

Modern Application Development Featuring Web 2.0 for System z

Introduzione e Agenda


Rational. software

Obiettivi

- Esplorare le innovazioni fornite dagli strumenti IBM Rational per l'Enterprise Modernization, le loro funzionalità e il loro utilizzo nelle diverse fasi del ciclo di vita di sviluppo software
- La sessione vuole anche indirizzare la migliore comprensione del valore delle tecnologie Web 2.0 nell'attuale contesto del business.

Agenda

14:00 – 14:30	Introduzione Web 2.0 e overview Rational Enterprise Modernization
14:30 – 15:45	CICS e Web 2.0. Rational Tooling
15:45 – 16:00	Break
16:00 – 17:15	Introduzione a Enterprise Generation Language (EGL) e Demo: creare e integrare applicazioni Web 2.0
17:15	Q&A e Fine Lavori

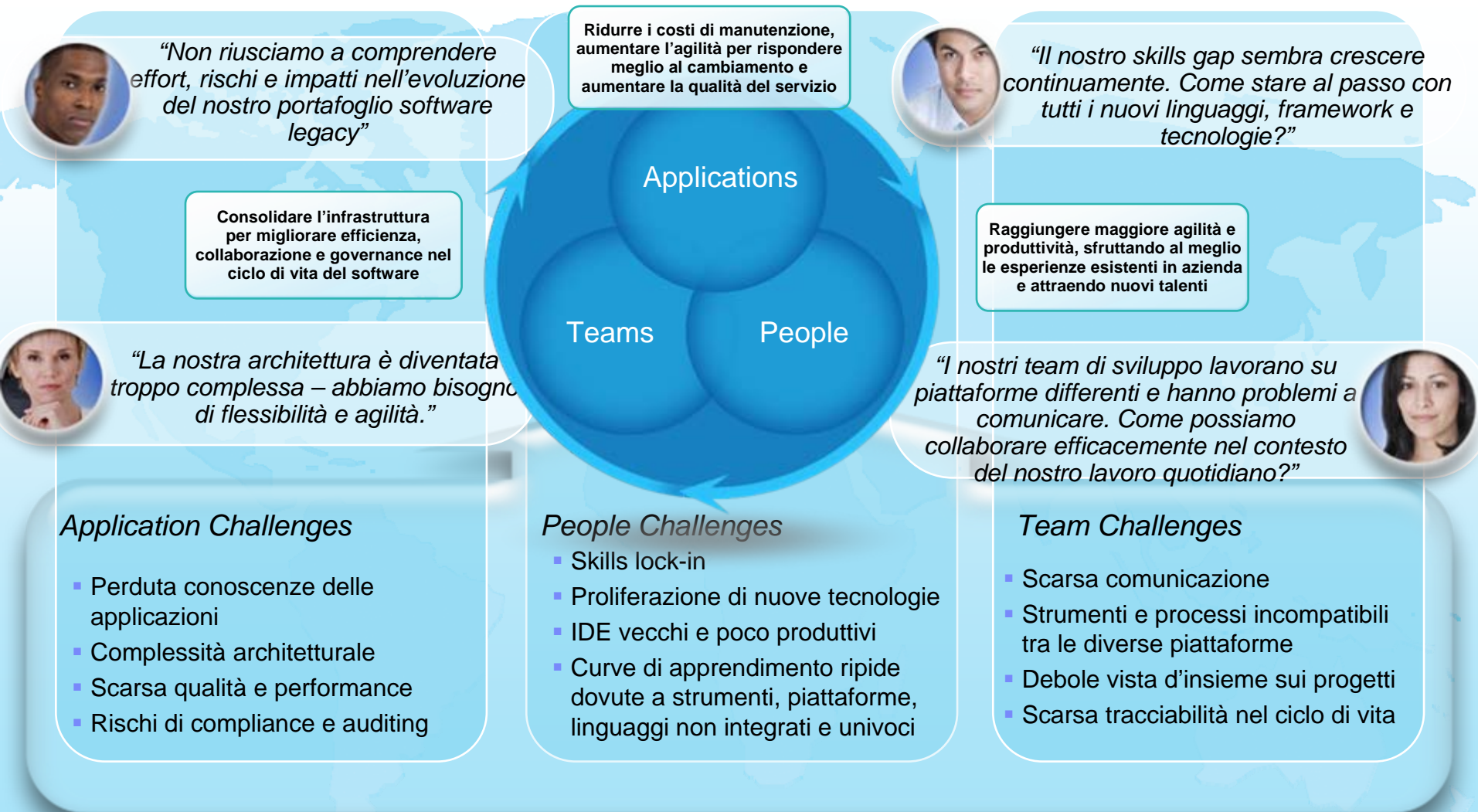


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IBM Enterprise Modernization

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Sfide chiave nella modernizzazione



Differenti aspetti da considerare

- **Inventario degli assets esistenti e delle loro interrelazioni per riguadagnare il controllo e minimizzare i costi di sviluppi duplicati e inutili**
- **Evolgere architetture e applicazioni:**
 - Refacing delle vecchie applicazioni “green screens” per quick win e ROI veloce
 - Costruire nuove applicazioni integrando e riusando gli asset esistenti nei nuovi sviluppi
 - Analisi e refactoring degli assets per riusarli in architetture moderne
- **Approcciare piattaforme eterogenee con un “Single IDE” per guadagnare produttività, fare economia di scala e ampliare la disponibilità di esperienze e skills preziosi**
- **Abbatere le isole di sviluppo e definire una infrastruttura comune di collaborazione per eliminare le inefficienze**

Comprendere il valore del portafoglio applicativo



Risparmiare tempo e soldi riacquisendo la conoscenza dell'esistente

- ▶ Determinare velocemente gli impatti di un cambiamento
- ▶ Identificare ed eliminare dead code e difetti nel codice
- ▶ Enuclerare business rules per riutilizzarle come potenziali servizi
- ▶ Refactoring degli assets esistenti per favorirne il riuso



