



IBM Software Group

Informix @ IBM

An Overview of Product Roadmaps and Convergence Plan

Don Top
VP, Informix Customer Advocacy Executive

August 2003

DB2 Information Management Software

@business on demand software

Topics

- Update on Informix @ IBM
- Informix Product Roadmaps
- Informix 4GL & Rapid Application Development
- Product Convergence Plan

Short break

- The value of IBM Software
- “DB2 Information Management Software” Product Portfolio
- Summary



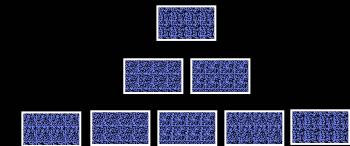
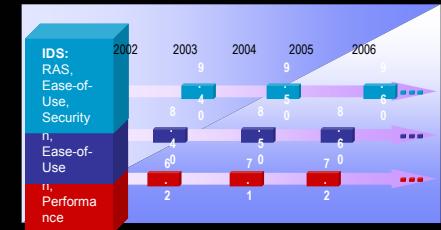
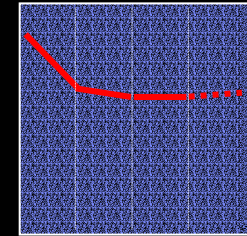
Quick update on Informix @ IBM

- Loyalty to Informix products
 - Continued strong endorsement by customers
 - Continued strong investment by IBM

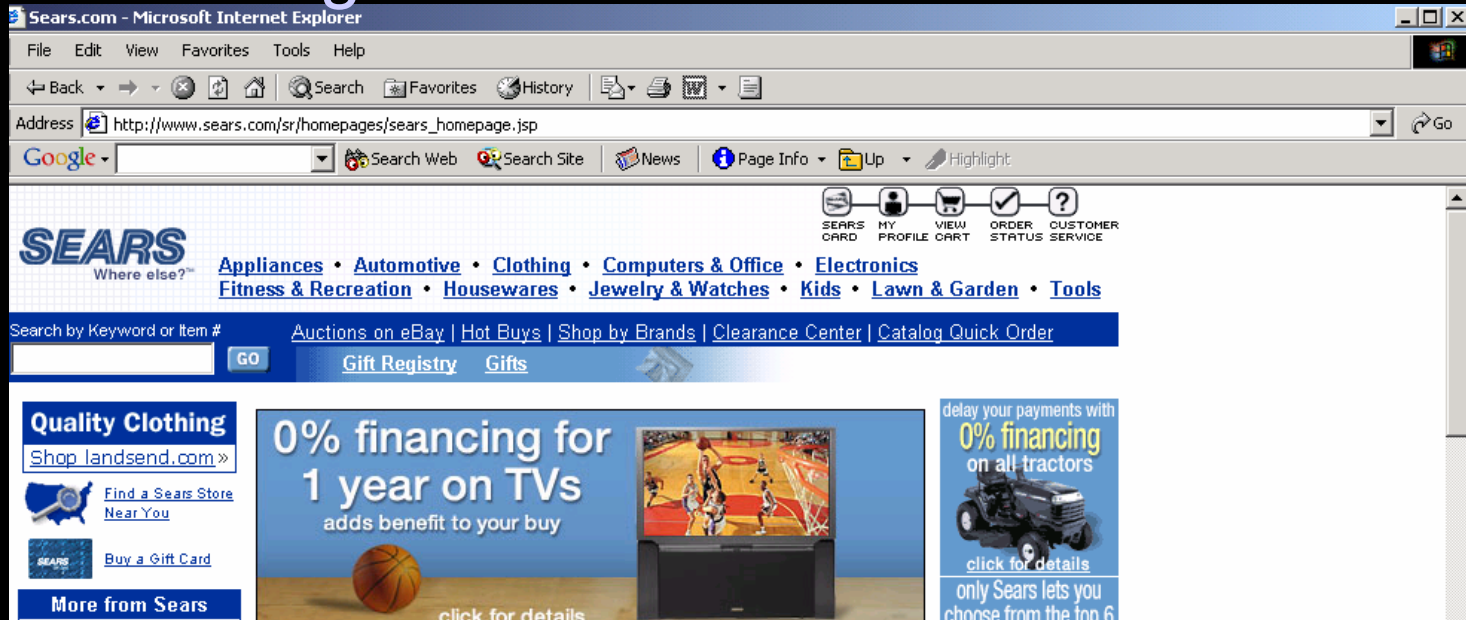
- Product roadmap
 - Shipped at least one enhancement release of all major products since acquisition
 - Future is very clearly defined

- Informix team
 - Integrated into a single Data Management team
 - Retention still very high

- Informix partnerships
 - Key part of the acquisition
 - Strong retention of Informix partners



Who is choosing Informix?



Application

Retail website providing comprehensive online shopping experience for large Sears.com customer base

Business Benefits

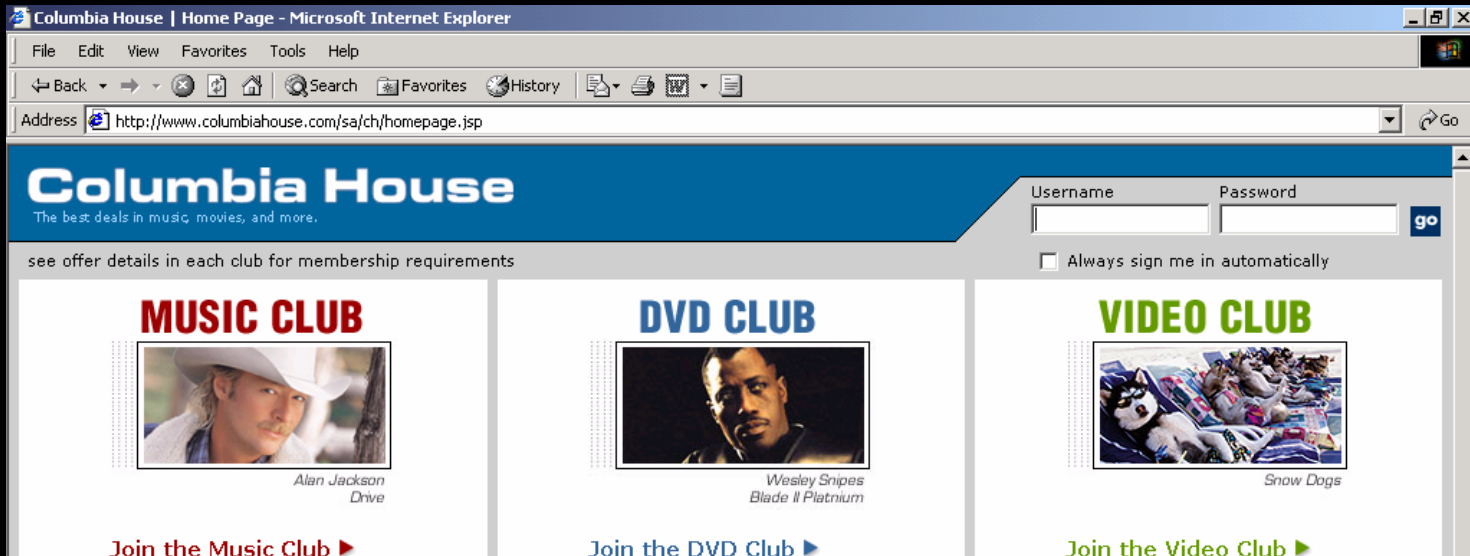
Robust, scalable database engine (IDS) requiring minimal administrative oversight and serving the distributed data needs of a large retail environment.

"The IBM/Informix agreement ... means that the superior technology and support that we have enjoyed from Informix will now have the backing and resources of IBM to continue to grow."

Marlene Gaidzik
Director of Development
Sears Roebuck



Who is choosing Informix?



Application

Music and video retail Web site for buying club members

Business Benefits

Estimated hundreds of thousands of dollars saved annually in database administration costs; enhanced customer satisfaction; 20% growth in online membership as well as expansion of business model without additional investment

"We host several terabytes of data, and our business depends on it 365 days a year. That's why we have chosen IDS from IBM as the data management platform for our Web-based business."

Walter Kerner,
Vice President for Technical Services,
Columbia House



Who is choosing Informix?



Application

Hosts 40,000 financial transactions daily for transportation industry

Business Benefits

Can now offer more secure and highly available processing environment with added encryption and combined ER & HDR functionality. Large chunks saves DBA cycles.

"We chose Informix over Oracle for its superior performance and stability, as well as its extremely competitive price. That decision has consistently reaffirmed itself in our ongoing evaluations of the data management marketplace."

We have no doubt that IBM Informix 9.4 is as robust and reliable as any database available today, and the absolute leader in cost-performance."

Stephen Cobb
Senior Database Administrator



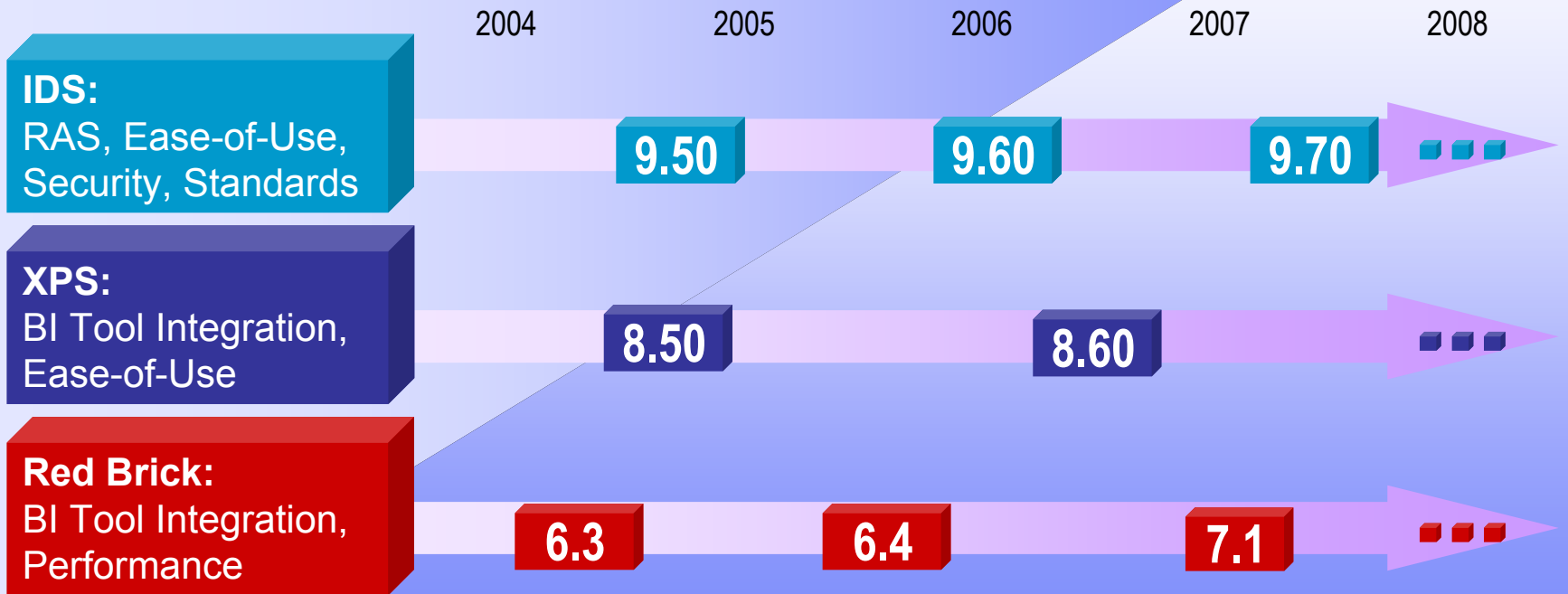
Topics

- Update on Informix @ IBM
- Informix Product Roadmaps
- Informix 4GL & Rapid Application Development
- Product Convergence Plan
- The value of IBM Software
- “DB2 Information Management Software” Product Portfolio
- Summary



Long term support and enhancements

Core Informix servers will receive feature and quality updates every 18 months for as long as customers require



Informix database servers continue to receive significant development investment at IBM



IBM Informix Dynamic Server – *past & present*

IDS 7.31

Hardened ...

- Continuing maintenance and platform support
- **Significant Quality improvements with last sets of interims**
- Interims (fixpacks) delivered every 3-6 months as needed at least through delivery of IDS 9.40
- New functionality comes in IDS 9

IDS 9.40

Features for the IDS 7 user ...

Administrative helps

- **Dynamic locks**
- **Dynamic Logs**
- **Large Chunks**
- **HDR with ER**

- More In-Place Alters
- Attach Detach Fragmen
- AGS ServerStudio JE

Developer helps

- **Long IDs**
- On Select Triggers
- Retain Update Locks
- Additional SQL functions
- Non-Logging Tables

Performance

- **Fuzzy checkpoints**
- Memory Resident Tables
- Reduced codepath

Plus ...

DataBlade Development Features

- SAPI Enhancements

Spatial DataBlade 8.11

- Nearest Neighbor
- Enterprise Replication

2* improvement for Java UDR Enterprise replication support

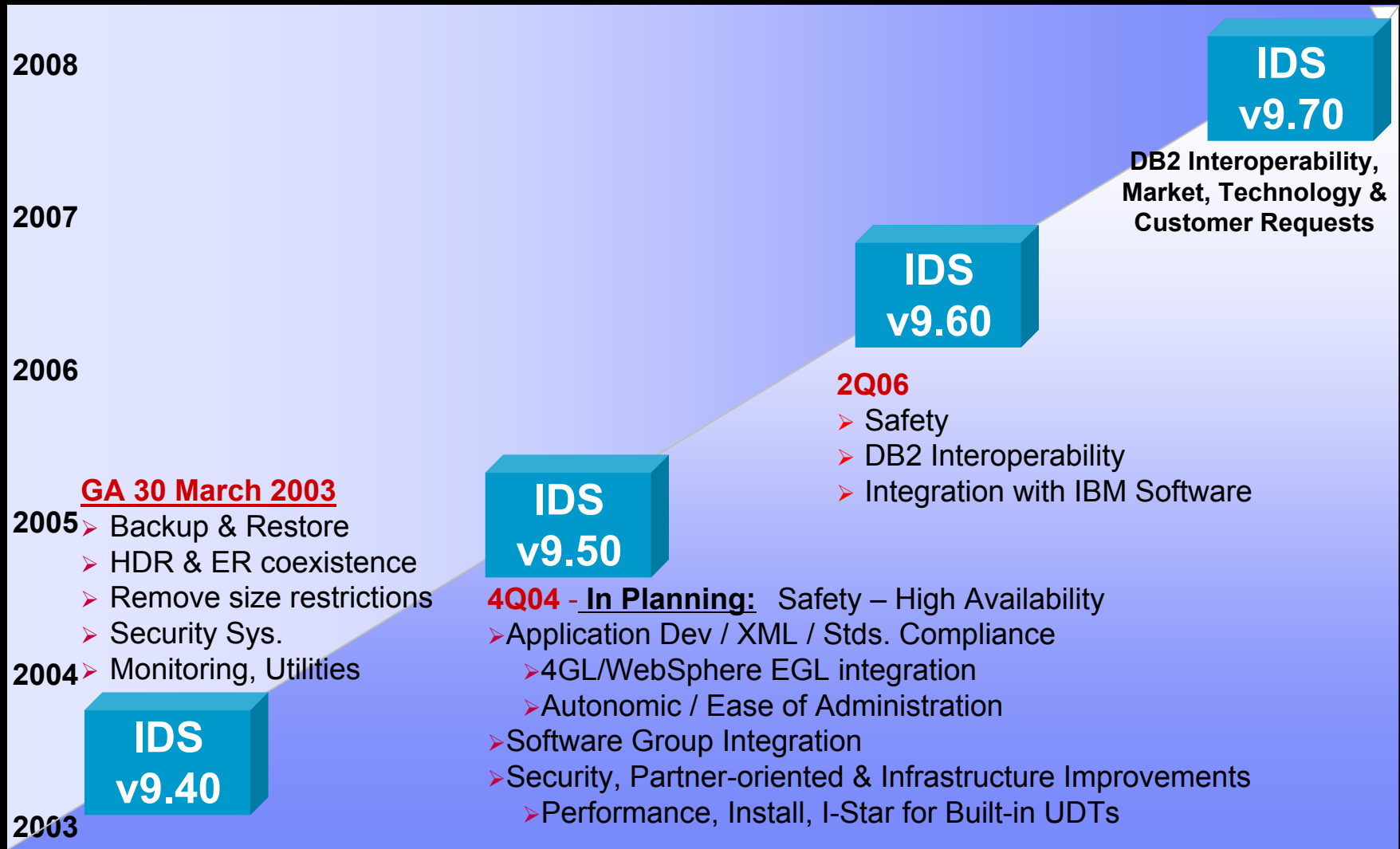
- Smart Blobs, UDTs and Spatial
- **Parallel ER target processing (3x better!)**

... but best of all ...

