us to staff the application project with developers of different skills and deliver the system in just 100 days!! We are lookin forward to our next project....*"

Bleddyn Wiliams, Director of eBusiness Solutions

KBC
Unifying application development across platforms (Unix and Mainframe) and transaction managers (WAS and IMS)

- **Background:**
  - Large Belgian Bank & Insurance company with a successful expansion in Central and Eastern Europe .
  - Striving for cost reduction through synergy and integration

- **Objectives:**
  - **Create interchangeable developers**. Shift from monolithic (3270) applications to browser based and open systems. Transform 600 mainframe developers (KBC) as multi employable developers for Unix and mainframe
  - **Enabling component based architecture**: Shift to component based architecture, product factories and multi channel
  - **Support multi-site development**: Project teams scattered across different European countries and India.
  - **Reuse automation investments.** Business wants to create synergy by using the same solutions in Belgium and CE. Develop solutions & business components reusable within each KBC subsidiary.

- **Solution:**
  - Leverage EGL to achieve the Cross-System components development and the elimination of skills siloes among their dispersed development teams

"…we want to avoid the "skill silos", what we really need is a large group of general developers who should not worry about target platforms and focus on developing business components, and only a small number of technology specialists, so that we can swiftly allocate general developers to upcoming business needs….EGL is helping us achieve this goal.."

Lieven.Gouwy IT Architect, KBC , Redmonk Podcast

Summary

- RBDe is a powerful extension to IBM Rational Business Driven Development to help Customers
  - ▶ Break the skill silos and leverage business know-how of all developers
  - ▶ Build innovative state-of-the-art solutions without the bite of skill ramp up and high costs
    - Lower risk and increase project success rate
    - Lower costs of training
    - Lower Cost of development
  - ▶ Deliver Projects faster

- For More information

  - External RBDe Web Site (www.ibm.com)

    http://www-306.ibm.com/software/awdtools/busdev/ext/

  - External RBDe Web Site (developerWorks – RBD Extension zone)

    http://www-128.ibm.com/developerworks/rational/products/rbde