- ✓ Capire processi e mapparli sui sistemi IT
- ✓ Refactoring di asset esistenti per riuso
 - ▶ WebSphere Studio Asset Analyzer
 - ▶ Rational Asset Analyzer
 - ▶ Rational Asset Manager
 - ▶ Telelogic System Architect

Valutare e adottare scelte di investimento più "smart"

- ▶ Comprendere meglio l'intero portafoglio applicativo
- ▶ Acquisire strumenti per valutare la rilevanza per il business
- ▶ Migliorare il processo decisionale con dashboards real-time
- ▶ Collegare applicazioni, sistemi, organizzazioni e processi

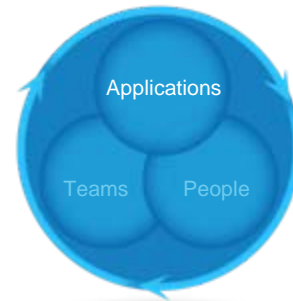


Trasformare la complessità in informazioni usabili

HighMark, a major health care payer, accelerates claims analysis by 70% by using business rule management.



Ridurre i costi e aumentare la flessibilità tramite architetture più moderne



- **Tagliare tempi e costi di sviluppo riutilizzando assets testati e approvati**
 - Abilitare le applicazioni green screen alla SOA e al Web a costi contenuti
 - Creare velocemente web services da applicazioni esistenti

- **Accelerare il deployment di nuovi servizi e user interfaces**
 - Modellare, costruire, deployare e debuggare nuovi servizi indipendenti dalla piattaforma
 - Costruire rapidamente applicazioni “Web 2.0”

✓ **Estendere velocemente e facilmente applicazioni 3270 e 5250 sul web e integrarle in approcci di Business Process Management**

▶ Host Access Transformation Services

✓ **Sviluppare nuovi servizi ed esporre servizi a partire da tecnologie RPG, COBOL, C, C++, Java, PL/I, EGL**

▶ Rational Developer for System z

▶ Rational Developer for System i

✓ **Creare modelli architetturali dai modelli dei processi di business. Governare il riuso**

▶ Rational Software Architect

▶ WebSphere Business Modeler

▶ Rational Asset Manager

▶ WebSphere Integration Developer

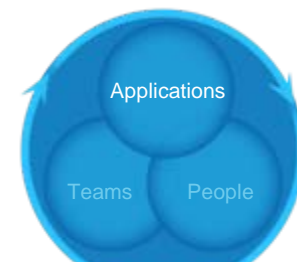
▶ WebSphere Service Registry and Repository

“HVB IS adopted IBM Rational® Developer for System z software to accelerate mainframe development, improve the efficiency of its COBOL development teams, and move to a similar environment for mainframe and Web development” –

Almut Geiger, Product Specialist at HVB IS

 **HVB Information Services**
UniCredit Group

Gestire la qualità e contenere i rischi



■ Coordinare la qualità end-to-end attraverso piattaforme eterogenee

- Tracciare i requisiti in tutto il ciclo di vita
- Identificare e risolvere i difetti fin dalle fasi iniziali del ciclo di vita
- Gestire e pianificare la qualità in maniera consistente

■ Garantire la ripetibilità attraverso test automatizzati

- Validare la scalabilità delle applicazioni
- Identificare e fixare colli di bottiglia nelle performance
- Scoprire vulnerabilità, problemi di privacy, qualità, accessibilità e violazioni di policy nelle applicazioni web
- Generare automaticamente audit e compliance reports

✓ Raccogliere, elaborare, discutere, gestire, e revisionare i requisiti

- ▶ Rational Requirements Composer
- ▶ Rational RequisitePro
- ▶ Telelogic DOORS

✓ Coordinare piani, processi e risorse per garantire la qualità nel ciclo di vita

- ▶ Rational Quality Manager

✓ Condurre software code reviews ed enforcement di policy fin dalle prime fasi del ciclo di vita

- ▶ Rational Software Analyzer

✓ Ridurre tempi, contenere costi, garantire ripetibilità, performance e scalabilità con il test automatico

- ▶ Rational Functional Tester
- ▶ Rational Manual Tester
- ▶ Rational Performance Tester

✓ Identificare vulnerabilità, esposizioni di privacy, problemi di qualità e non compliance a standard

- ▶ Rational AppScan

"AppScan has increased our team's productivity by enabling us to automate very complex and time-consuming activities as well as help substantially increase our level of quality, security and regulatory assurance."

- [André Hiotis, technology security officer, NAV CANADA](#)



Migliorare la produttività delle persone eliminando skill silos

■ Usare un unico IDE basato su Eclipse per differenti piattaforme, linguaggi e tecnologie

- Migliorare la produttività degli sviluppatori legacy
- Contenere i costi dei MIPS per lo sviluppo mainframe fruendo di funzionalità di syntax check e compilazione locale
- Attrarre nuovi talenti con IDE moderni e familiari anche su ambienti e tecnologie legacy

■ Abilitare gli sviluppatori a rilasciare soluzioni multiplatforma consistenti e di qualità

- Semplificare lo sviluppo di applicazioni Web 2.0 e SOA
- Ridurre la necessità di avere skills su JavaScript, Ajax, JSON, HTML and CSS, etc.
- Deployare le applicazioni su piattaforme target eterogenee



✓ Accelerare lo sviluppo di applicazioni web, tradizionali RPG, COBOL, C, C++, PL/I, EGL, Web services, con la produttività di un "Single IDE"

- ▶ Rational Developer for System z
- ▶ Rational Developer for System i
- ▶ Rational Migration Extensions for Natural and RPG