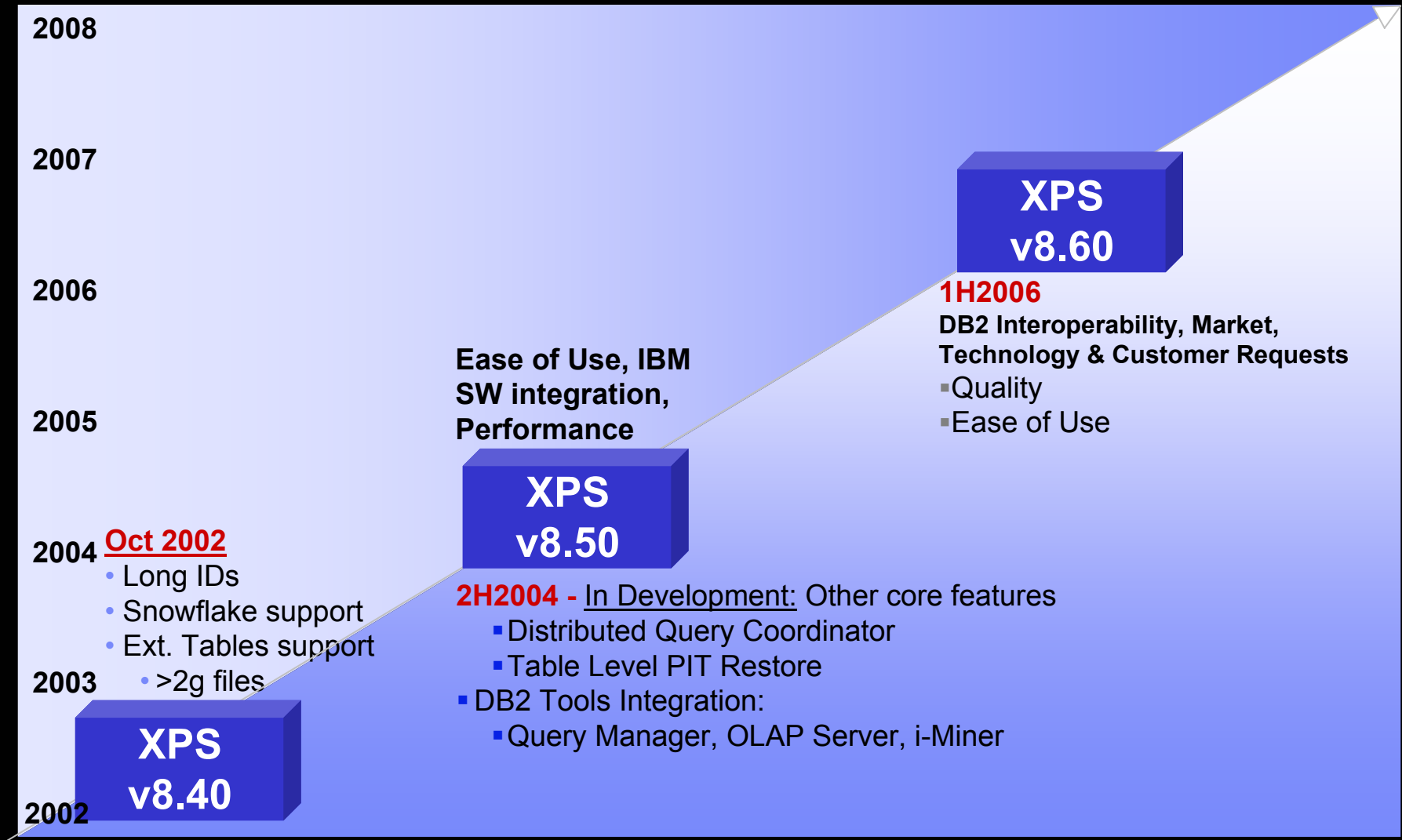
- Minutes to upgrade from 7.3



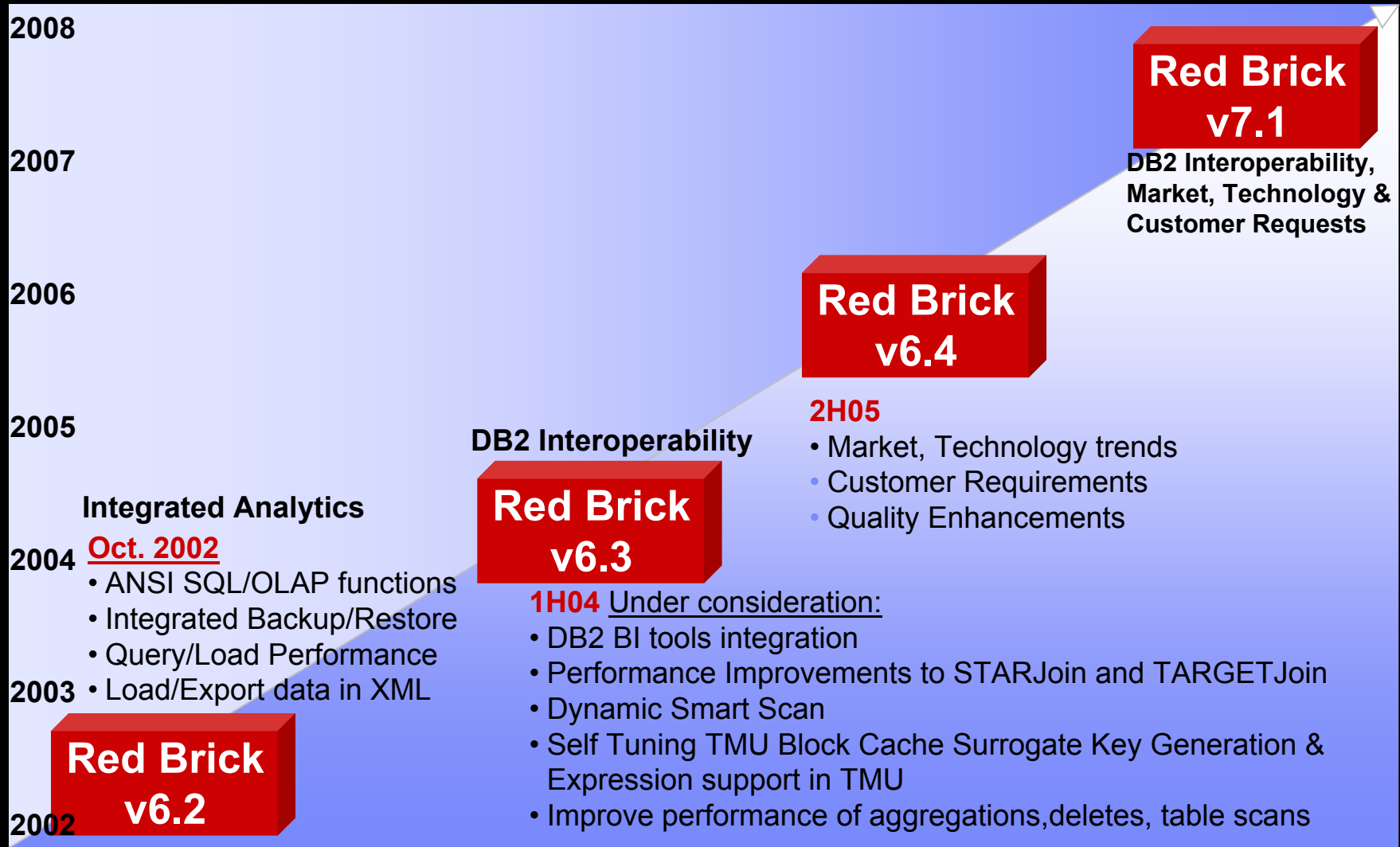
IBM Informix Dynamic Server Roadmap



IBM Informix XPS Roadmap



IBM Red Brick Warehouse Roadmap



IBM Cloudscape

- Cloudscape Corp. was acquired by Informix Software in 2000
- Embeddable, Small footprint, 100% Java Object-Relational DBMS
 - Standards Driven (J2EE compatible)
 - Zero administration
 - Silent Install
 - 2 MB total footprint
 - Data encryption on disk
 - Highly scalable
 - Distributed transaction support
 - Full SQL support
- Intended for:
 - ISV/OEMs - embed/bundle in their Java apps. for resale
 - Existing customers upgrade to v5
 - New Java customers seeking full SQL support – gen. purpose apps.
- More information at: www.ibm.com/software/data/cloudscape



IBM Cloudscape Server Road Map

2006 Cloudscape is part of **40+ IBM products**, and continues support & enhancement for ISV/OEM solutions, existing customers, and **special apps**.

2005

**Cloudscape
v5.2**

2004

December 2003:

- Performance Work
- XML support
- DB2 Compatibility
- Temporary tables
- In-Memory Tables

2003

June 2002

- IBM Re-branding

**Cloudscape
v5.1**

2002

**Cloudscape
v5.0**

December 2002

- JDBC 3.0 Support
- Holdable Cursors
- Referential Actions
- Read Uncommitted Isolation Level
- Performance Work
- Cloudscape Network Server



“Classic” Servers Roadmap

Classic Servers receive continued platform support as needed

2002

2003

2004

2005

OnLine 5:
>2g chunk offset
Updated 4GL support

5.11

5.20

OnLine Extended Edition

- >2Gb chunk offsets
- Built in I-Star
- Compatible with 4GL 7.x

SE:
Quality
Platform updates

7.25

C-ISAM:
Quality
Platform updates

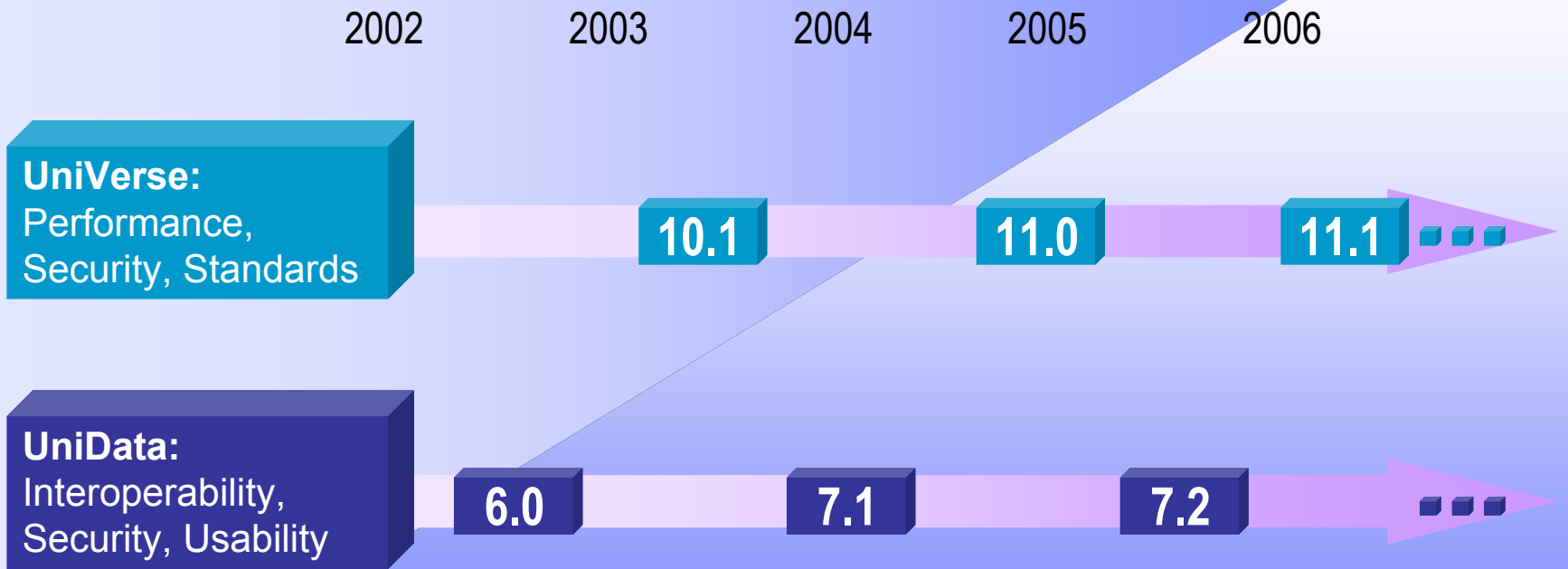
7.26

Note that all products indicate that they continue on indefinitely



IBM U2 Roadmap

IBM U2 databases will receive feature and quality updates every 18 months for as long as customers require

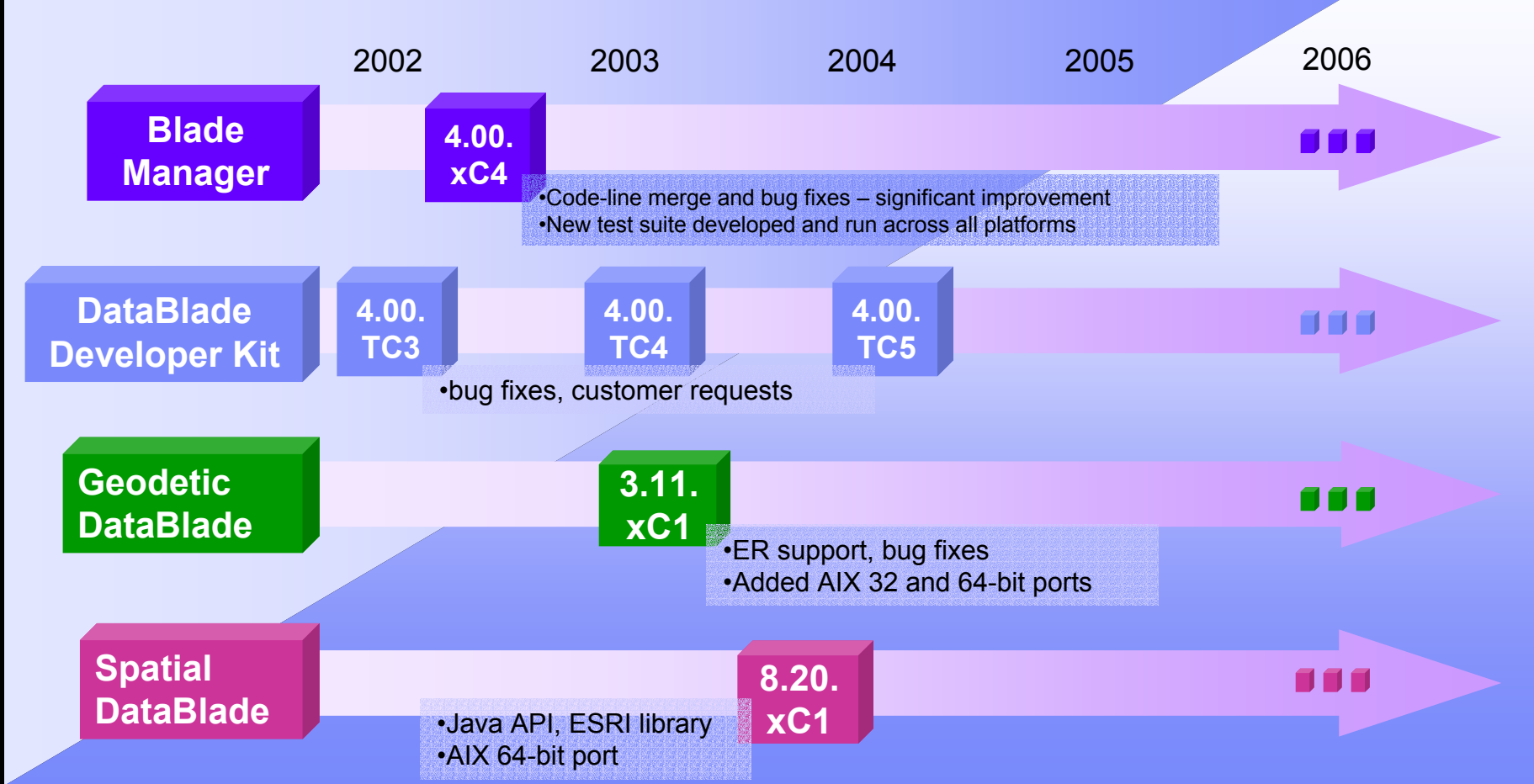


Today, all U2 products continue to receive equal or greater level of development investment as prior to acquisition



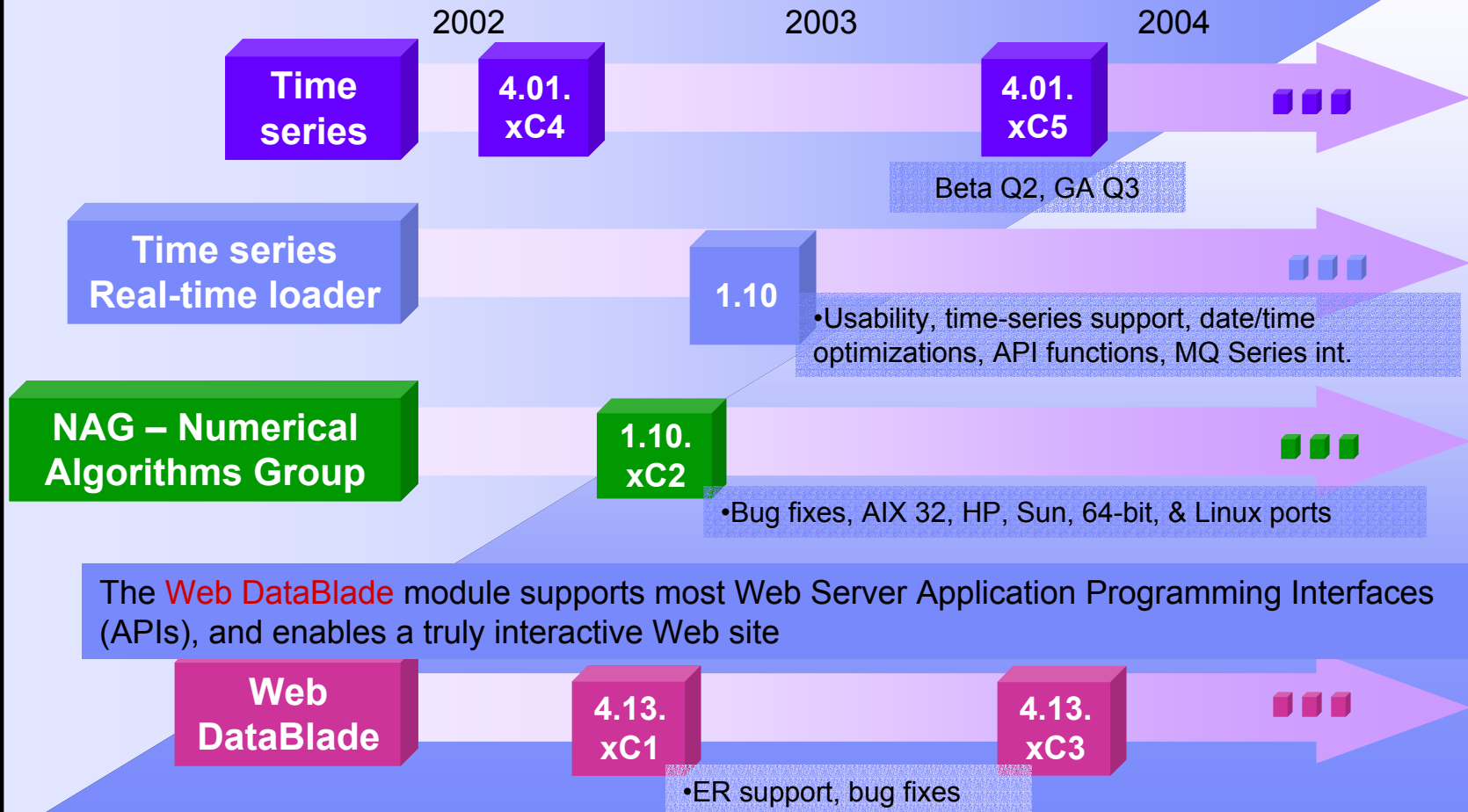
Recent DataBlade Module Releases

DataBlade technology will be enhanced with timely FixPacks, and Port/Certify Modules to new platforms and OS releases **14 Releases across 93 platforms**