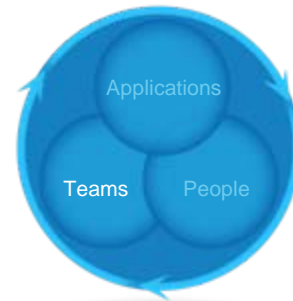


Target Platform:
System z, IBM i, and distributed

"Currently we have one set of developers for web applications, and another for batch systems. With EGL, the same developers can do both, and we can offer our clients a choice of deployment platforms,"

- Mauricio Alvarenga, IT manager at Montreal Informática

Ridurre i costi e migliorare l'efficienza unificando i teams in un processo univoco



■ Rimuovere gli ostacoli agli sviluppi distribuiti

- Collaborare tra team geograficamente distribuiti indipendentemente dalla piattaforma
- Definire un ciclo di sviluppo software più automatizzato, trasparente e predicibile
- Accedere agli asset software ovunque, sempre, utilizzando tecnologie web 2.0
- Comunicare in real time, in context

■ Massimizzare la visibilità e la trasparenza sullo stato dei progetti

- Usare una singola interfaccia web per fornire una vista globale sulla salute dei progetti
- Adottare una governance agile adeguata a team e piattaforme eterogenee

■ Automatizzare il processo di build, change e release multi-piattaforma

- Abbattere costi e tempi dovuti a interventi e rilavorazioni manuali
- Assicurare il riuso di asset certificati, valutare l'impatto dei cambiamenti

✓ Collaborare tra tutti i teams, customizzare i processi, mantenere facilmente il controllo e la supervisione

- ▶ Rational Team Concert for System z
- ▶ Rational Team Concert for i
- ▶ Rational Team Concert
- ▶ Rational Method Composer
- ▶ Telelogic Focal Point


✓ Produrre build multipiattaforme coordinate, tracciabili e automatizzate

- ▶ Rational BuildForge

“By providing our development teams with a common platform from which to analyze, design, develop, and test, IBM Rational solutions have created opportunities to improve the quality of our software as well as our organization”

- Douglas Cook, [Verizon Business](#)





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Overview e Valore del Web 2.0

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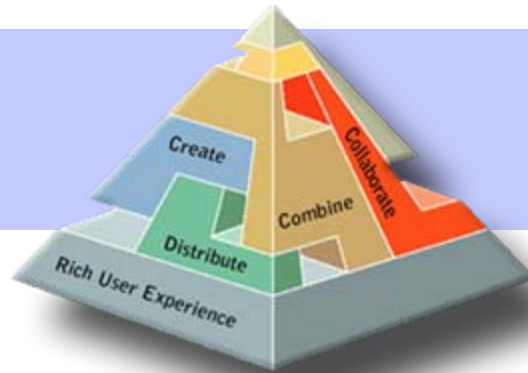
Agenda

- **Basics of Web 2.0**
 - Overview
 - Technology
- **Why Web 2.0?**
- **Enterprise Modernization and Web 2.0**

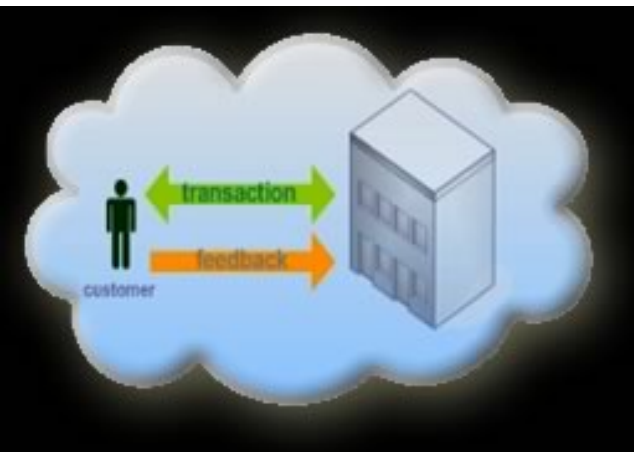
Web 2.0!

What is Web 2.0?

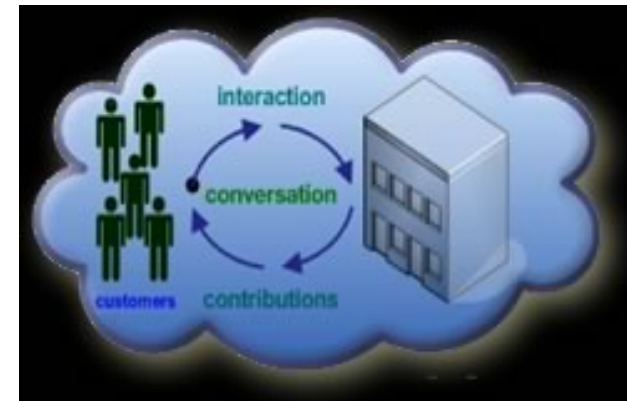
Web 1.0 was about **connecting computers** and making technology more efficient for computers.



Web 2.0 is about **connecting people**, and making technology efficient for people.



Web 2.0 changes the way businesses interact with customers



Expanding from dozens of markets with millions of people to millions of markets of dozens of people

Why Web 2.0?



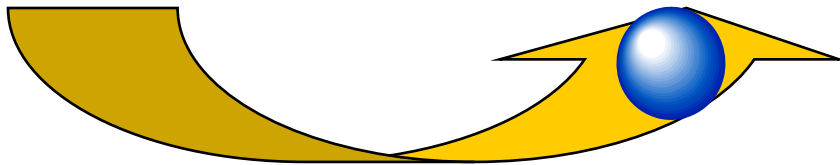
Web 2.0 technologies

- Extend the rich user experience of client/server to the web
- Enable subject matter experts to build loosely-coupled composite applications via reuse and “mash-ups”
- Allow disjoint data to be quickly combined in different ways to make an immediate business impact
- Are based on standards (e.g. SOAP, REST, JSON, Atom)

Web 2.0 technologies highlight the next pendulum swing between client and server function.