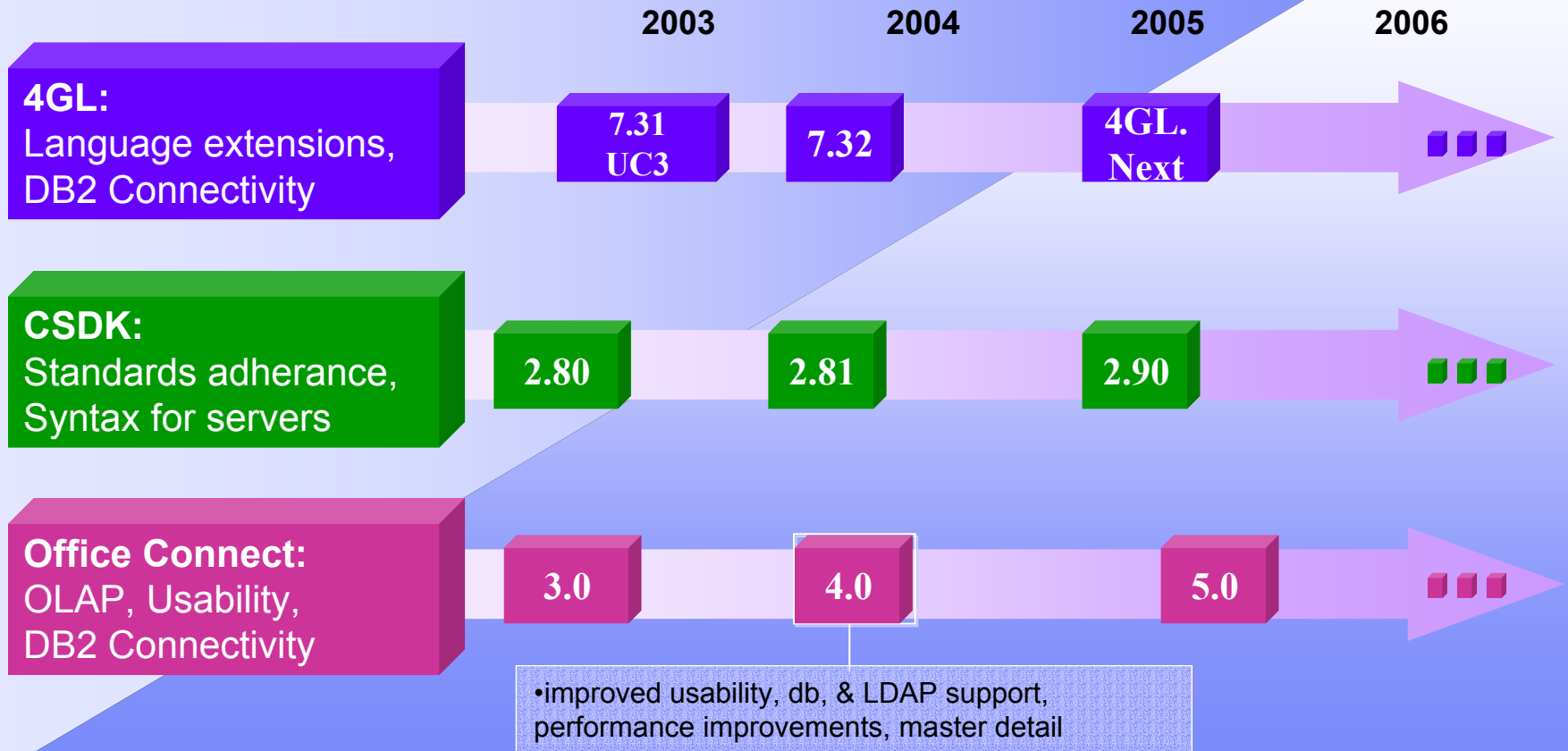
Recent DataBlade Module Releases

Finance Foundation component DataBlade technology will be enhanced and is being aggressively marketing in the **capital markets** Industry



Tools and Connectivity

Informix tools and connectivity are being **functionally enhanced** and many **will connect natively with DB2**



4GL and ISQL 7.32

- Perfectly suited for IDS 7 to 9 Upgrades
 - Superior IDS 9 server compatibility
 - New SQL data types: INT8, BIGINT, SERIAL8, and NCHAR/NVARCHAR
 - Supports Long Identifiers
- Highly Efficient Memory Utilization
 - Dynamic arrays allocation, deallocation, and resizing
 - Dynamic arrays are no longer limited to 32,767 elements
- Ideal for 4GL 4 to 7 Upgrades
 - Direct 4GL 7.32 to OnLine 5.20 connection
 - No need for I-NET or I-STAR
 - Latest internationalization
- Availability on Latest Platforms
 - Available on all major Unix (32-bit & 64-bit) as well as Linux Intel platforms
 - Fully compatible with CSDK 2.81

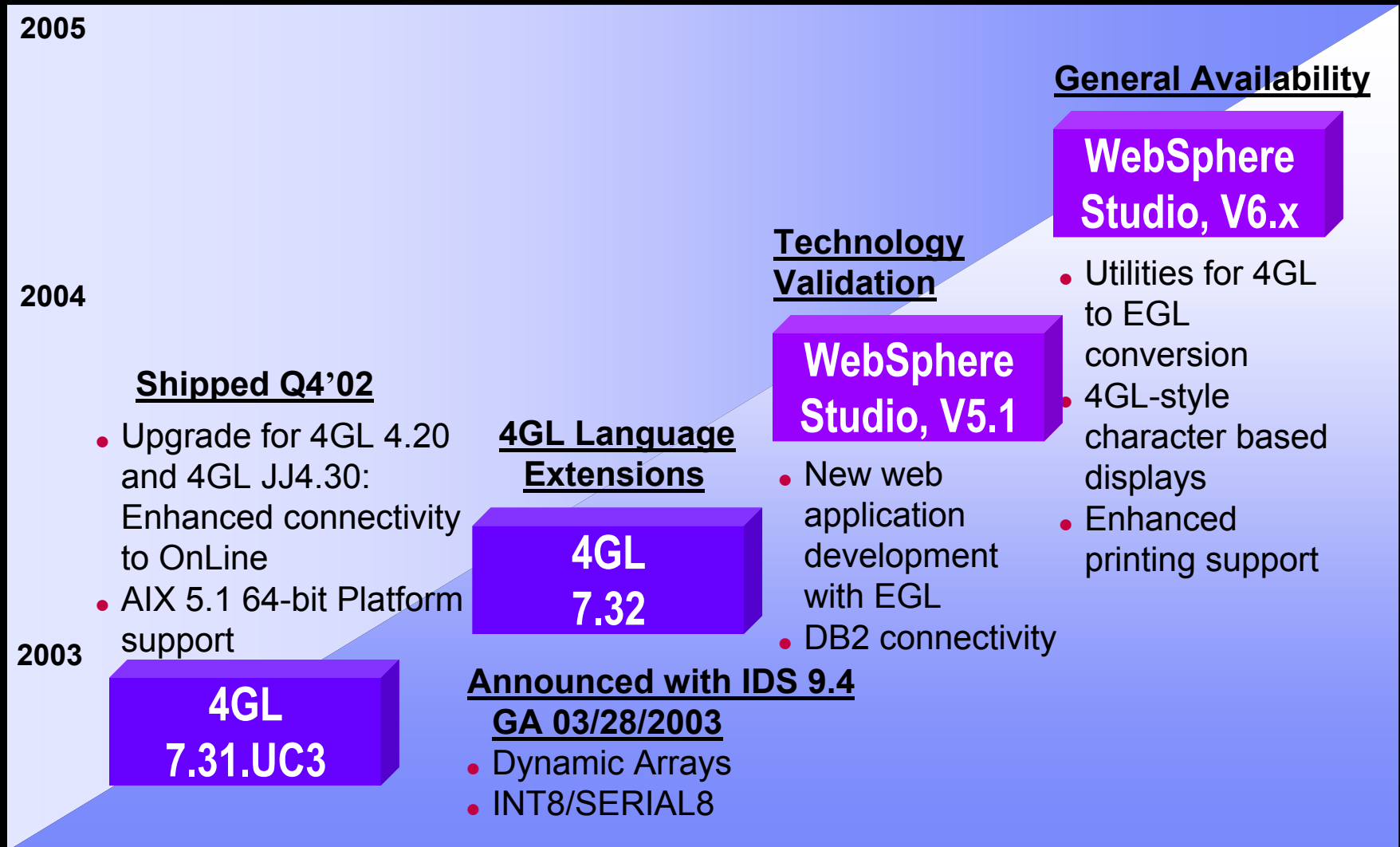


Topics

- Update on Informix @ IBM
- Informix Product Roadmaps
- Informix 4GL & Rapid Application Development
- Product Convergence Plan
- The value of IBM Software
- “DB2 Information Management Software” Product Portfolio
- Summary



IBM Informix 4GL Roadmap



Four J's Business Development Suite (BDS)

- formerly Informix Dynamic 4GL
- Fastest way to take 4GL applications to the web
 - Automatically generates an intuitive graphical user interface (Windows, HTML, Java) for existing character-based applications
- Rejuvenates existing, text-based applications into a modern "thin" client, three-tier architecture
- Leverages your existing code and the people who create, support, and use it
- Supported on UNIX, Linux, and NT
- IBM is a reseller of Four J's
 - BDS Developer and Runtime licenses

IBM intends to stay current with the latest releases of FourJ's products, and is expecting newer release of the FourJ's product --Genero--to be available in Q3 2003.



Business Problem

- Need more developers participating in creating web applications
 - Not enough Java and J2EE experts around for all the work that needs done...
- Current IBM WebSphere Tools are much more integrated than any time in the past, but are very focused on the J2EE developer
- IBM's Informix 4GL customers need access to DB2, Web User Interfaces (UIs), and J2EE runtimes
- Customers have millions of lines of 4GL business logic that they would like to also use in web applications

Today:

Web Application Development Tools cater to J2EE Developers



J2EE Developers

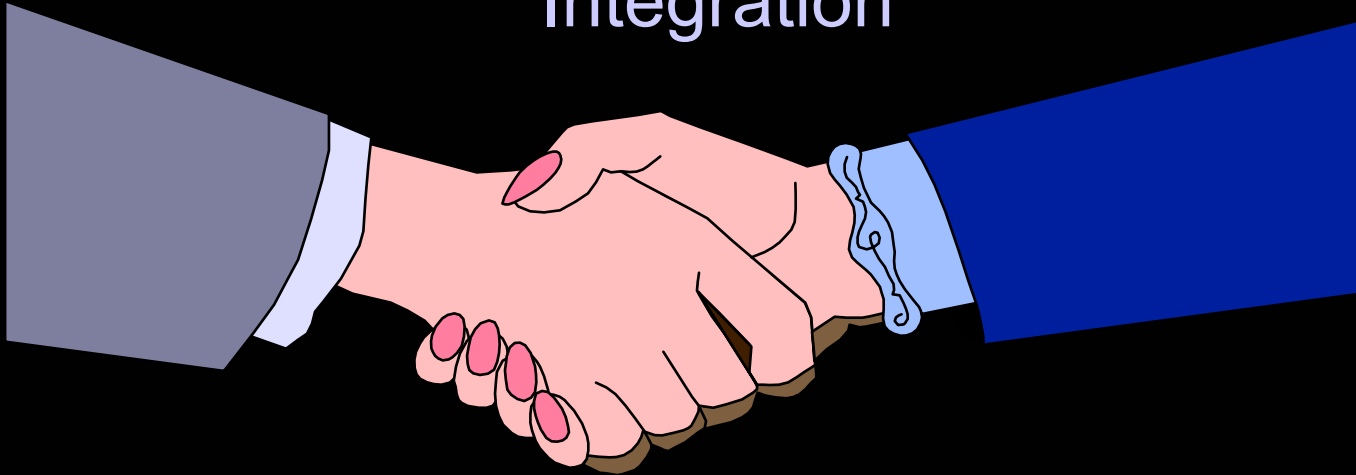
Tomorrow:

Web Application Development Tools must include larger community.



“Business Oriented” Developers

Introducing Informix 4GL - WebSphere Studio EGL Integration



Internet-based Rapid Application Development
(IRAD)
for Data-driven Systems



Our Mission

Leverage Existing 4GL Language Skills

Continued Green-screen Support Along With Web Interface

Protect

High Performance Access to IBM Databases

Ongoing Forms support

Seamless Application Migration

Variety of Deployment Options

Enrich

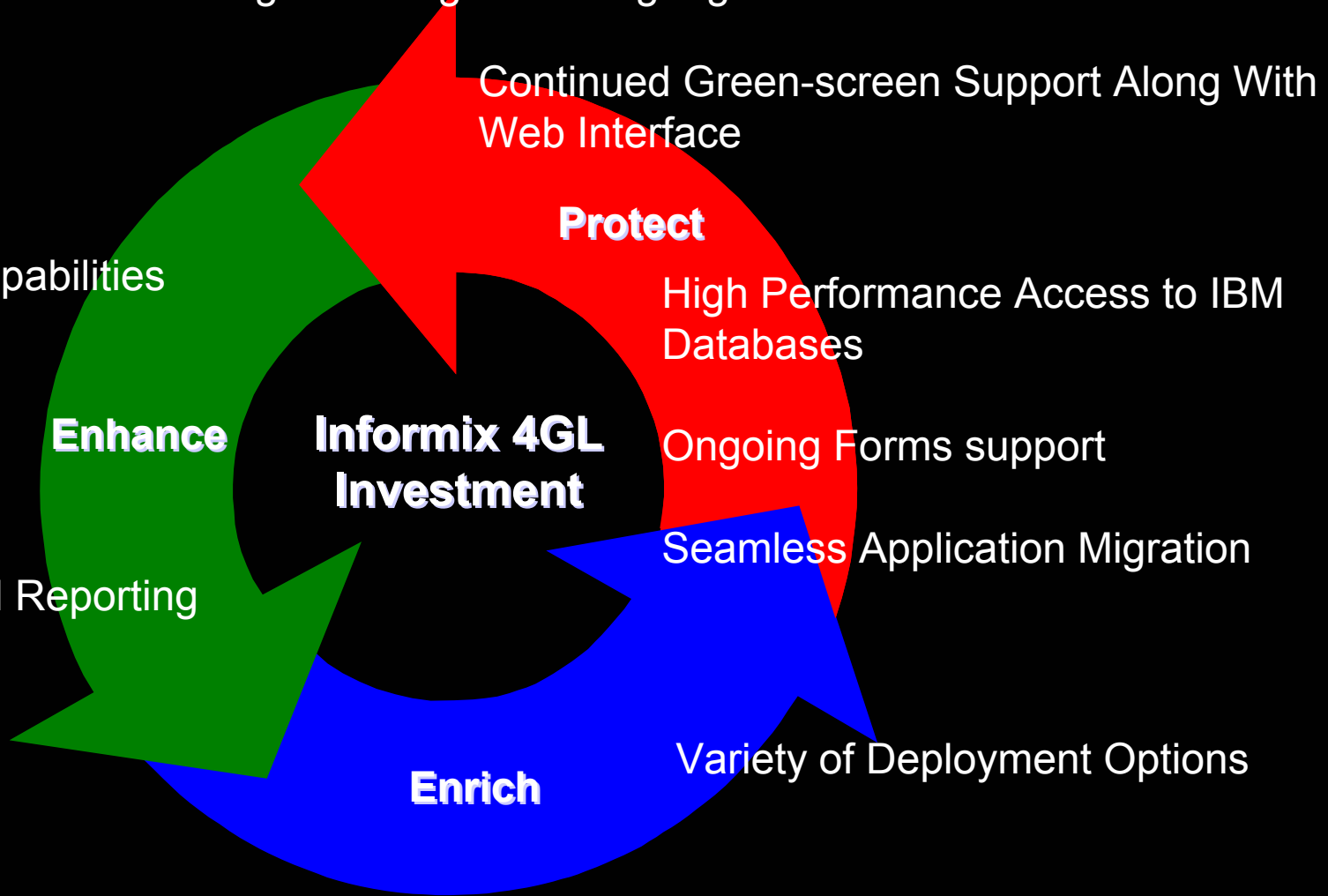
Sophisticated Web Application Development

Enhance

Informix 4GL Investment

Superior RAD Capabilities

Best-of-the-breed Reporting Facilities



Protecting Informix 4GL Investment

- Leverage existing 4GL language skills
 - Simple, yet robust High Level Enterprise Generation Language (EGL) includes majority of Informix 4GL constructs
- Continued green-screen support along with web interface
 - Text-based UI's (TUI's) for many platforms (3270, 5250, Unix, Windows) in addition to Web UIs (JSP's)
- High performance access to IBM databases
 - At the same time providing connectivity to Informix, DB2 databases and others
- Ongoing forms support
 - Similarity in function between the popular 4GL forms and EGL forms
- Seamless application migration
 - Complete migration (goal - 95%) tools for Informix 4GL customers



Enriching Informix 4GL Investment

- **Sophisticated Web Application Development**
 - Integration with industry-leading WebSphere Studio Integrated Development Environment (IDE)
 - Integrated Configuration Management system, Context Sensitive Editor, and many other plug-ins available
 - Leverage WebSphere Studio architecture built using the Open Source Eclipse framework
 - First class debugging capabilities

- **Variety of Deployment Options**
 - JavaScript for JSP client-side logic
 - Java to Windows, Unix, i-series
 - COBOL to i-series and z-series
 - Multiple WebSphere Application Server (WAS) or J2EE runtimes



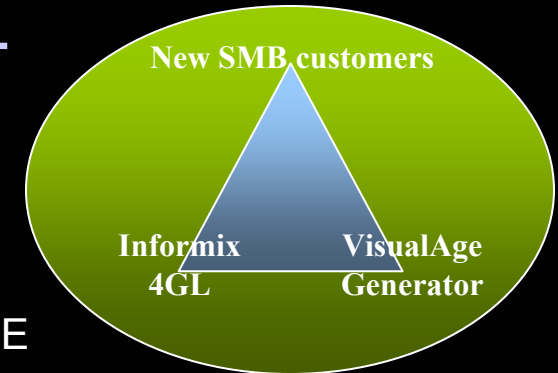
Enhancing Informix 4GL Investment

- Superior RAD Capabilities
 - Application templates provide a jump start to building portions of web applications
 - Data abstractions allow access to Relational tables, host data sources and MQ Series data queues using same protocol
 - Code all aspects of application in one language, thereby reducing learning curves and complexity
 - Common programming model for both TUI and web UI...
 - Simpler web application development model
 - Eases migration path from TUI to web
- Best-of-the-breed Reporting Facilities
 - Support for printing reports on host and workstation printers using popular third-party tools like Crystal Reports



Informix 4GL – WebSphere Studio EGL

- Internet-based Rapid Application Development (IRAD)
- Target Customers
 - New customers without deep J2EE skills that need to deploy “database-centric” web applications to J2EE runtimes
 - Non-J2EE, “Business-oriented” developers
 - Companies seeking a Rapid, **yet robust and flexible** Web/Database application development solution
 - Companies that would have used the following tools in the past: **PowerBuilder, Oracle Forms, Informix 4GL, VisualAge Generator, CoolGen, RPG, COBOL, Visual Basic, ...**
 - Companies that may need to deploy applications to multiple platforms using the same toolset: (AIX, Linux, Solaris, HP-UX, Windows, i-series, z-series)
 - Migration path for Informix 4GL developers
 - Migration path for VisualAge Generator developers



Informix - SWG Products 2002 Interoperability

- IBM Informix Dynamic Server (IDS) was certified with key SWG products in 2002

WebSphere. software	
IDS 9.3	WebSphere Application Server, v4.0. V5.0
IDS 9.3	WebSphere Portal Server, V5.0
IDS 9.3, 9.4	WebSphere Studio Application Developer, V4.0 Web Services Object Runtime Framework (WORF) V3.5
IDS 9.3, 9.4	WebSphere Studio Enterprise Developer, v.5.0

Tivoli. software	
IDS 7.31, 9.21, 9.3	Tivoli Monitoring for Databases, V5.1.0
IDS 7.31, 9.21, 9.3	Tivoli Data Protection for Informix

Lotus software	
IDS	Lotus Enterprise Integration (LEI) 6 / Domino 6



Topics

- Update on Informix @ IBM
- Informix Product Roadmaps
- Informix 4GL & Rapid Application Development
- Product Convergence Plan
 - Arrowhead Vision
 - Informix Compatibility into DB2
 - Transition Tool Kit (TTK)
- The value of IBM Software
- “DB2 Information Management Software” Product Portfolio
- Summary



IBM & Informix Vision

Coming IT Challenges ...