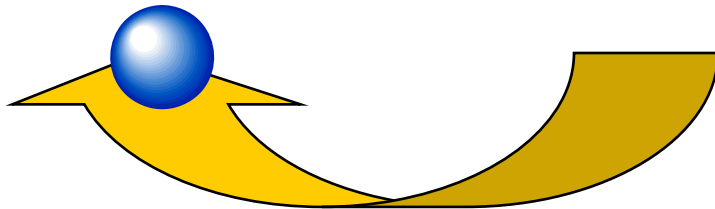
Client

Server



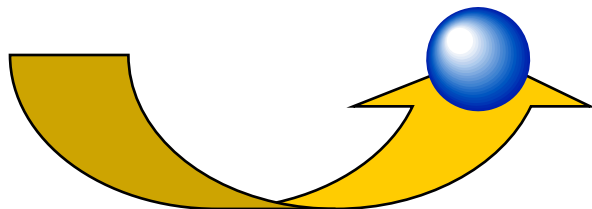
Mainframe computing

“Dumb” little green screen clients
Omnipotent big mainframe servers



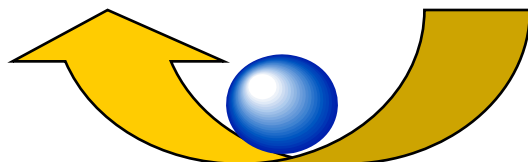
Client-server computing

“Smart” Personal Computer clients
Simple file and database servers



Web (1.0) computing

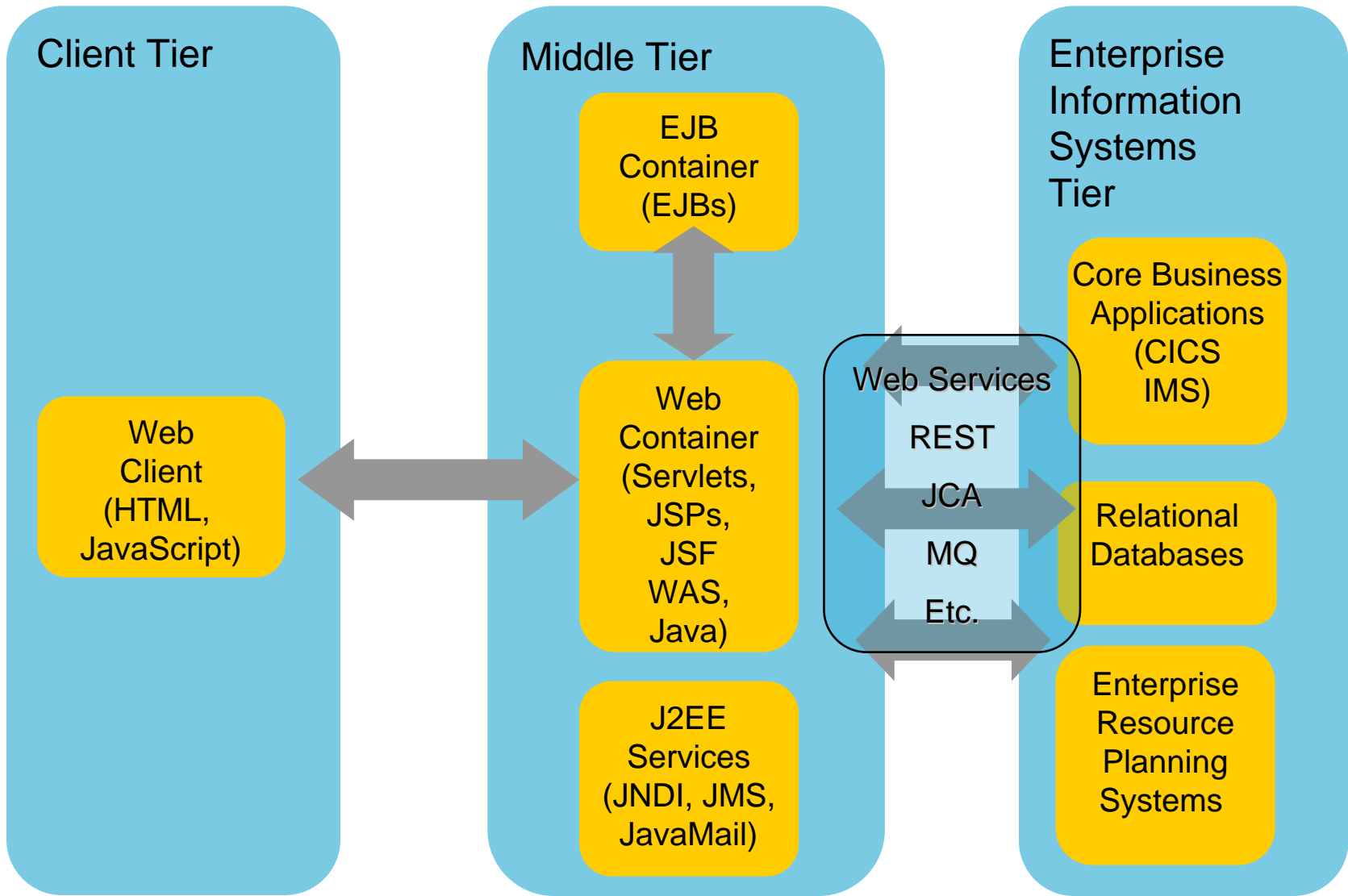
Light Web Browser clients
Rich application and database servers