Unpredictable workloads and decreasing problem tolerance

Many partners and evolving language standards

Decision making in real-time

Continuous growth in the size and form of data

Increasing systems complexity



IBM & Informix Vision

Coming IT Challenges ...

Unpredictable workloads and decreasing problem tolerance

Many partners and evolving language standards

More real-time decision making

Continuous growth in the size and form of data

Sky rocketing systems complexity

Arrowhead Strategy

Technologies to overcome ...

Shared-nothing scalability, online everything, High-Av'ty Failover

XML, Java, .Net, Web Services, 4GL

Resource Grant Management, Sophisticated Optimizer, BI Tools

Information Integration, Content Management, Datablades & API

Integrated infrastructure, Autonomic, Advanced Monitoring



IBM Information Management Vision

... e-business leadership

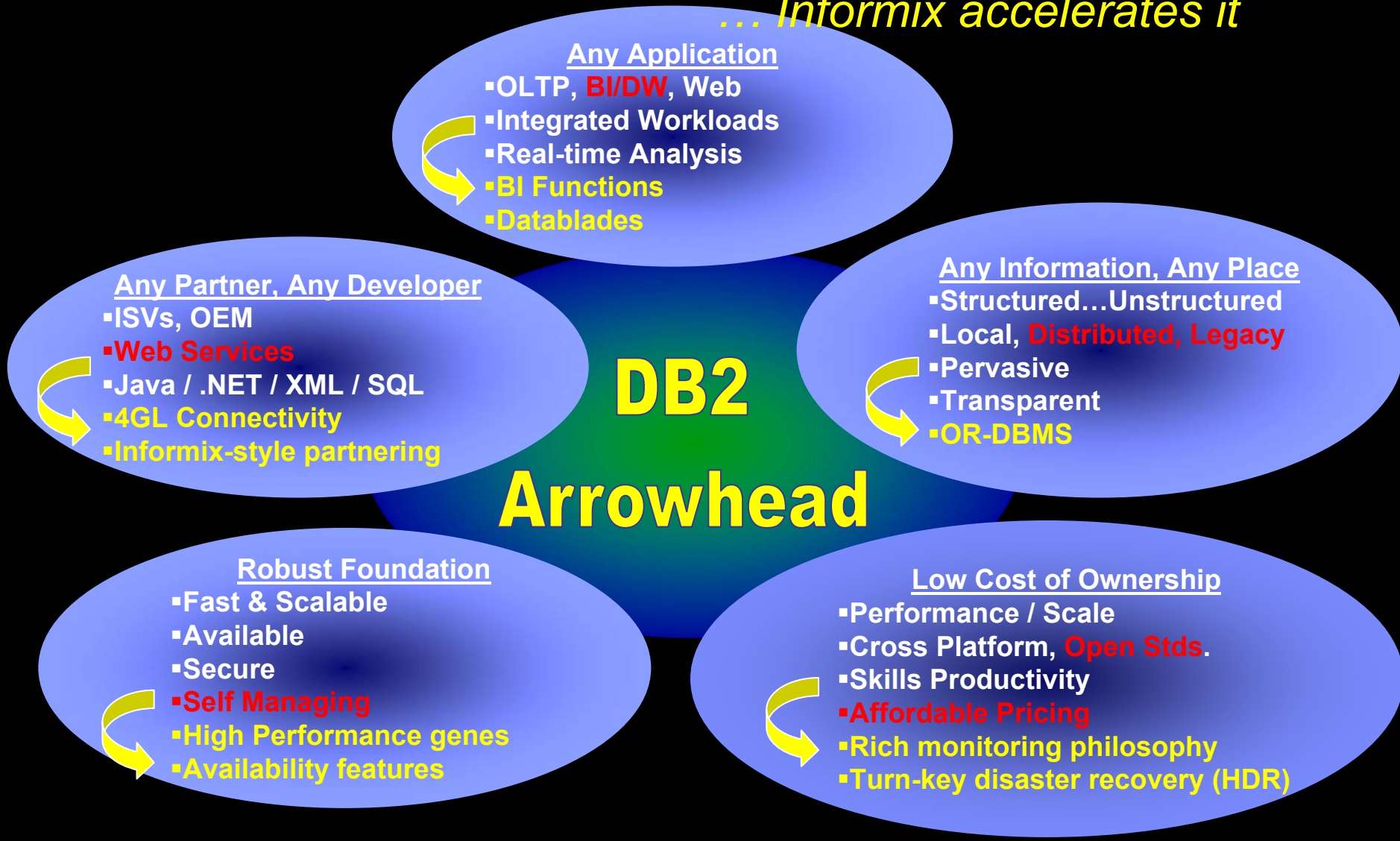


A broader definition of Informix Arrowhead Vision



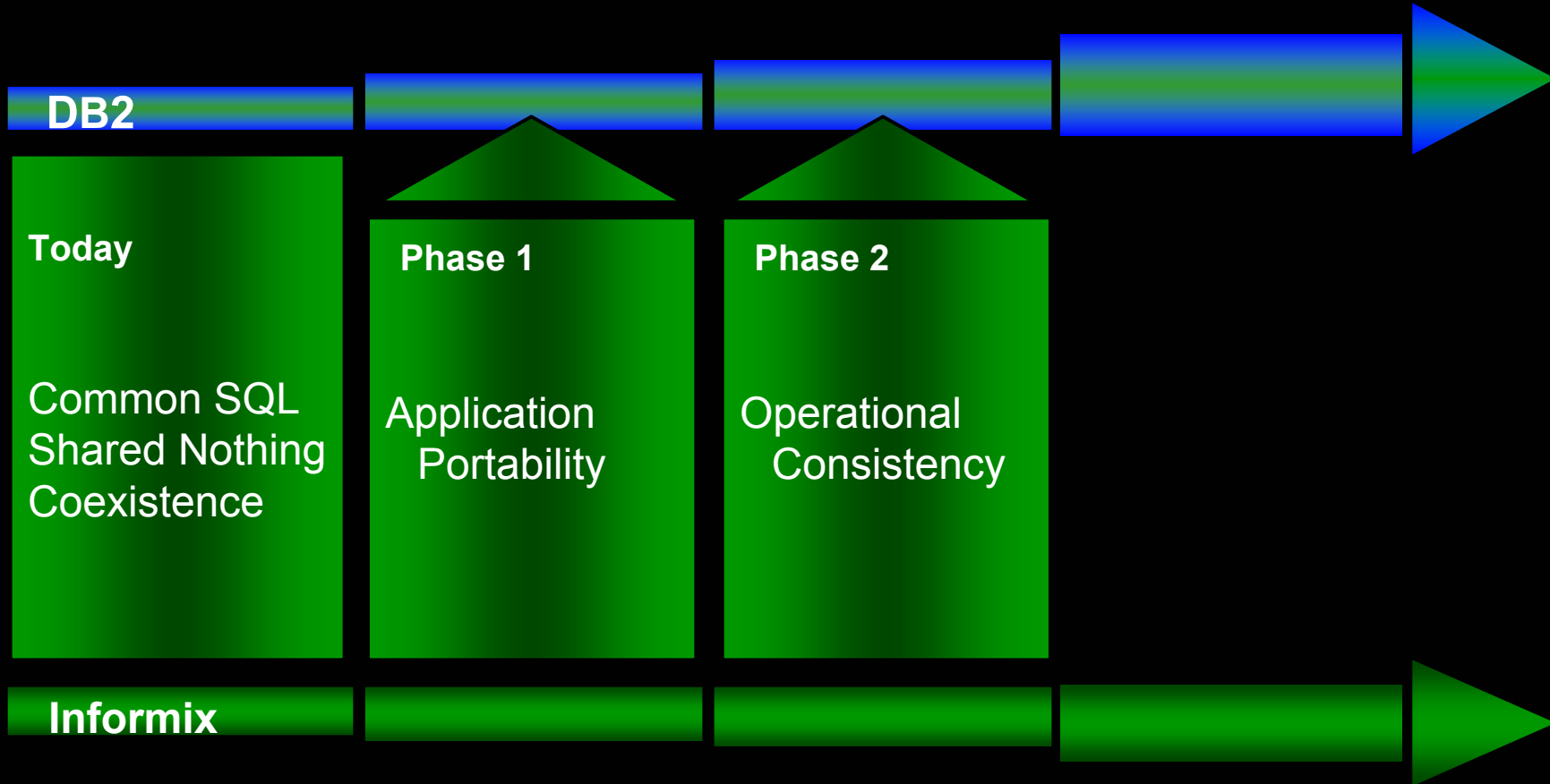
IBM Information Management Vision

... Informix accelerates it

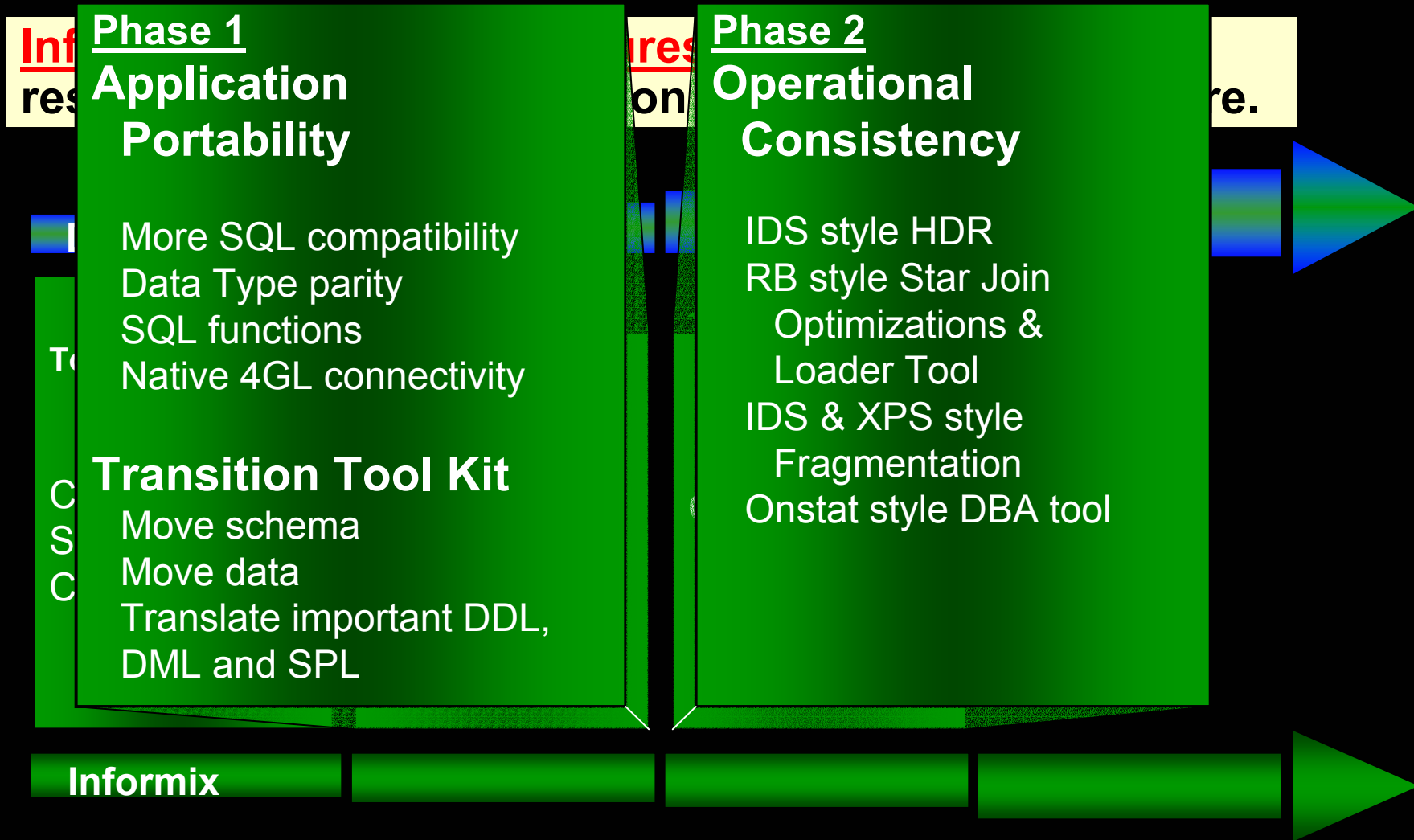


Informix Compatibility into DB2

Informix compatibility features complement DB2
resulting in smooth transition path if customers desire.



Informix Compatibility into DB2



Informix Compatibility into DB2

Informix compatibility features complement DB2
 resulting in smooth transition path if customers desire.

**New IDS features:
will they work in DB2 Arrowhead?**

YES!

- Standards boards within IBM Software Group closely monitoring SQL enhancements
- Updates to the current code base will be available in DB2, optimally edited for efficiency
- Feature enhancements with an eye to the future – so key functionality will work!

Informix



IBM U2 and DB2 Integration

- The unique characteristics of U2 do not lend themselves to incorporation into DB2
- To best leverage IBM U2 and DB2 jointly, IBM U2 is evolving to provide...
 - Tightly bound XML & SQL Interfaces
 - Open Driver Framework
 - DB2 Drivers



Transition Tool Kit Functions

TTK takes transition the rest of the way (if needed)

- Move Metadata and Data from Informix to DB2
- Facilitate Extraction of Metadata
 - Tables, Views, Indexes, Stored Procedures, etc.
- Translate Informix SQL and SPL to DB2
- Refine Informix Metadata (and SPL)
- Deploy on DB2
 - Metadata Scripts
 - Data Movement Scripts



So, what does this all mean to me, now?



Can I stay on Informix or will IBM make me move to DB2?

- Our Philosophy
 - "Moves anywhere are difficult. Move only if the result is a recognizable value advantage for you"
- Our Promise
 - "We'll continue to support the Informix product line for as long as customers require"
- Our Proof
 - "100's of IMS* customers still receive regular updates to a product originally released in 1968"
(IMS is a mainframe, hierarchical database, the backbone of the world's financial systems)



Time for a short break to grab coffee?

5 minutes



Topics

- Update on Informix @ IBM
- Informix Product Roadmaps
- Product Convergence Plan
- IBM Software Portfolio
 - E-business On Demand
 - The value of being an IBM customer
 - On demand, partnering, Open standards
- “DB2 Information Management Software” Product Portfolio
- Summary



Business Drivers

The Promise of I/T

- Deploying new capabilities
- Cost reduction
- Efficiency
- Security and operational resiliency
- Workforce productivity

The Problem with I/T

- Time to value
- Managing complexity and integration
- ROI
- Constrained resources
- Utilization of existing infrastructure



Phases of e-business adoption

Access

Enterprise
Integration

On Demand

**“Get on the
Net”**

**“Buying, not
browsing.
Working, not
surfing”**

**Optimize operations.
Dynamically respond
to the needs of
customers,
employees,
partners.”**

Access Publish Transact

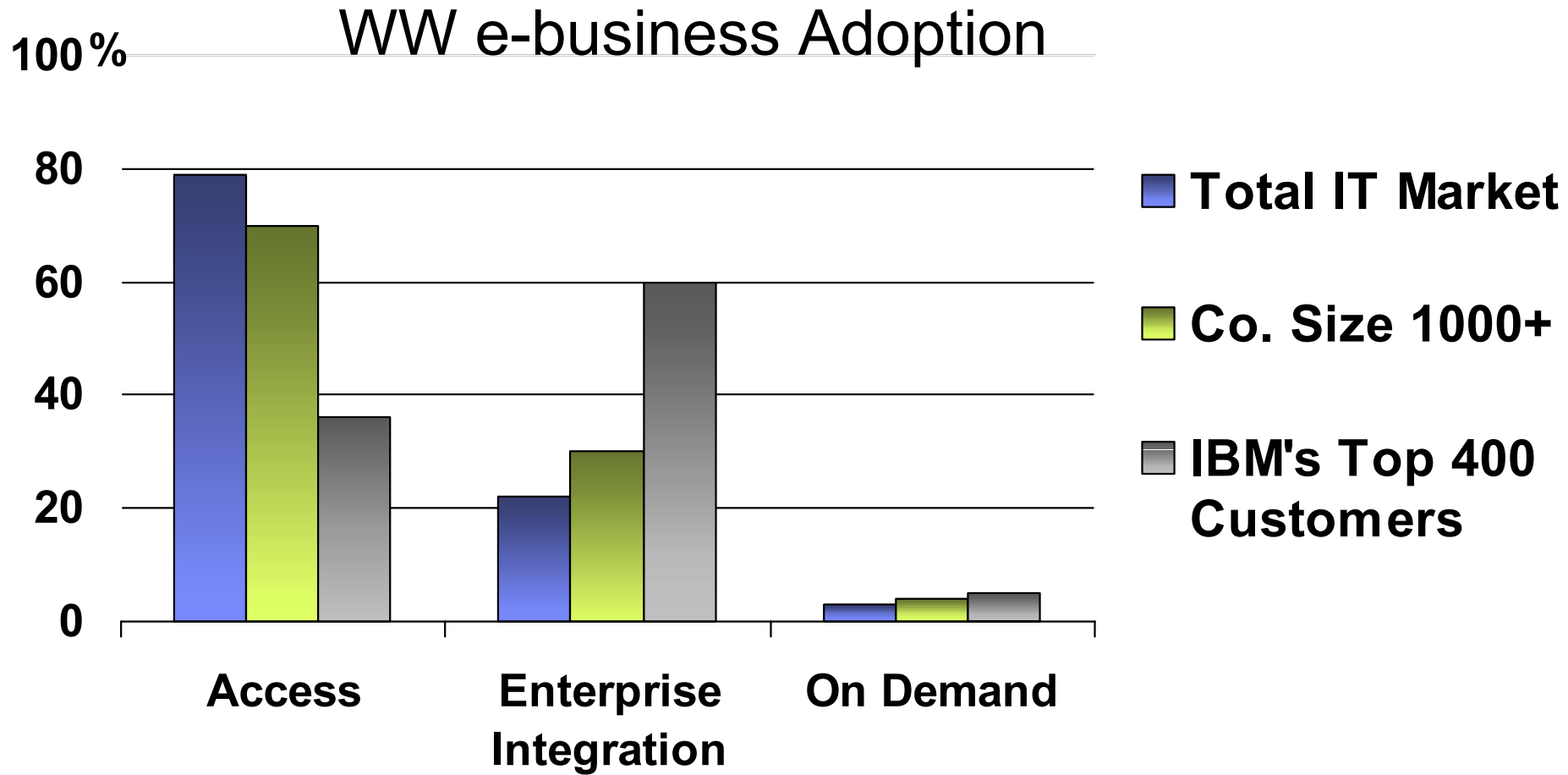
Integrate
Internally

Integrate
Externally

Adapt
Dynamically



Where customers are in their on demand journey



 **business on demand**

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.



The World of “On Demand”

1. On Demand Business
2. On Demand Infrastructure



On Demand Business

- Responsive in real-time
- Low cost structures
- Focused on what's core and differentiating
- Resilient around the world, around the clock



What we contribute to an on-Demand Infrastructure

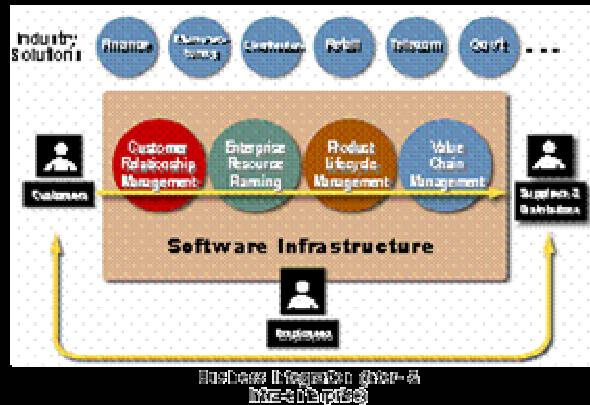
Open Standards



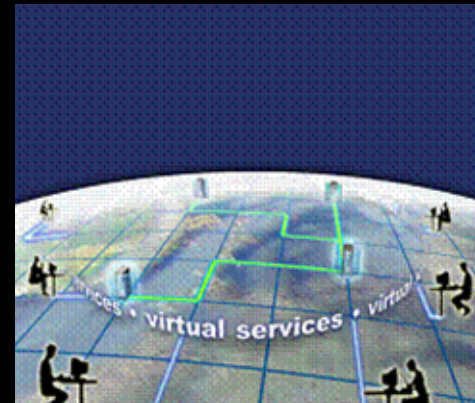
Autonomic



Integrated



Virtualised



IBM Software Group

Tivoli. software

WebSphere. software

Lotus. software

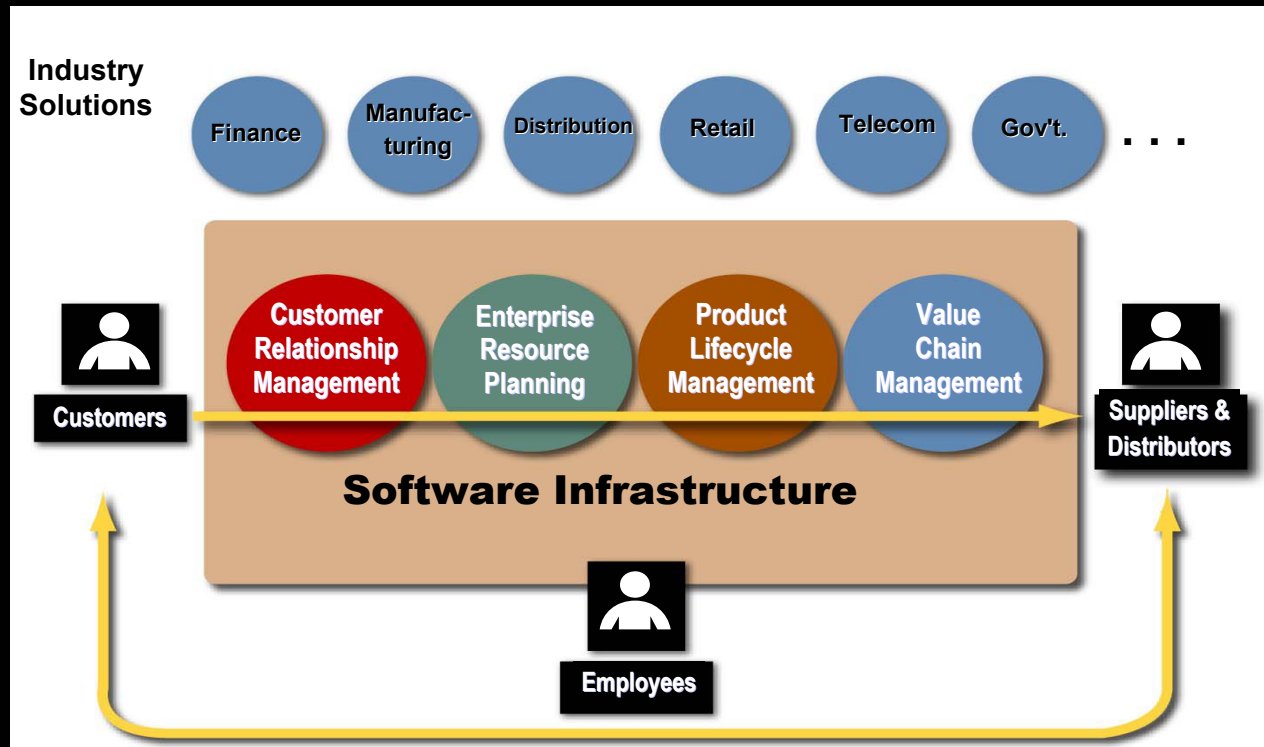
DB2. Information Management Software

Rational. software



Integrated Enterprise

IT Requirements driven by Business Priorities
Integrated from Demand-to-Delivery
Moving towards realtime Business Models



IBM Commitment to Continuous Innovation

*.... while leveraging standards as an enabler
to create on demand businesses*



Linux



Web Services



Grid Computing



Pervasive Computing



Autonomic Computing

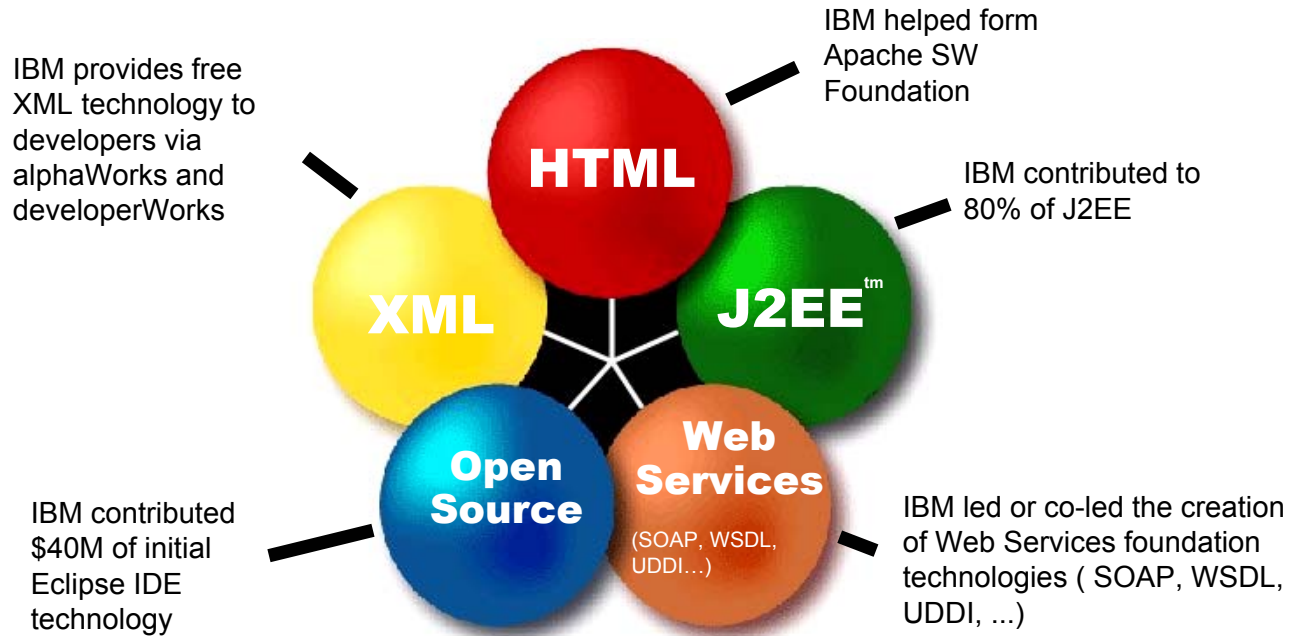


An Open Standards Foundation

★ to support heterogeneous infrastructures

★ to enable faster integration (i.e. improving time to value & increasing responsiveness to customers)

★ to leverage the industry ecosystem

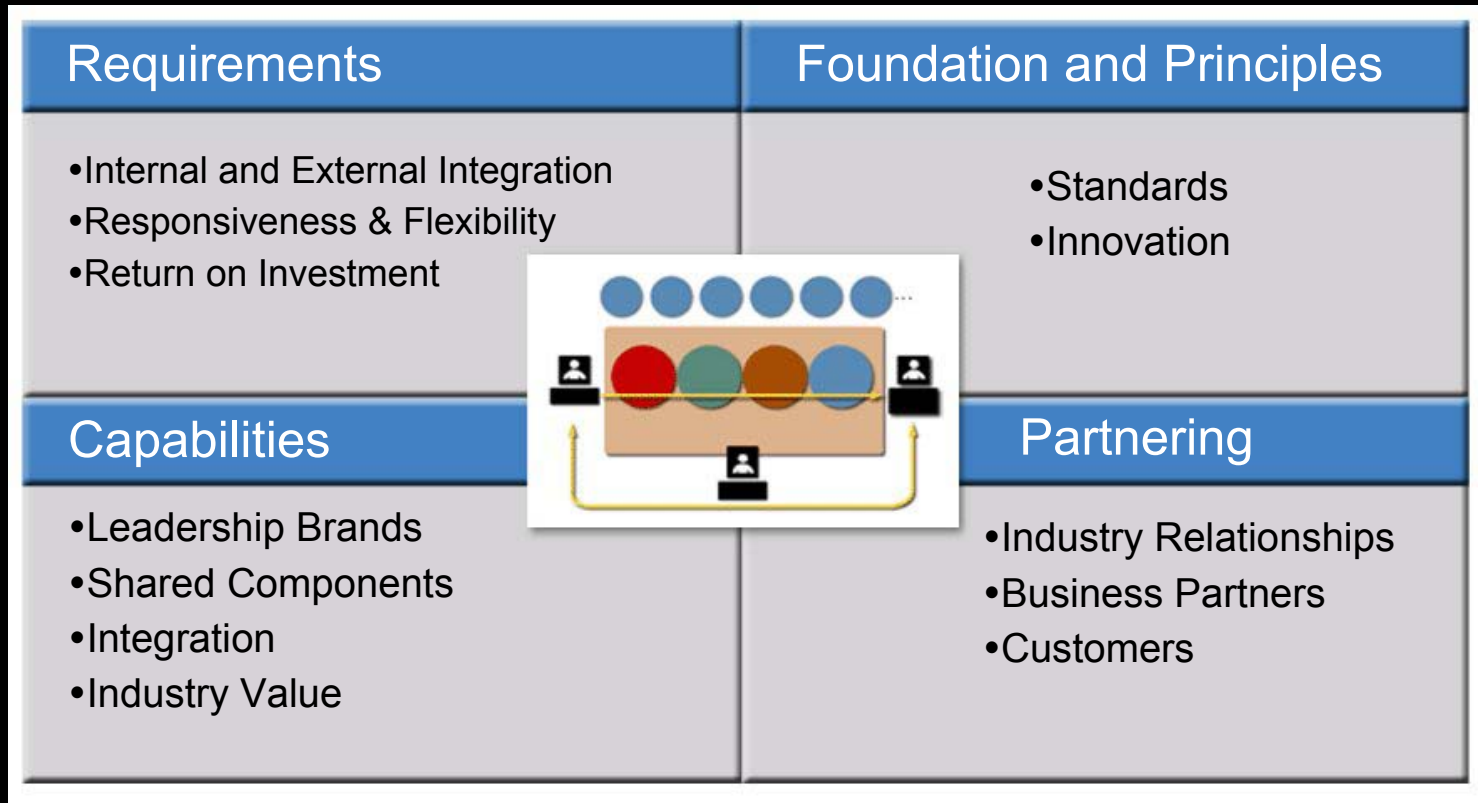


Linux Windows AIX Solaris HP-UX OS/400 OS/390 z/OS

IBM is #1 commercial investor in Linux



IBM Software Strategy



Partnering to Increase Customer Success

IBM Global Services



IBM Redbooks



IBM Patterns for e-business



Business Partners

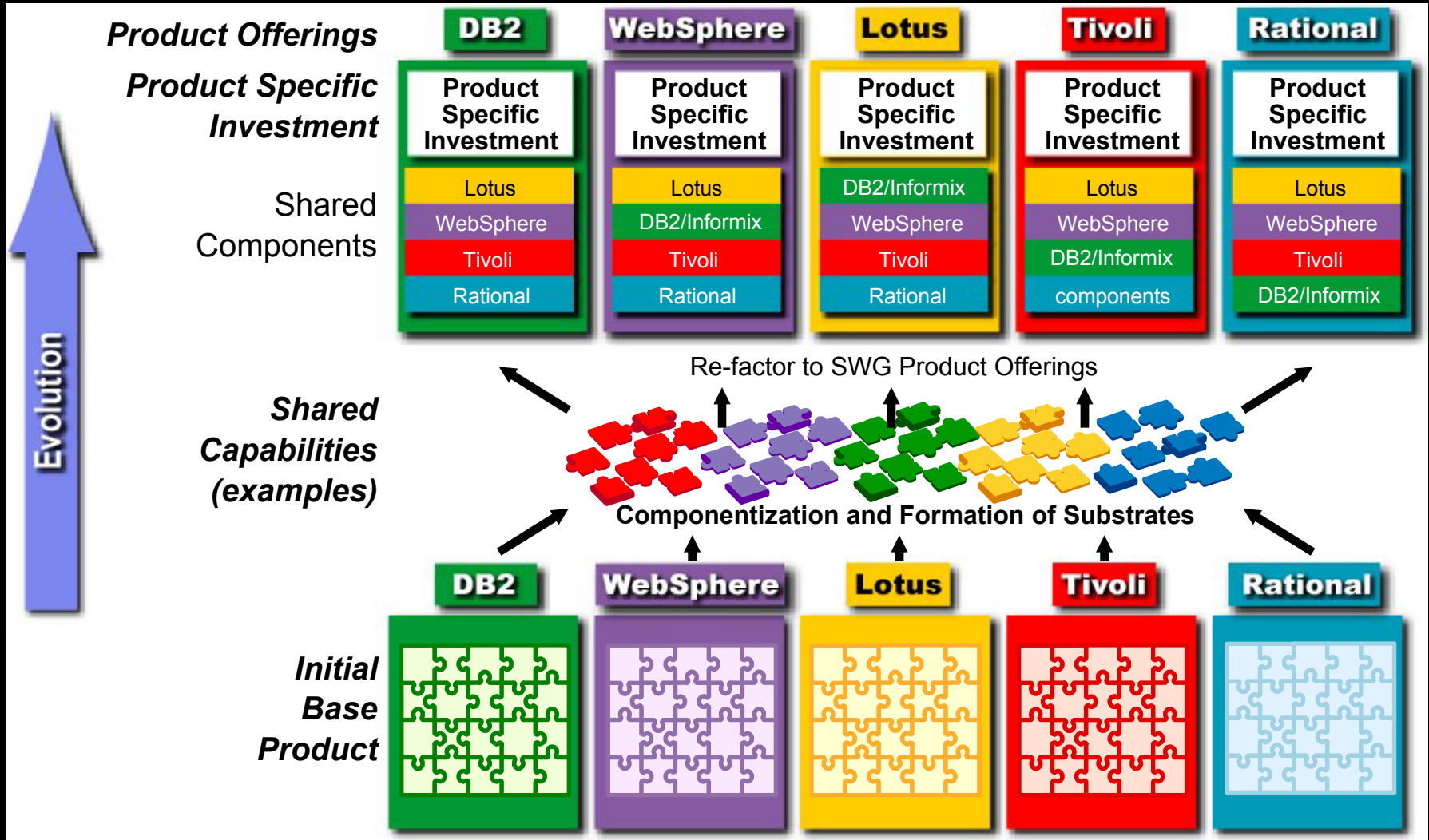


jStart Program

IBM Business Consulting Services



Shared Capabilities of the IBM Software Portfolio



Informix – Technologies being leveraged into IBM

- Cloudscape: zero admin, small footprint, J2EE/JDBC compliant embeddable Java database with full SQL support
 - Being leveraged in **over 40** IBM software products – including releases in WebSphere & DB2
- Informix HDR
 - Being built into DB2 UDB for release 8.2 in 1H04
- IDS, XPS and Red Brick features being delivered into each future DB2 UDB release

Tivoli. software

WebSphere. software

Lotus software

Rational. software

DB2 Information Management Software



The Value of IBM Passport Advantage

Buy more:

DB2 Information Management Software

Lotus software

WebSphere software

Tivoli software

Rational software

Earn discounts on :

Rational software

Tivoli software

DB2 Information Management Software

WebSphere software

Lotus software



IBM Volume licensing program for distributed software

- Volume discount based on overall purchasing power - Your purchases aggregate so that as you purchase more software, you are eligible for lower prices
- One set of terms and conditions
- Minimizes renegotiation
- Eliminates all contract renewal activity
- 24x7 coverage for all Passport Advantage customers (separately priced in Informix)
- No charge to change platforms
- Access to technical support (voice and web)
- Ability to combine IBM and most Informix products into one agreement with single renewal date. All licenses expire at the same time.
- You can purchase through your dealer/reseller of choice (IBM can be that dealer of choice)



Topics

- Update on Informix @ IBM
- Informix Product Roadmaps
- Informix 4GL & Rapid Application Development
- Product Convergence Plan
- The value of IBM Software
- “DB2 Information Management Software” Product Portfolio



What else does IBM “*DB2 Information Management Software*” offer?