Web 2.0 computing

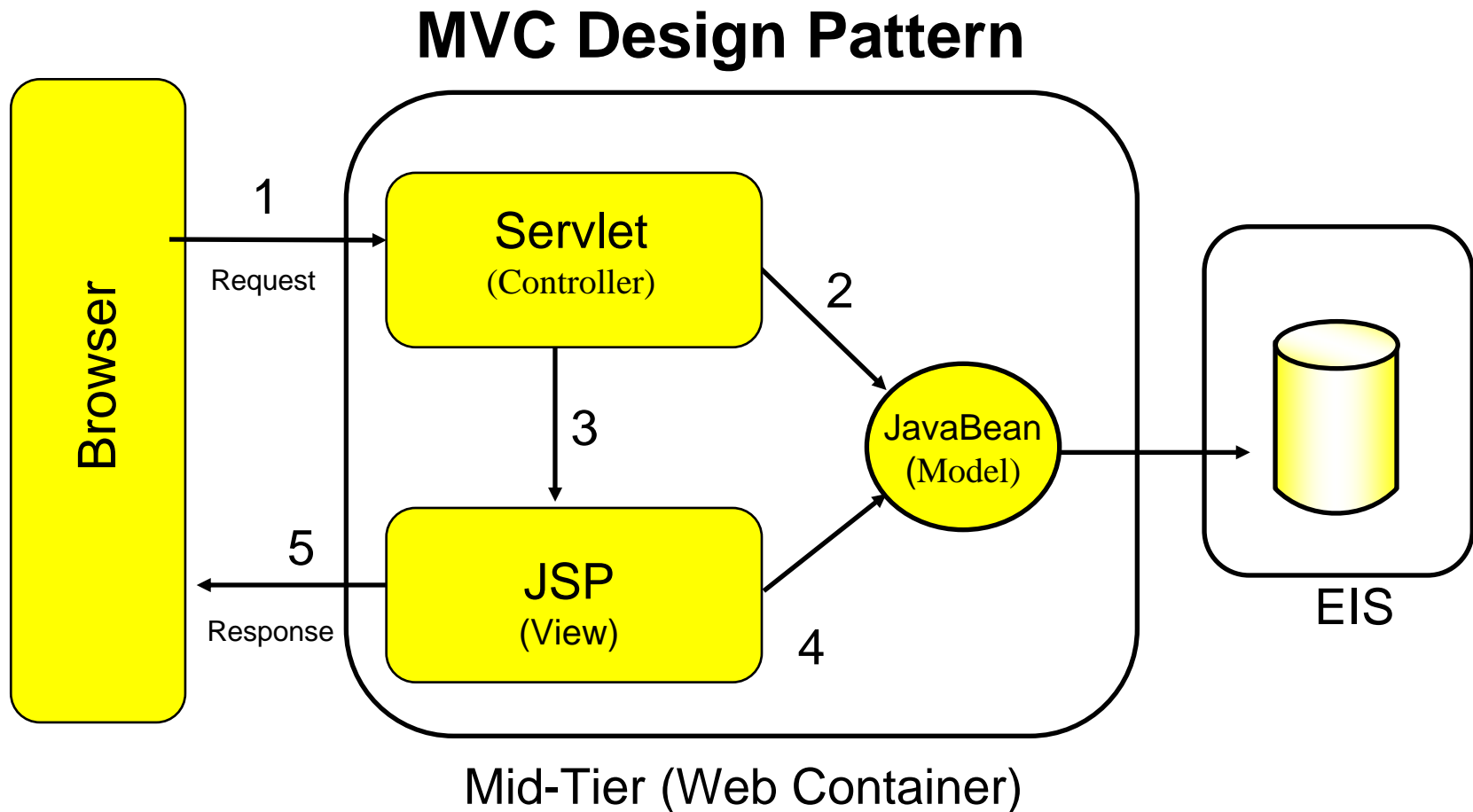
Rich Internet Application clients
Lighter application and database servers