- “IBM Data Management” renamed “**DB2 Information Management Software**”
 - Gives IBM one “**brand**” to support the “Information on demand” advertising and strategy
 - Informix customers shouldn’t be ‘put off’ by the DB2 branding
 - IBM’s need to market a single brand to analyst community
 - Informix *is* part of the **DB2 Information Management Family**
 - Informix products *are not* currently being renamed “**DB2...**”
- An Integrated Information Management Infrastructure:
 - Universal Database
 - Information Integration & Business Intelligence Solutions
 - Content Management



Autonomic Computing

Self-Configuring

Monitor and tune resources automatically

Self-Healing

Discovery, diagnose, and react to disruptions

Self-Optimizing

Adapt automatically to the dynamically changing environment

Self-Protecting

Anticipate, detect, identify, and protect against attacks from anywhere

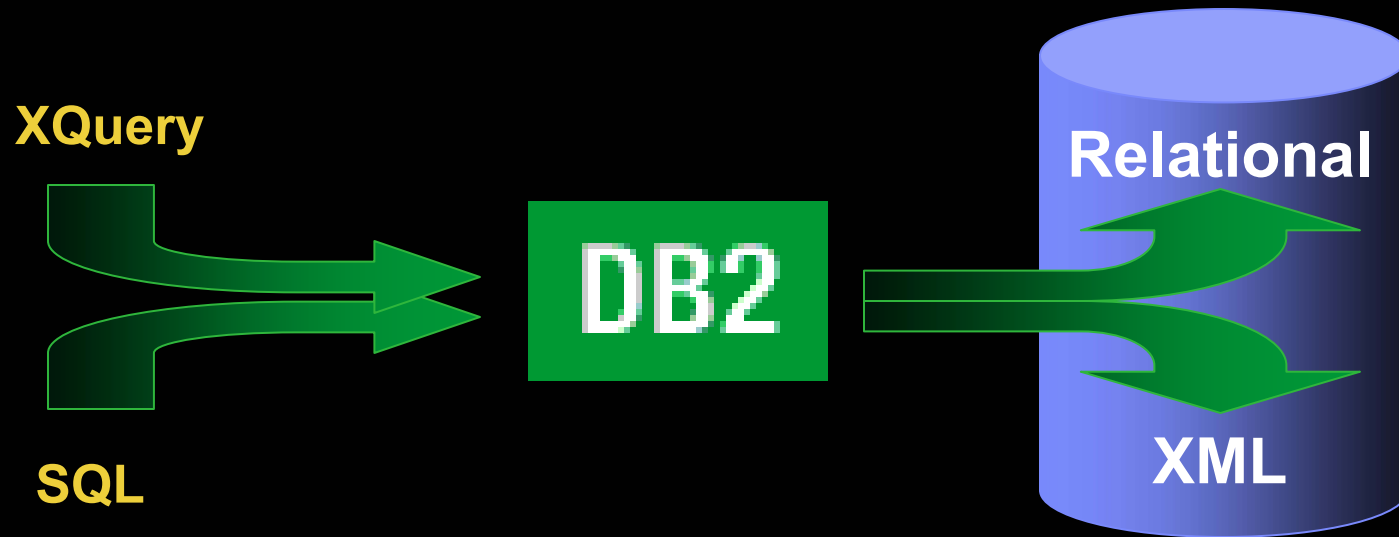


Less Skill, Less Resource, Better System Utilization



XML...Any Way You Want It

Document & Interchange Format



Deep Support in DB2 Today

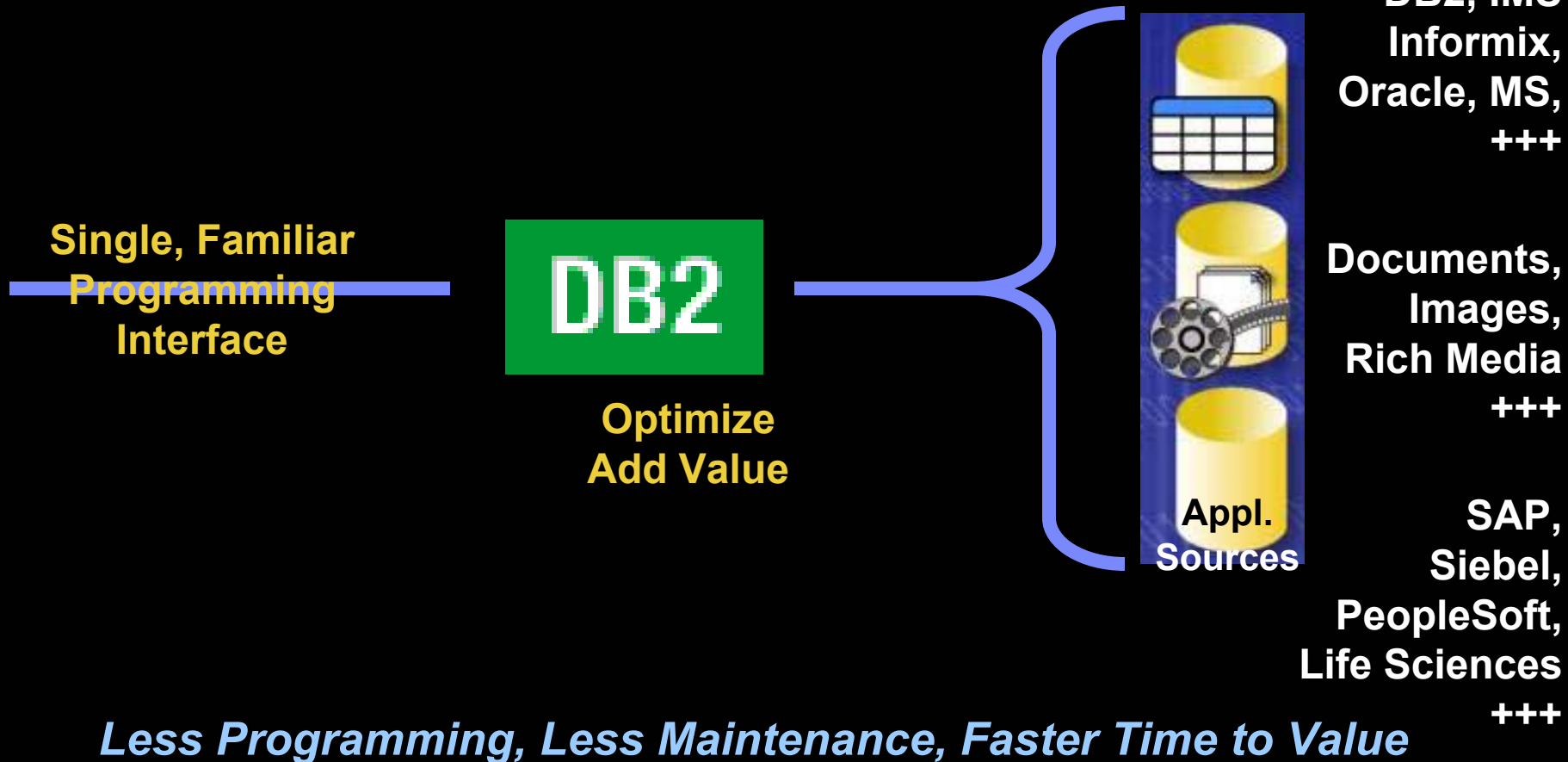
- ✓ **Compose/Shred, Storage, Interchange Standards**
- **Increasing Integration : Schema & Language**

Less Skill, Less Resource, Better System Utilization



Data Isn't Just Data...Anymore

- **Federated over Heterogeneous Sources is Key.**
Formats, Location, Platforms, Vendors

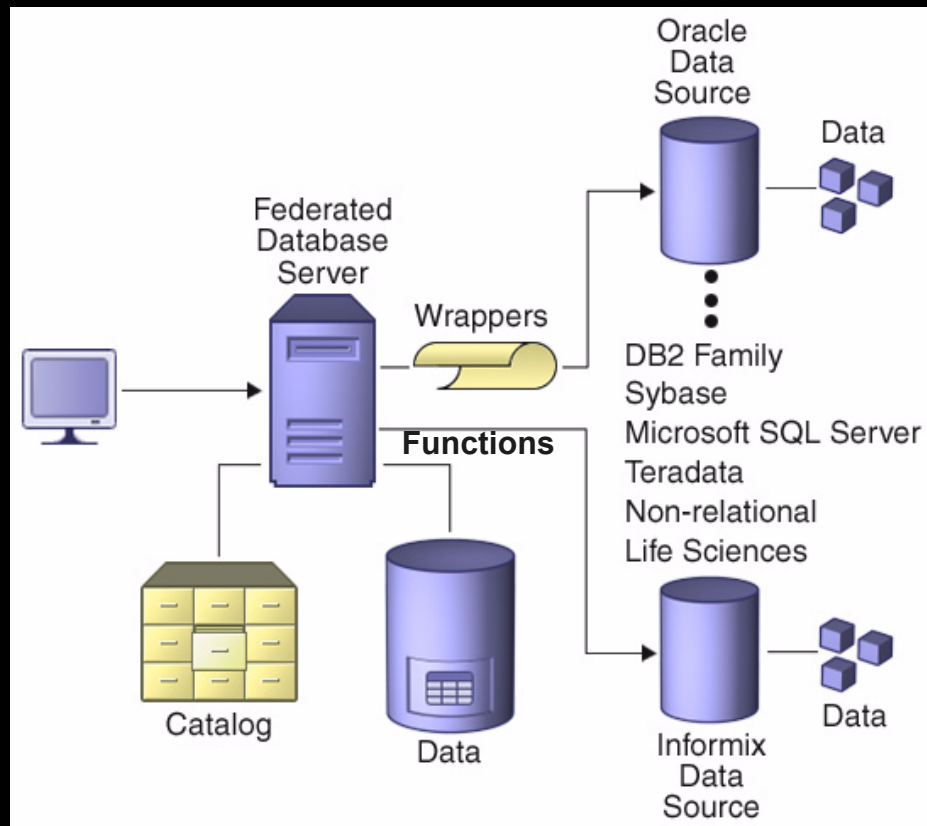


DB2 Information Integrator : Value for Informix

- IBM's "Xperanto" project
- Introducing new integration software : DB2 Information Integrator
 - DB2 Information Integrator 8.1
 - DB2 Information Integrator for Content 8.2
- Beta available now - Access beta through IBM client representative
- Data Federation (leave your data where it is)
 - Create new applications that integrate data stored in Informix with data from Oracle, Sybase, SQL Server, Teradata, XML files, Flat files, Message Queues, Web Services, ODBC databases...
 - Supports 2PC enabling a single unit of work to update Informix, Oracle and read an MQ, all from a single API with a common language (DB2 SQL)
 - Enable new applications to use DB2/UDB APIs and SQL but keep the data in Informix 7.3, 8.3 or 9.3
 - A single API for access to both Informix or DB2 or Oracle or...



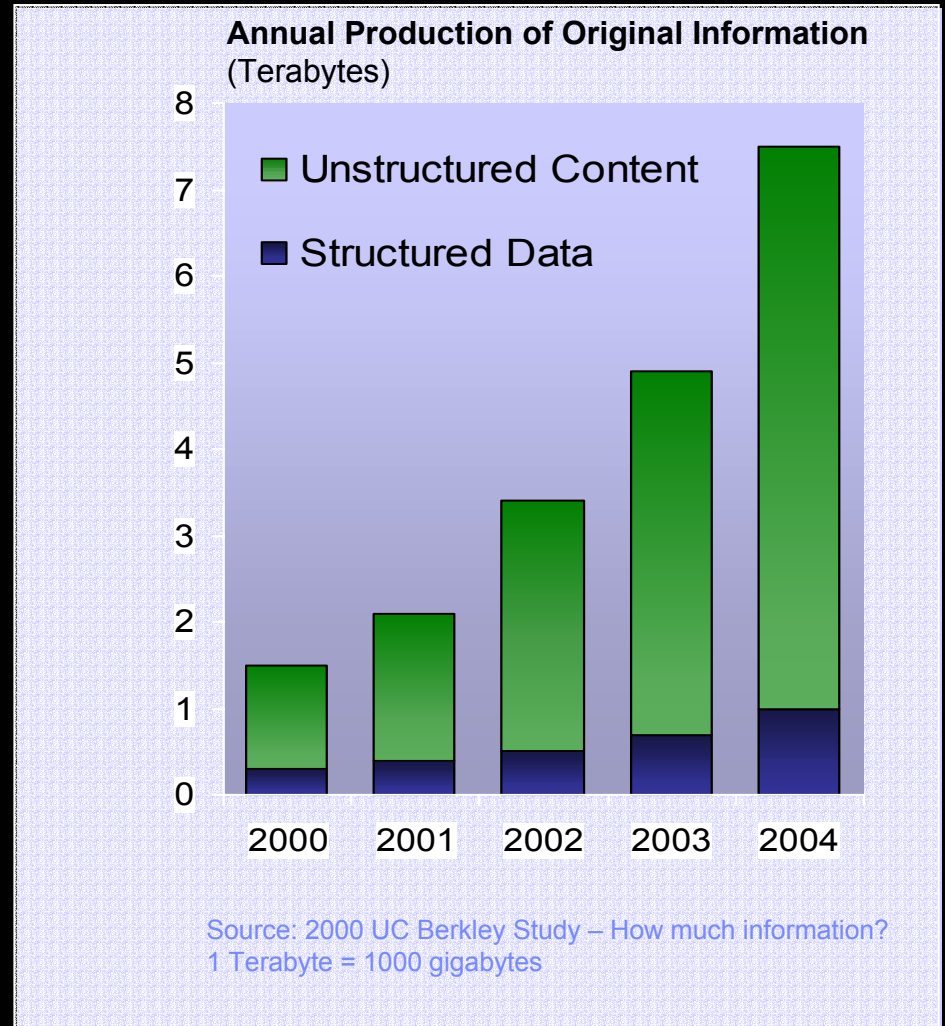
DB2 Information Integrator for Data Federation



- **Transparency**
 - Appears to be one source
- **Heterogeneity**
 - Integrates data from diverse sources
 - Relational, Structured, XML, messages, Web, ...
- **Extensibility**
 - Federate almost any data source.
 - Development tooling provided
- **High Function**
 - Full query support against all data
 - Capabilities of sources as well
- **Autonomy**
 - Non-disruptive to data sources, existing applications, systems.
- **Performance**
 - Optimization of distributed queries

In e-business, information volume grows exponentially

- 80% of the information created each year is unstructured content (text, image, audio, video)



What Are Users Demanding?

"Get me all the info..."



Integrated Information

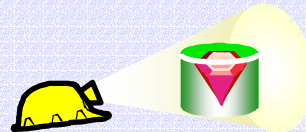
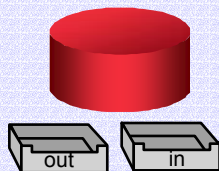
Business Process

Analysis

Computer Generated Output

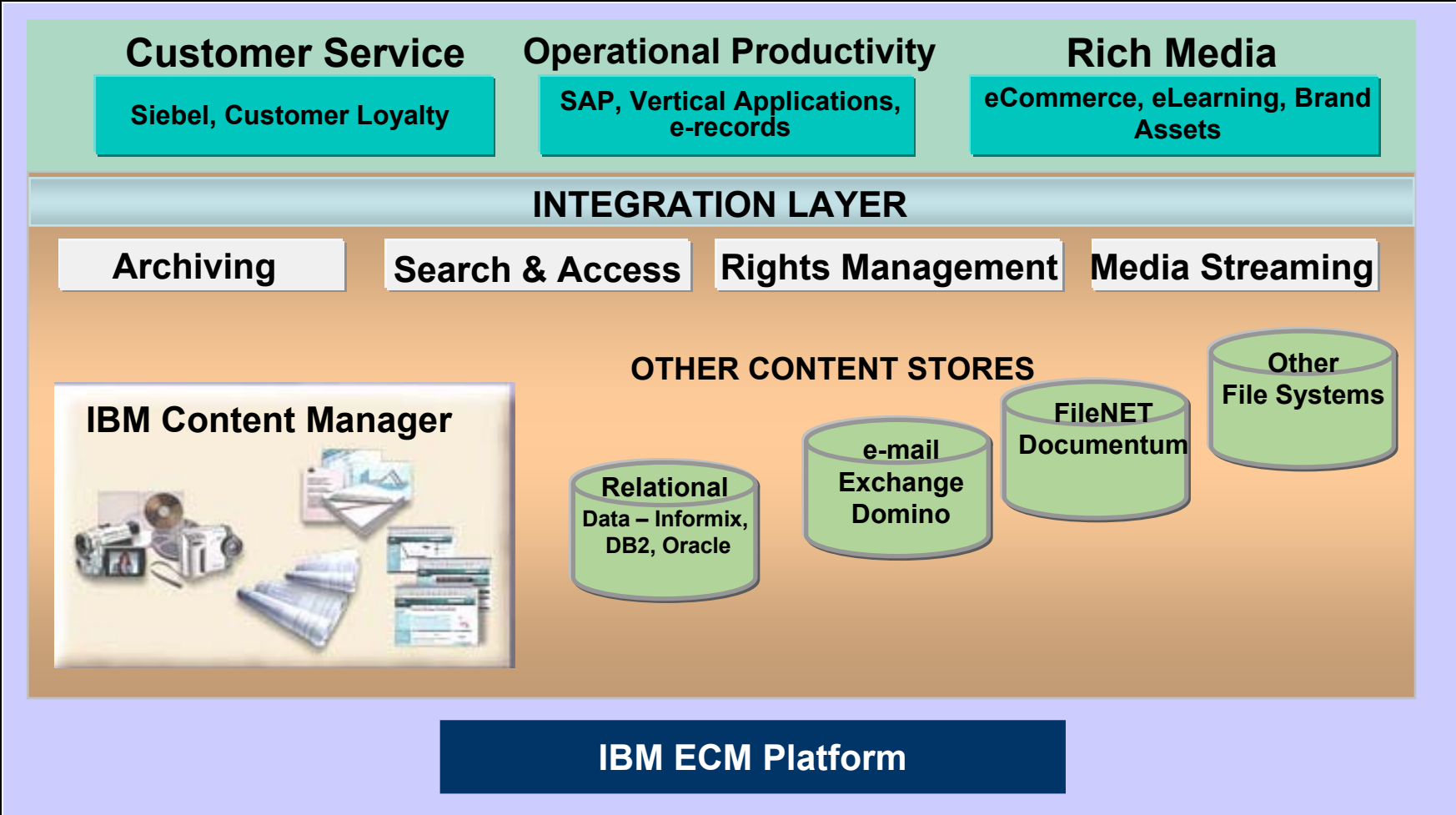
Rich Media

Experience



Enterprise Content Management

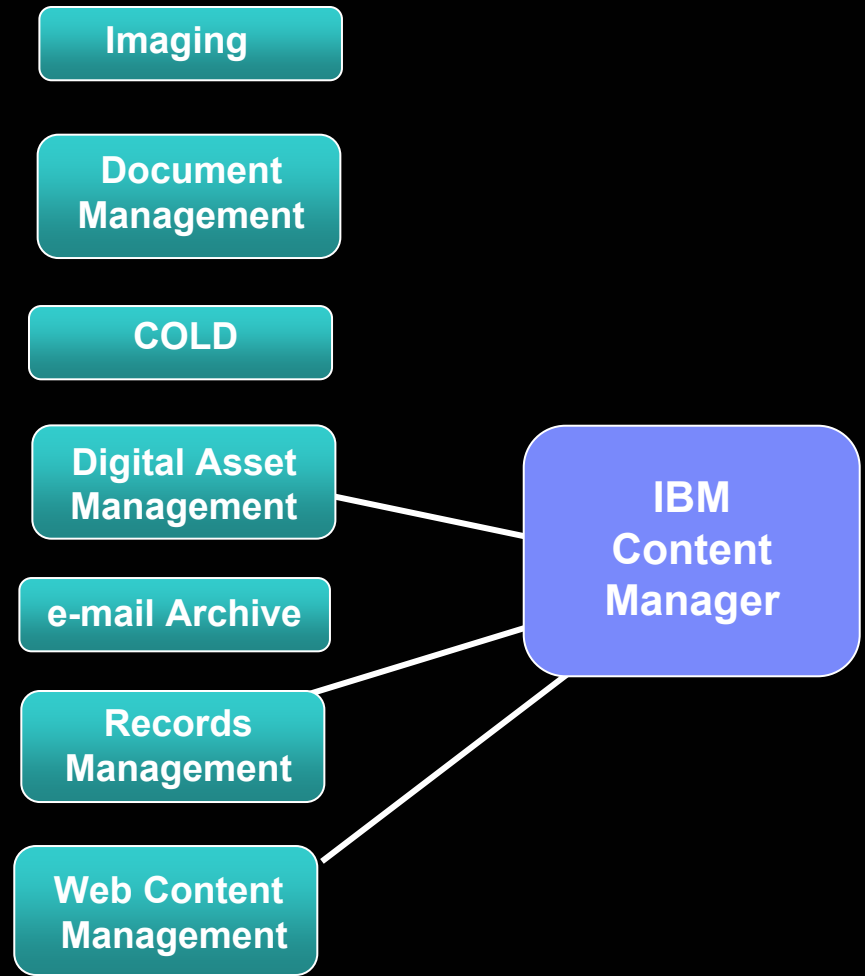
IBM Delivers the Total Solution



DB2 Content Manager...

A Comprehensive Foundation for Enterprise Content Management Solutions

- **Manages & Federates All Content**
 - Documents, Images, Computer output, e-Mail, Web Content, Records, Digital Assets
 - Unparalleled scalability
 - High performance
 - Enterprise scope
 - Federated search
- **Leverages IBM SW Portfolio**
 - DB2, WebSphere, MQSeries, Lotus, Tivoli
- **Strong Partner Solutions**
 - ISV Application Integration
 - CRM
 - ERP
 - Bill Presentment ...
 - Document Management



DB2 Information Management Software

information on demand... *A Rich Portfolio....A New Dialog*

Database Servers

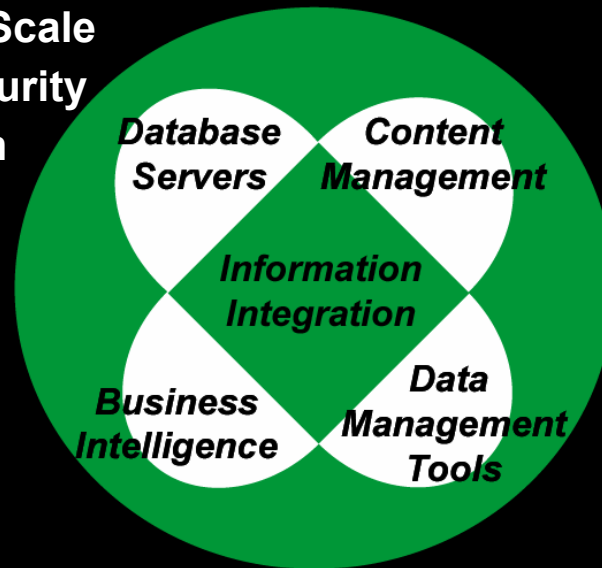
- OLTP & Analytical Applications
- High Performance & Scale
- High Availability, Security
- Platform Optimization

Enterprise Content Mgmt.

- Optimized Resource Managers for Rich Content
- Digital Rights Management
- e-Records Management

Business Intelligence

- Embedded Analytical Capabilities
- Solution Integration



Data Management Tools

- Reduced Administrative Costs Through Automation & Tools

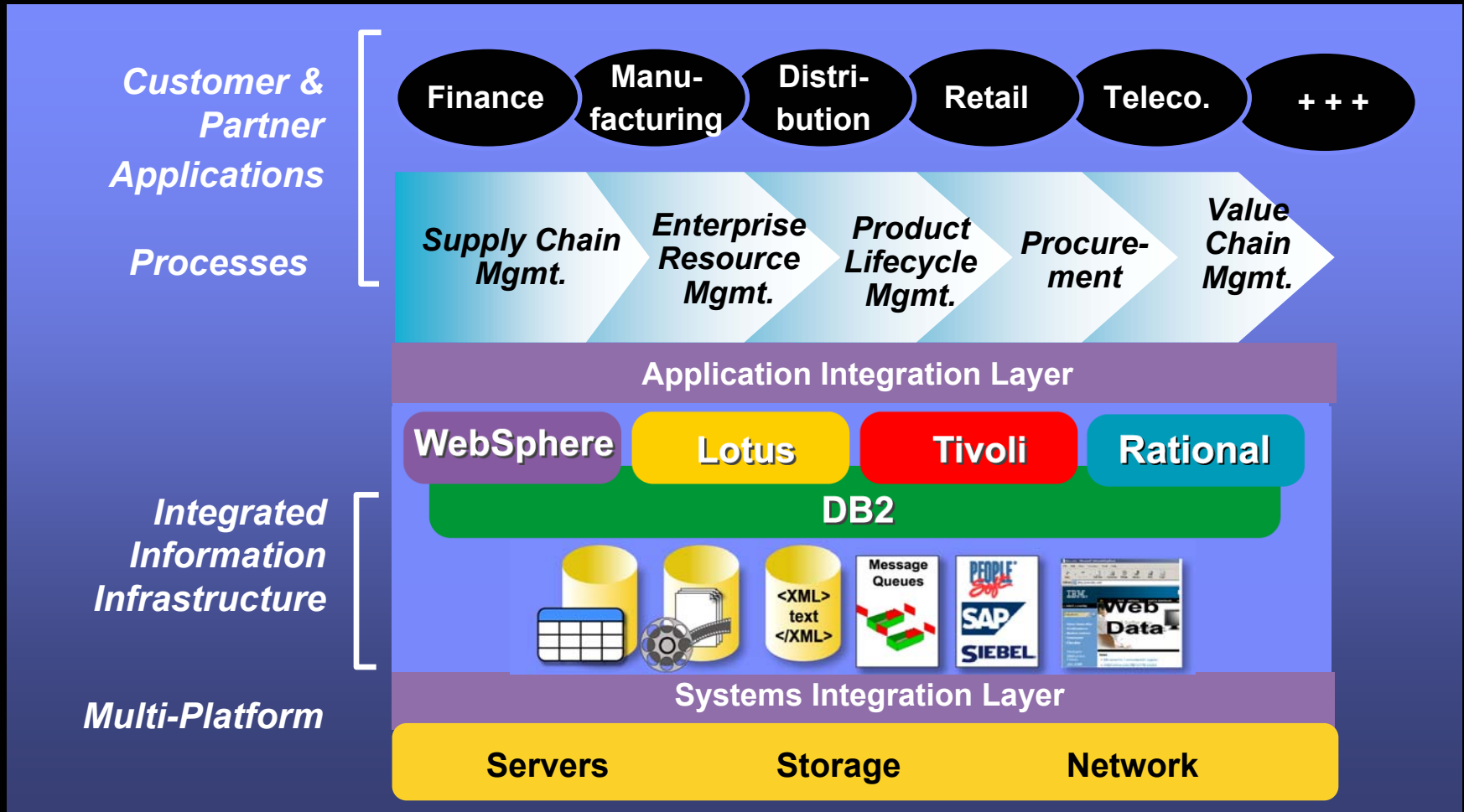
Information Integration

- Heterogeneous Federation, Search, Replication



information on demand

A Seamless Flow of Information...



Topics

- Update on Informix @ IBM
- Informix Product Roadmaps
- Informix 4GL & Rapid Application Development
- Product Convergence Plan
- The value of IBM Software
- “DB2 Information Management Software” Product Portfolio
- Summary



Why IBM?

- IBM continued to be the **leading vendor** in new license revenue in 2002, with a total of 36% market share (Gartner)
 - IBM share increased from 34.6% in 2001, which overtook Oracle
 - IBM also increased share of the Unix & Windows market
- IBM has wide Support for **Open Standards** –
 - IDS & IBM support wide array of OS and HW platforms including Windows 2000 and XP, HP-UX, Sun Solaris, Linux, AIX and OS-390
 - Will not limit your computing platform choice
 - many tools for heterogeneous data access from multiple data sources
- IBM Service & Support
 - Award-winning support through an extensive, well trained organization
 - Not strict reliance on 3rd party support



How to leverage the advantages of Informix @ IBM?

▪ **Get more information**

- Talk to your local IBM sales representative
- Join International Informix Users Group and your local user group
 - <http://www.iiug.org>

▪ **Check out Passport Advantage, IBM's order processing and fulfillment tool**

- Earn volume discounts on all IBM Software
- Most Informix products enrolled, more to come

▪ **Explore the breadth of IBM Software e-business offerings in addition to your Informix portfolio**

- Integration with WebSphere Application Server - Servers
- Tivoli System Management and Archive tools
- Connectivity options for your heterogeneous environment – Gateways
- Content Management
- Business Intelligence Tools



Websites for more information

- IBM Software:
 - ibm.com/software
- IBM Data Management
 - ibm.com/software/data
- New Informix home page
 - ibm.com/informix
- IDS 9.40 Launch page
 - ibm.com/informix/ids94
- Informix Today Newsletter
 - ibm.com/informix/informixtoday

Thank you!

Thanks for your time!

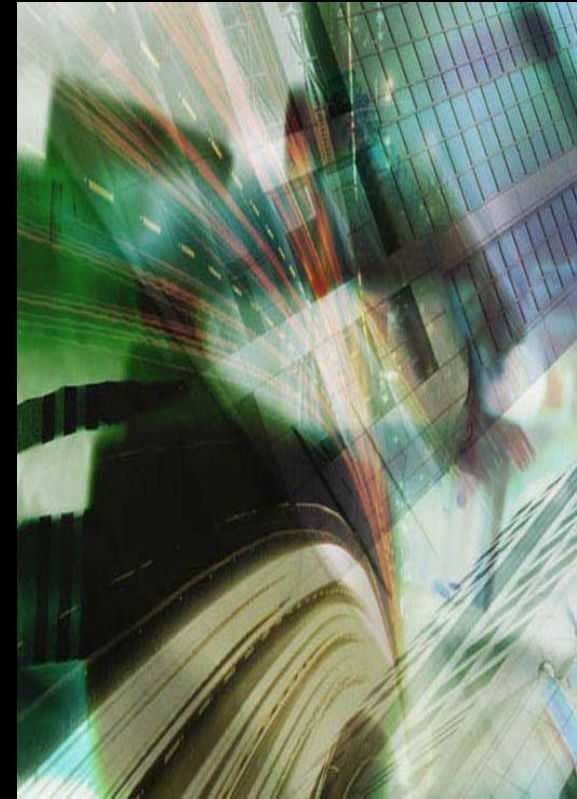


Thank you



Agenda

- **Appendix Items**



Leveraging Cloudscape across IBM

- 40+ IBM groups developing or shipping Cloudscape
 - WAS v5 shipping Cloudscape
 - Web Services Toolkit
 - Lotus LearningSpace
 - WebSphere Portal Server
 - Tivoli Storage Resource Manager
 - HR and Payroll Solutions
 - Tivoli Workload Scheduler
 - Many more future projects
- Sun J2EE Reference Implementation
 - Contract extended until 2005



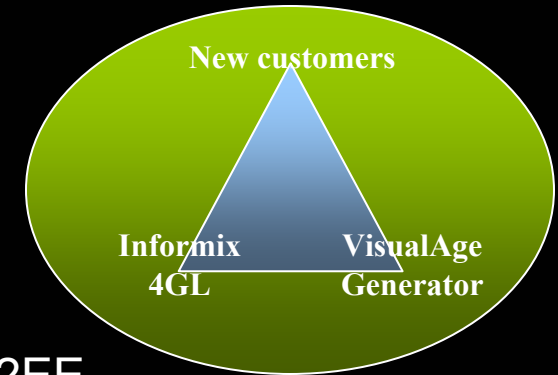
Topics

- Back-up slides on

4GL/EGL & WebSphere Studio integration

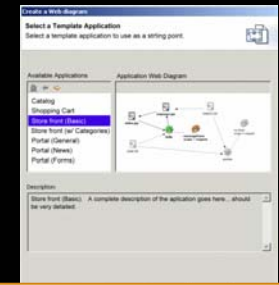
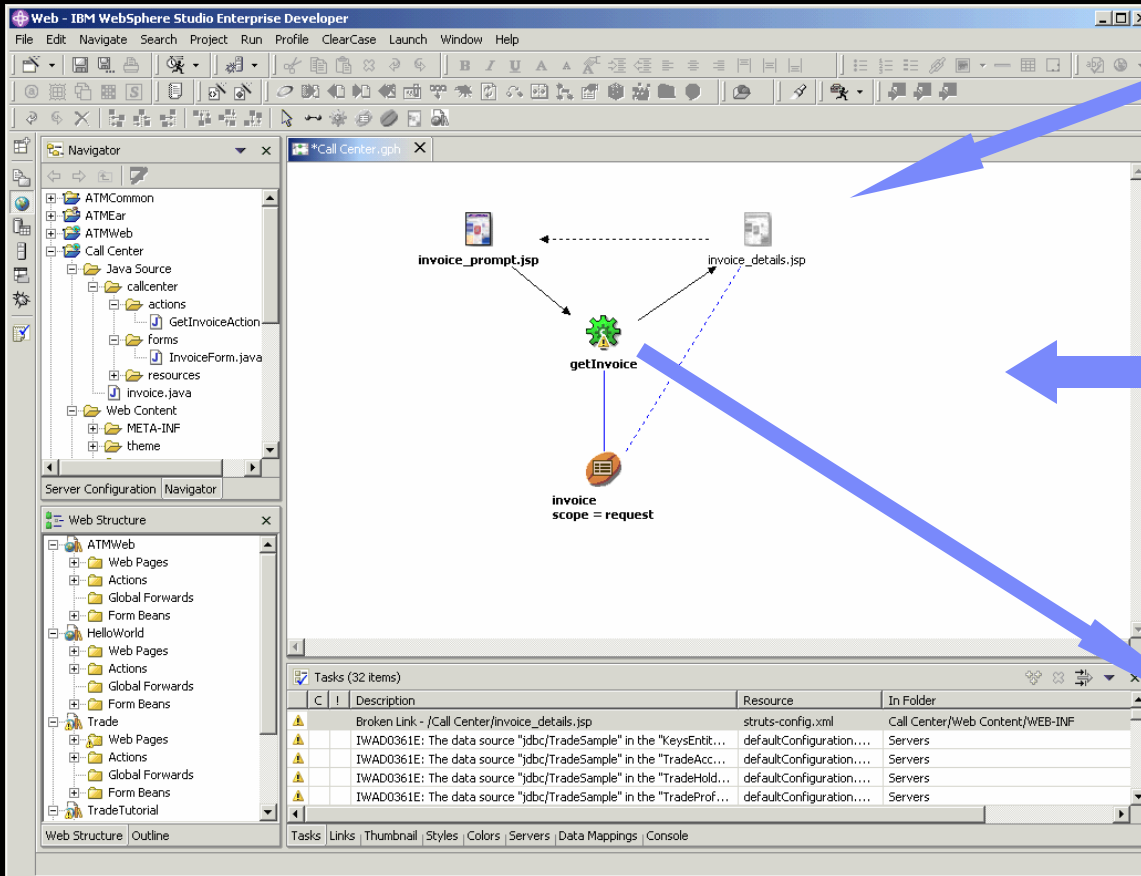


Target Audience

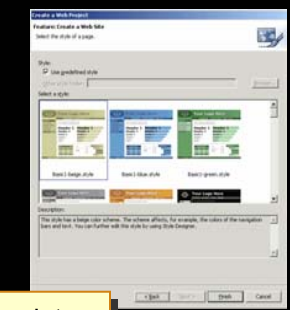
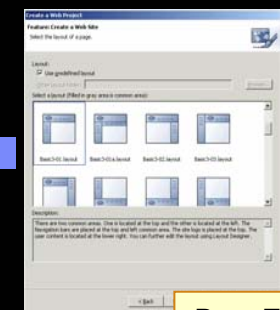


- New customers without deep J2EE skills that need to deploy “database-centric” web applications to J2EE runtimes
 - Non-J2EE, “Business-oriented” developers
 - Companies seeking a Rapid, **yet robust and flexible** Web/Database application development solution
 - Companies that would have used the following tools in the past: **Powerbuilder, Oracle Forms, Informix 4GL, VisualAge Generator, CoolGen, RPG, COBOL, Visual Basic, ...**
 - Companies that may need to deploy applications to multiple platforms using the same toolset: (AIX, Linux, Solaris, HP-UX, Windows, i-series, z-series)
- Migration path for Informix 4GL developers
- Migration path for VisualAge Generator developers

Design Application Flow



Application Templates



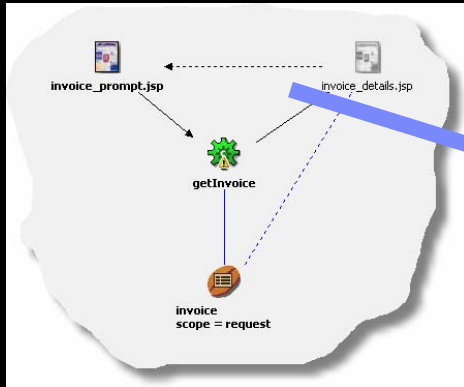
Page Templates

```

Program account(acctvs acct...
account account;
script
account ACCT_NUMBER = acctvs.acct_number;
update account on exception
ezertn();
end
if (account not nrf)
account.BALANCE = account.balance - acctvs.txn_amt;
replace account on exception
ezertn();
end
acctvs.balance = account.balance;
end
scriptend
Record account
SQLProperties
    account TI*
    (9); // ACCT_NUMBER
    // CUST_ID
    (2); // BALANCE
SQLItemProperties
item=ACCT_NUMBER
    
```

EGL Editor

IRAD Example



Web - IBM WebSphere Application Server - Express

File Edit Toolbar Insert JSP Format Table Frame Page Tools Navigate Search Project Profile Run Window Help

index.jsp

WYSIWYG Page layout

Call Center Home Page

Invoice Search

Enter an Invoice Number:

Customer Support Representatives

Employee Name	Job Title	Department
Jane Smith	Collections Supervisor	B257
Howard Thomas	Invoices and Billing	D334
Robert Johnson	Customer Care	H789
Debbie Brown	Account Management	S321

Drag and Drop Data

Data

- Customer
 - Customer number
 - Customer name
 - Customer address
 - Customer phone number
- Invoice
 - Invoice number
 - Account Representative
 - Invoice Total
- Invoice Items
 - Item number
 - Quantity
 - Price

Employee number
Employee name
Employee job title
Employee department

Events

Behavior

onSubmit

```

Function Get_Invoice ()
  if (invoice_number.isValid())
    Invoice inv = get_invoice_details();
    invoice_details_page.open(inv);
  on exception
    error_page.open();
  end
else // invoice number not valid
  error_msg.text = "Invoice number not found"
  this.refresh ();
end
end
    
```

EGL Code can target Client or Server

Directly code the *behavior* for various *events* associated with *UI elements*

TUI Example

The screenshot displays the IBM WebSphere Studio Enterprise Developer interface. The main workspace shows a TUI design for an "Account Management System". The design is laid out on a grid and includes the following elements:

- Title:** Account Management System
- Date/Time:** MM/DD/YYYY HH:MM xx
- Section Header:** Customer Account Information
- Form Fields:**
 - Account Number: [Redacted]
 - Name: [Redacted]
 - Address: [Redacted]
 - City: [Redacted] State: [Redacted] Zip code: [Redacted]
 - Last Update: [Redacted]
- Footer:** A row of function key assignments: F1 = Help, F2 = [Redacted], F3 = Exit, F4 = [Redacted], F5 = [Redacted], F6 = [Redacted], F7 = [Redacted], F8 = [Redacted], F9 = [Redacted], F10 = [Redacted], F11 = [Redacted], F12 = [Redacted].