Web 1.0 Architecture

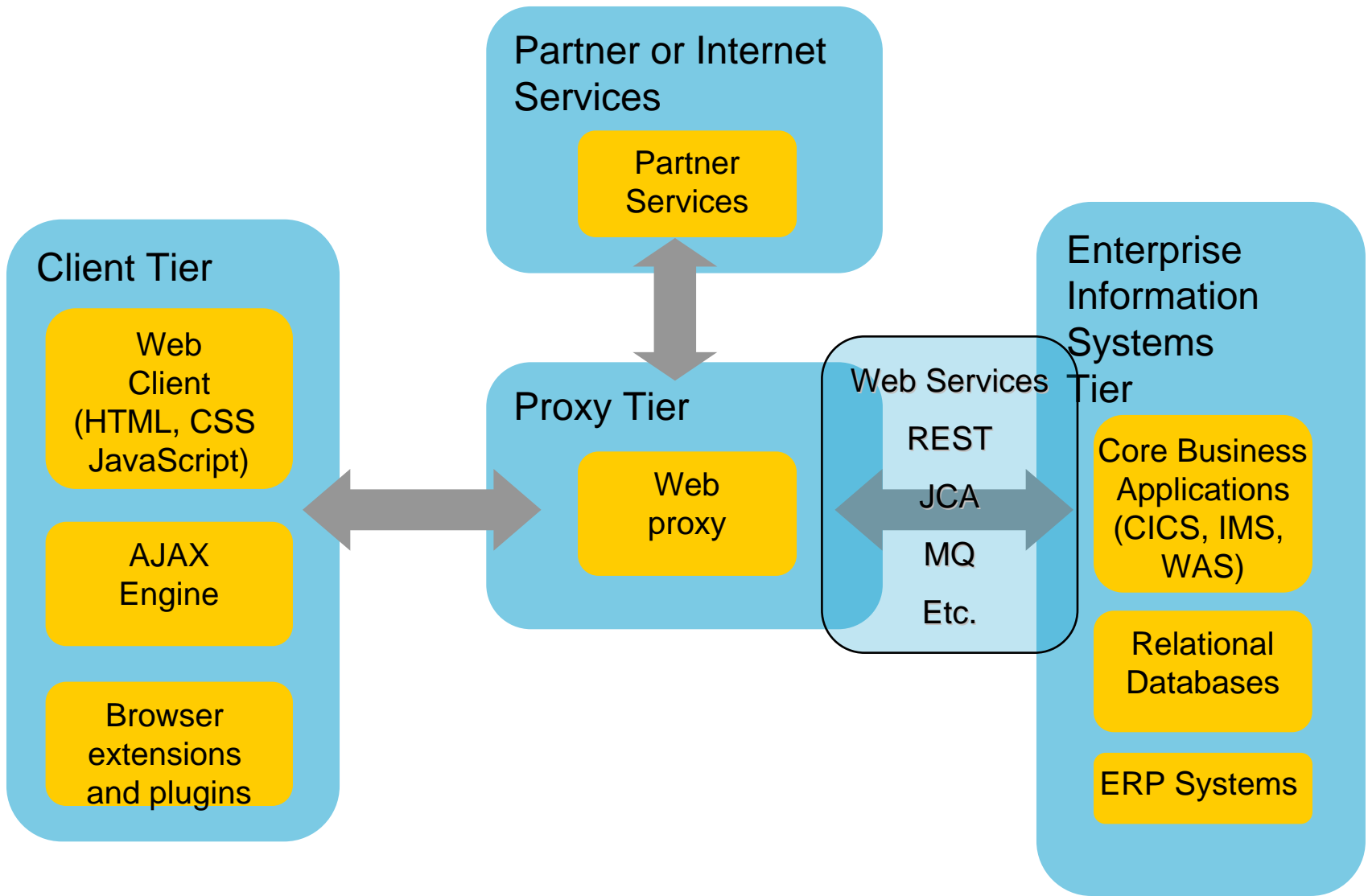


Web 1.0 Application Model

- A request is sent to a servlet that generates dynamic content and calls a JSP page to send the content to the browser, as shown:

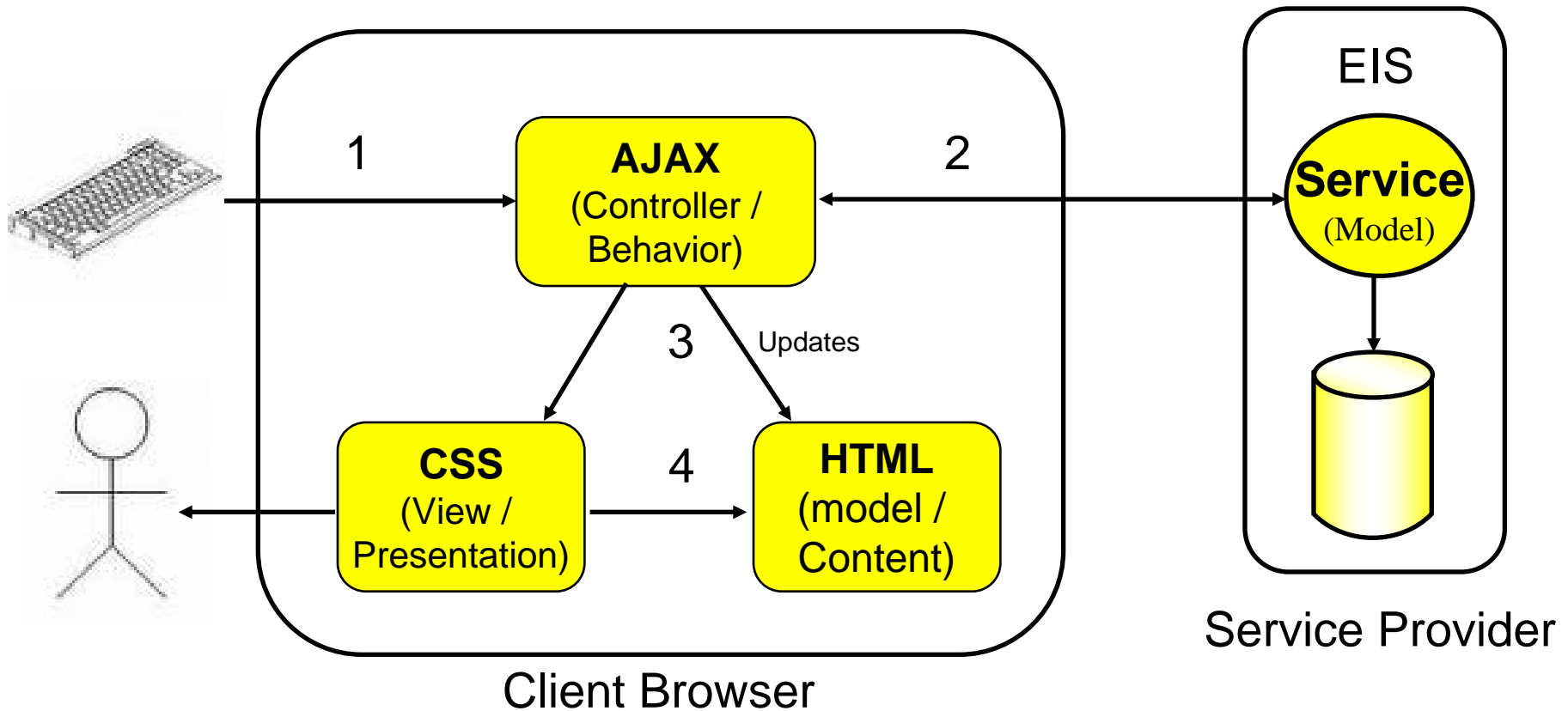


Web 2.0 Architecture



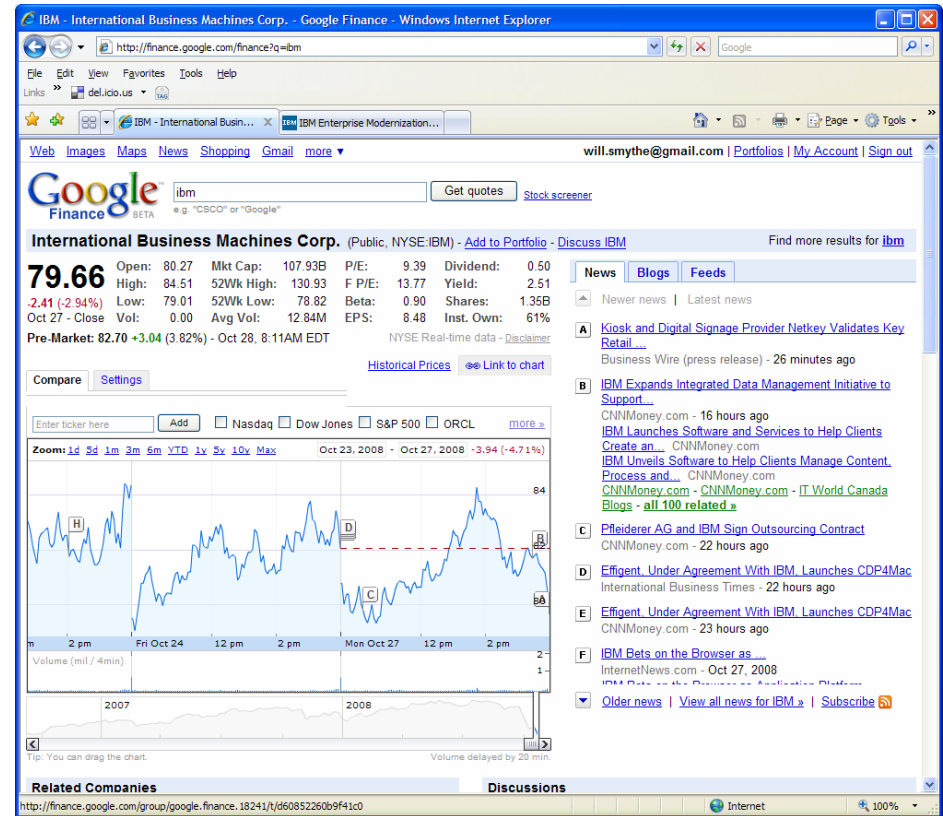
Web 2.0 Application Model

- User enters data on a page. The new data is formatted into a service call, and sent to the service provider. The response is returned to the client and the page is updated.



Web 2.0 / Rich Internet Application (RIA) Characteristics

- Rich user experience
 - Minimal page transitions
 - Dynamic content in the browser
 - Data asynchronously retrieved via REST or SOAP service calls
 - Client-side validation
 - Simplified user interface
- User encouraged to add value
- Integration of relevant data from multiple sources
- The benefits of RIA (or RichUI) include:
 - Improved user-responsiveness
 - “Rich-er” functionality – beyond the simple rendering of HTML, to include dynamic widgets and components
 - Improved browser/server load-balancing – as more of the business functionality can be distributed to the desktop (browsers)



Mashups

Combine content from more than one source into an integrated experience

Google Map

Hotel information — separate database

Directions — come from somewhere else

Send to a phone — Additional functionality

Disney's Yacht & Beach Club Resorts Yacht Club + x
★★★★☆ 430 reviews - [more info](#) »
1800 Esplan Blvd.
Lake Buena Vista, FL 32830
(407) 934-8000
[go.com](#)

[Get directions](#) - [Search nearby](#)
[Save to My Maps](#) - [Send to phone](#)

Why?

- Rapid application development
- Reuse existing services
- Avoid reinventing the wheel
- Empowers users

Technology Attributes of Web 2.0

Rich User
Experience

AJAX incorporating: XHTML and CSS, DOM, XML and XSLT, XMLHttpRequest and JavaScript allowing information to be mashed up into new interactive portals."

Lightweight
Programming
Model

XML or JSON data over HTTP, in a lightweight approach sometimes referred to as **REST** (Representational State Transfer).

Info-ware

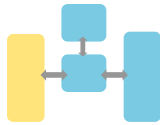
"DATA is the new HTML." Database management is a core competency of Web 2.0 companies.

Feeds

RSS/ATOM allows someone to link not just to a page, but to **subscribe** to it, with notification every time that page changes.

Perpetual Beta

Users must be treated as co-developers, in a reflection of open source development practices. The open source dictum, **"release early and release often"**



What is AJAX

- **AJAX – Stands for *Asynchronous JavaScript and XML*.** RichUI makes extensive (almost wholesale) use of AJAX, utilizing it whenever it makes a service call. RichUI never executes a traditional HTML Form Submit.
- **JSON – *JavaScript Object Notation* is lightweight format used by JavaScript to exchange data.** JSON is able to serialize structured data, such as arrays, and exchange it among host and client machines.
- **DOJO – An open source JavaScript toolkit.** The DOJO project sets out to create widgets using only JavaScript. RichUI is able to interface with DOJO code in order to pull in some of their widgets.

– <http://dojotoolkit.org/>

```
{
  "firstName": "John",
  "lastName": "Smith",
  "address": {
    "streetAddress": "21 2nd Street",
    "city": "New York",
    "state": "NY",
    "postalCode": 10021
  },
  "phoneNumbers": [
    "212 555-1234",
    "646 555-4567"
  ]
}
```

Column 0	Column 1	Column 2	Column 3	Column 4
Apples	Oranges	Mangos	Eat lots of fruit	\$2.50
One	Two	Three	Four	Five
Apples	Oranges	Mangos	Eat lots of fruit	\$2.50
One	Two	Three	Four	Five
Apples	Oranges	Mangos	Eat lots of fruit	\$2.50

Why Web 2.0 for the Enterprise?

■ Web 2.0 is

- Creating new markets
- Lowering competitive barriers
- Encouraging creativity to come from anywhere
- Harnessing community created media
- Tapping into the wisdom of the crowds
- Enhancing communications and making information more impactful

It's fast becoming a Web 2.0 business world, but innovation never goes out of style.

■ What does it mean for the enterprise?

- Greater collaboration and innovation across the value chain
- Increased levels of customer intimacy
- Simplification of complex IT and business infrastructure
- Business model flexibility to capitalize on new market opportunities

According to Gartner:

By 2008, the majority of Global 1000 companies will have adopted several technology-related aspects of Web 2.0

Missing out on the non-technology aspects of Web 2.0 means that many organizations will also miss out on some of the positive business benefits

Modernization with Web 2.0

Reuse what you already have!

- **For example...**
 - Leverage Web 2.0 in your business critical applications
 - Investigate customization, integration and services opportunities in rolling out web 2.0-based community collaboration environments
- Build a new Web front-end for your existing order entry application, but continue to use your proven business logic.
- Create a self-service portal that provides your customers with details about past and business logic to perform a calculation.
- Expose a portion of current orders.
- Mashup information from multiple CRM systems.
- Reuse existing COBOL customer data locked away in a green screen application to another team in your organization.
- **Web 2.0 is not just for Internet-accessible applications – can be used to improve productivity of internal users!**

- **Benefits:**
 - Instant business value through rapid new product deployment, with reduced costs
 - Reduction in time to market opens new business opportunities
 - Reducing costs through customer self-service
 - Unlocking valuable business data opens new business opportunities
 - Extracting value by collecting and sharing the wisdom in the organization

Resources to help you kick-start modernization

New Educational Resources

System z Sandbox

Example assets and best practices providing low-risk, practical, hands-on path to leveraging IBM solutions

EGL Distance Learning

10 days of FREE instructor-led virtual class

Seminar Series: Web 2 Architectures for IBM Mainframe Developers

For managers and technologists focused on extending value of mainframe applications in modern Web 2 Architectures

Get quick ROI today

Rational Asset Analyzer – find out what assets can be reused today

Host Access Transformation Services – quickly turn your green screens into web UIs

Rational AppScan – make sure your web sites are hacker-proof

System z Solution Videos and Demos

Translated solution videos and demo to help you raise awareness of Enterprise Modernization offerings



- English
- German
- Korean
- Spanish
- Mandarin Chinese
- Japanese
- French
- Italian

<http://rational.dfw.ibm.com/index.html>

*Jump-start
your
modernization
projects!*

<http://www.ibm.com/rational/modernization>



Enterprise Modernization Sandbox for System z

Quickly try practical scenarios guided by self-paced exercises 24/7

System z Sandbox

Examples and best practices provide a low-risk, practical, hands-on path to understanding

- Rational Developer for System z
- Rational Business Developer
- Rational Host Access Transformation Services



- ✓ *Launched on 2/26/08*
- ✓ *Over 250 customer registrations to-date*
- ✓ *13 hands-on tutorials are live*
- ✓ *Additional scenarios coming soon*

Full version software trials
'Try online' hosted environments
Tutorials
Online resources

<http://www.ibm.com/developerworks/downloads/emsandbox/>

Rational EM tools on the Web

- **RDz with Java or RDz with EGL**
<http://www.ibm.com/software/awdtools/rdz/>
- **Rational Business Developer**
<http://www.ibm.com/software/awdtools/developer/business/index.html/>
- **Rational Host Access Transformation Services**
<http://www.ibm.com/software/awdtools/hats/>
- **WebSphere Studio Asset Analyzer**
<http://www.ibm.com/software/awdtools/wsaa/>
- **Rational Asset Analyzer**
<http://www.ibm.com/software/awdtools/raa/>
- **Rational Team Concert**
<http://www.ibm.com/software/awdtools/rtc/index.html>



Want to learn more?

- **Get this complimentary kit for mainframe developers for a practical, how-to guide for making the most of an existing development environment, including the skills and infrastructure already in place at an established enterprise.**
 - Did you say mainframe? e-kit
<http://www.ibm.com/developerworks/integrate/kits/mainframe/>
 - This kit contains the following:
 - **Podcast series:** Did you say mainframe?
 - **Webcasts**
 - **Tutorials**
 - **White and red papers**
 - **Demos**
 - **developerWorks articles and other resources**
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 - <http://www.ibm.com/software/info/developer/solutions/em/systems/z/>
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- [Process and portfolio management](http://www.ibm.com/software/rational/offerings/ppm/)
(<http://www.ibm.com/software/rational/offerings/ppm/>)
- [Change and release management](http://www.ibm.com/software/rational/offerings/crm/)
(<http://www.ibm.com/software/rational/offerings/crm/>)

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Other links for information and learning

Quality management

(<http://www.ibm.com/software/rational/offerings/quality/>)

Architecture management

(<http://www.ibm.com/software/rational/offerings/architecture/>)

Rational trial downloads

(http://www.ibm.com/developerworks/rational/downloads/?S_TACT=105AGX23&S_CMP=RCD)

Leading Innovation Web site

(<http://www.ibm.com/software/rational/leadership/leaders/>)

developerWorks Rational (<http://www.ibm.com/developerworks/rational>)

IBM Rational Business Partners

(<http://www.ibm.com/software/rational/partners/>)

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