The interface also shows a J2EE Navigator on the left with a project tree containing files like grid.gif, Master.css, tradebanner1.gif, tradebanner2.gif, and WEBSPHERE_22P.GIF. Below the Navigator is the Properties window, and at the bottom is the Tasks window listing 32 items with descriptions and locations.

Futures

- User Interface Support
 - Visual Builder for abstract UI definitions that can be transformed into:
 - Various Web UI forms (JSP, Portlet, Pervasive Device, XUL, ...)
 - a Text-based UI
 - a GUI (Swing)
 - GUI applications (“Fat Client”)

- Lightweight Object Oriented Syntax
 - Provide parallel OO-lite syntax...retain current syntax for migration and comfort of current developer community.
 - Allows integration of modeling tools
 - Attracts younger developers that are comfortable with this syntax from exposure to JavaScript and other similar dialects



Topics

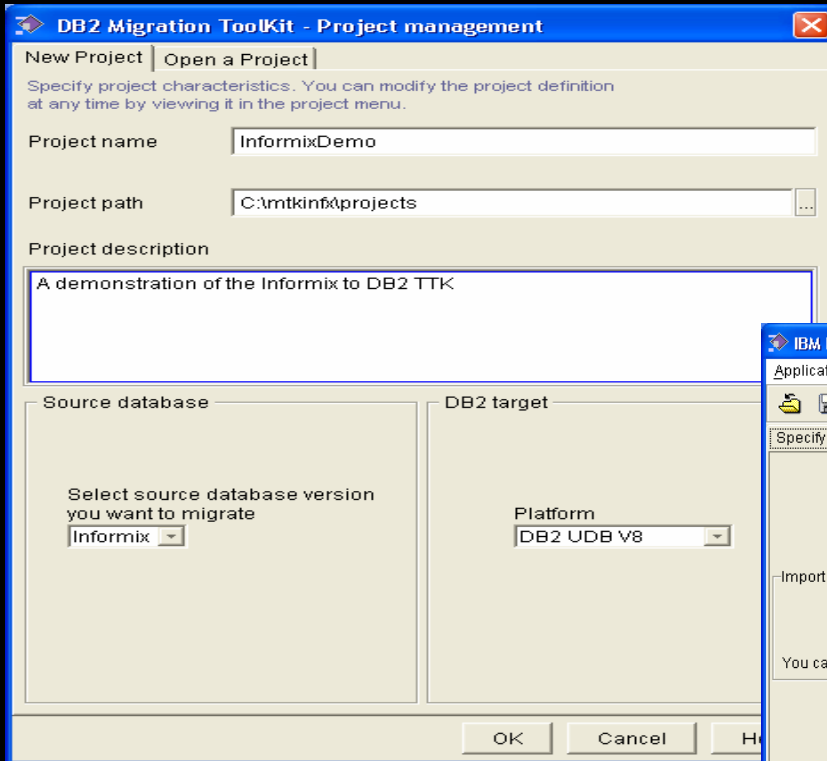
- Back-up slides on

TTK demo

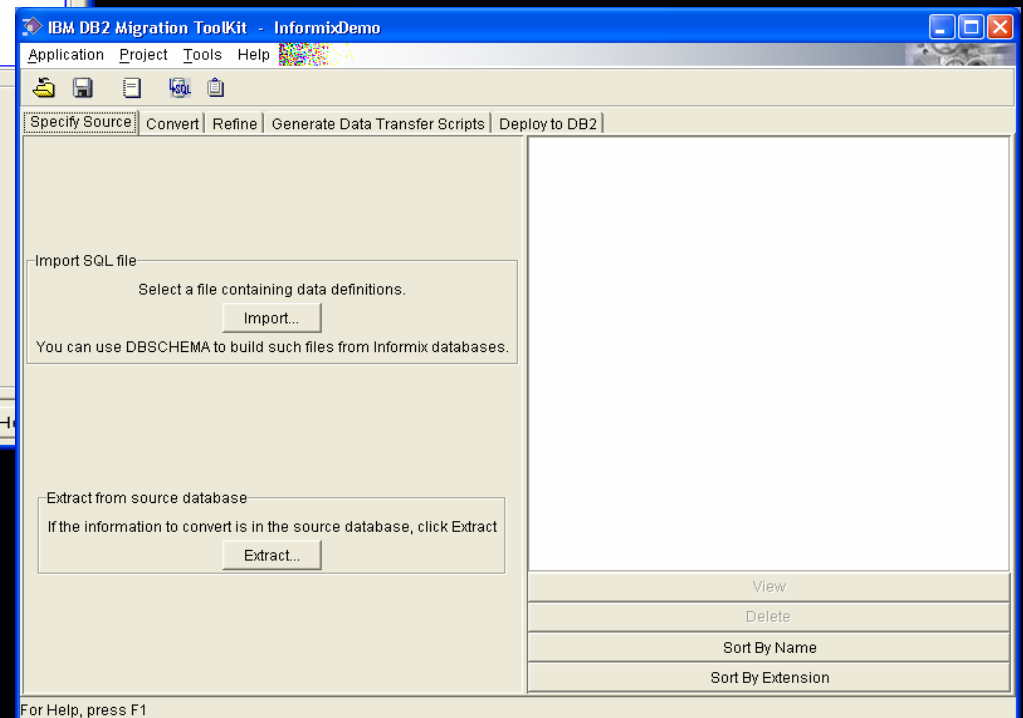


TTK steps

1. Create a project

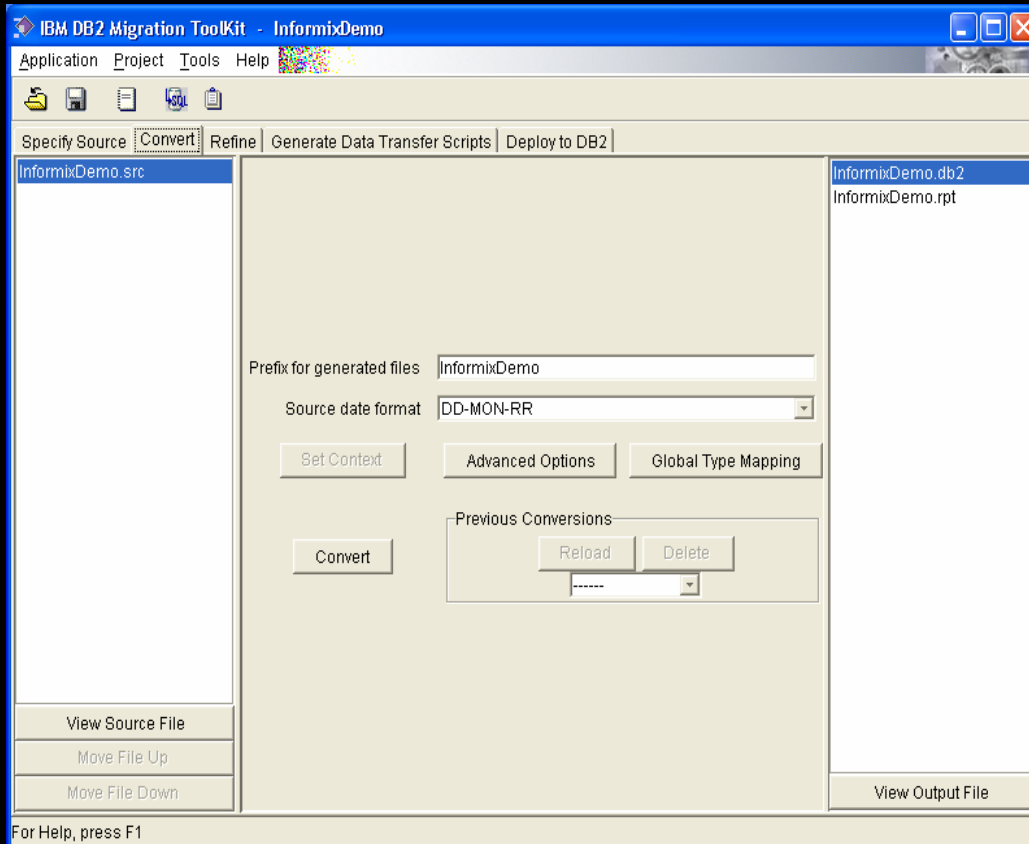


2. Generate Informix SQL for schema



TTK Steps

3. Convert SQL to DB2 syntax



SQL for Informix Schema

```

InformixDemo.src - Notepad
File Edit Format View Help
-- Extractor has started
-- Sun Feb 23 18:04:16 PST 2003
-- Source JDBC Connection = fisherxp:1526:InformixDemo:INFORMIXSERVER=01_fisherxp
-- UserID = Informix
-- include dependencies
--
database stores_demo;
-- write tables
CREATE TABLE "fisher".call_type
(call_code CHAR(1),
code_descr CHAR(30)
);
ALTER TABLE "fisher".call_type ADD CONSTRAINT
PRIMARY KEY (call_code);
CREATE TABLE "fisher".catalog
(catalog_num SERIAL NOT NULL,
stock_num SMALLINT NOT NULL,
manul_code CHAR(5) NOT NULL,
cat_descr TEXT,
cat_picture BYTE,
cat_advert VARCHAR(255,65)
);
ALTER TABLE "fisher".catalog ADD CONSTRAINT
PRIMARY KEY (catalog_num);
CREATE TABLE "fisher".cust_calls
(customer_num INTEGER,
call_dt_time DATETIME YEAR TO MINUTE,
user_id CHAR(32) DEFAULT USER,
call_code CHAR(1),
call_descr CHAR(240),
res_dt_time DATETIME YEAR TO MINUTE,
res_descr CHAR(240)
);
    
```

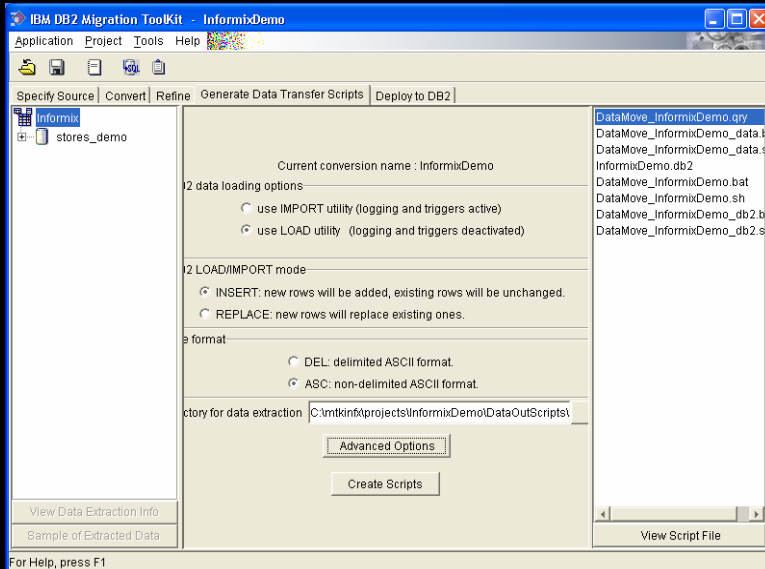
SQL for DB2 Schema

```

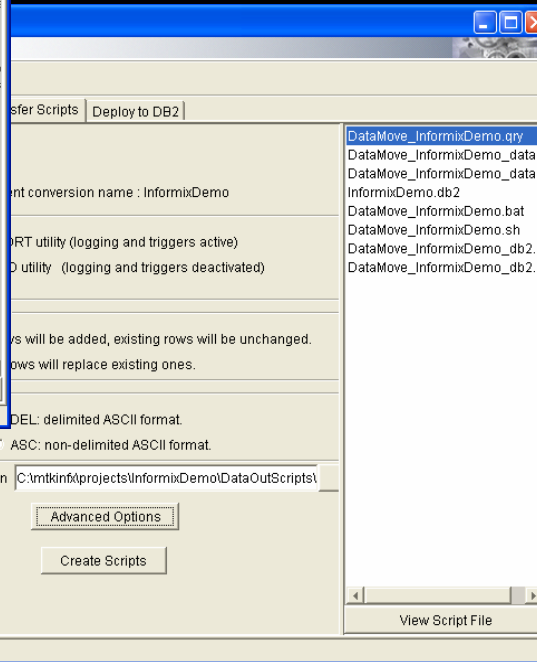
InformixDemo.db2 - Notepad
File Edit Format View Help
--* [300000]MTK Informix converter. version: 030220.0312
--
-- Extractor has started
-- Sun Feb 23 18:04:16 PST 2003
-- Source JDBC Connection = fisherxp:1526:InformixDemo:INFORMIXSERVER=01_fisherxp
-- UserID = Informix
-- include dependencies
--
database stores_demo;
--* [300034]"c:\mtk\inf\projects\InformixDemo\InformixDemo.src"(8:1)-(8:21)No DB2 translation av
--
-- write tables
CREATE TABLE "fisher".call_type
(call_code CHAR(1),
code_descr CHAR(30)
);
--* [300024]"c:\mtk\inf\projects\InformixDemo\InformixDemo.src"(13:5)-(13:21)NOT NULL constraint
DROP TABLE CALL_TYPE!
CREATE TABLE CALL_TYPE(
CALL_CODE CHAR(1) NOT NULL,
CODE_DESCR CHAR(30)
);
--
-- ALTER TABLE "fisher".call_type ADD CONSTRAINT
-- PRIMARY KEY (call_code);
ALTER TABLE CALL_TYPE
ADD PRIMARY KEY(CALL_CODE)!
    
```

TTK Steps

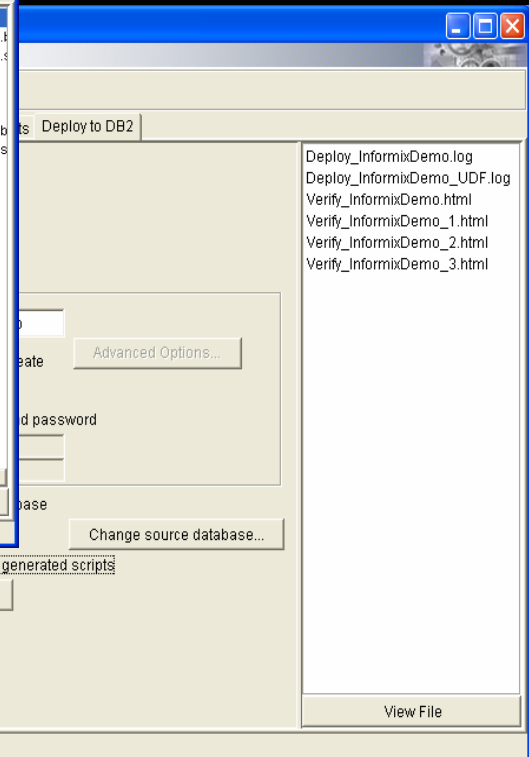
4. Generate unload / load scripts



5. Deploy schema creation



6. Deploy data unload / load



TTK Steps

7. Examine Deployment reports

Report built: Feb 23, 2003 6:05:25 PM

demo Informix Transition Demo
project created: Feb 22, 2003

[demo](#)

InformixDemo A demonstration of the project created: Feb 23, 2003

[InformixDemo](#)

Project: InformixDemo - conversion InformixDemo

source files: InformixDemo.src

context files: none

report built: Feb 23, 2003 6:05:26 PM

- [Conversion summary report](#)
- [Translation error messages by object](#)
- [Translation error messages by category](#)
- [Estimate of table size](#)
- [Large statements warnings](#)
- [Verification report](#)
- [Deployment log](#)

Report built: Feb 23, 2003 6:05:22 PM

Object reports for this conversion

Conversion Date	Feb 23, 2003 at 06:05:22 PM PST
Project Name	InformixDemo
Source Database Type	Informix
Converted Source File(s)	InformixDemo.src
Target Database Type	DB2
Target User	

Objects	Source Count	Target Count
Database(s)	1	1
Catalog(s)	1	1
Schema(s)	1	1
User type(s)	0	0
Table(s)	9	9
View(s)	0	0
Column(s)	52	52
Index(es)	1	1
Foreign Key(s)	7	7
Proc(s) & Function(s)	0	0
Trigger(s)	0	0

Report built: Feb 23, 2003 6:05:25 PM

Errors reports

Object	Location of Error	Error Message
N/A	Line N/A-N/A	File N/A
N/A	Line N/A-N/A	Translation Ratio: 100% (27/27 statements were translated successfully)
N/A	Line N/A-N/A	MTK Informix Converter Version: 0302200312
N/A	Line N/A-N/A	File InformixDemo.src
N/A	Line 8-8	No DB2 translation available, but statement has been taken into account
BaseTable: CALL_TYPE	Line 13-13	NOT NULL constraint is added because of a PRIMARY KEY or UNIQUE constraint.
BaseTable: CUST_CALLS	Line 33-33	NOT NULL constraint is added because of a PRIMARY KEY or UNIQUE constraint.
BaseTable: CUST_CALLS	Line 34-34	NOT NULL constraint is added because of a PRIMARY KEY or UNIQUE constraint.
BaseTable: ITEMS	Line 63-63	NOT NULL constraint is added because of a PRIMARY KEY or UNIQUE constraint.
BaseTable: ITEMS	Line 63-63	NOT NULL constraint is added because of a PRIMARY KEY or UNIQUE constraint.
BaseTable: MANUFACT	Line 75-75	NOT NULL constraint is added because of a PRIMARY KEY or UNIQUE constraint.
BaseTable: STATE	Line 100-100	NOT NULL constraint is added because of a PRIMARY KEY or UNIQUE constraint.



IDS – WebSphere Interoperability Matrix

Informix Product	WebSphere Product	Certified?	eGA/GA
IDS 7.3, 9.21, 9.3	WAS v4.05	Y	-
IDS 7.3, 9.3	WAS v5.0	Y	-
IDS 9.4	WAS v5.01	Y	eGA 4/15/2003 (HP GA 5/9/2003, no other GA))
IDS 7.3, 9.3	WAS Express v5.0x	Y	-
IDS 9.4	WAS Express v5.01x	Y	-
IDS 9.3	WebSphere Portal Enable 4.2.1, Extended 4.2.1	Y	04/2003
IDS 7.3, 9.21	MQ 5.2	Y	Solaris and HP-UX
IDS 9.2.1	MQ 5.1	Y	Solaris-Intel only
IDS 7.3	WebSphere Studio v5, Site Developer	Y	eGA 12/9/2002, GA 1/20/2003
IDS 7.3	WebSphere Studio v5, Application Developer	Y	eGA 12/9/2002, GA 1/20/2003
IDS 7.3	WebSphere Studio v5, Application Developer Integration Ed.	Y	eGA 2/21/2002, GA 3/14/2003
IDS 7.3	WebSphere Studio v5, Enterprise Developer	Y	eGA 2/28/2002, GA 3/21/2003
IDS 9.2	WebSphere Studio v5, Site Developer	Y	eGA 12/9/2002, GA 1/20/2003
IDS 9.2	WebSphere Studio v5, Application Developer	Y	eGA 12/9/2002, GA 1/20/2003
IDS 9.2	WebSphere Studio v5, Application Developer Integration Ed.	Y	eGA 2/21/2002, GA 3/14/2003
IDS 9.2	WebSphere Studio v5, Enterprise Developer	Y	eGA 2/28/2002, GA 3/21/2003
IDS 9.3	WebSphere Studio v5, Site Developer	Y	eGA 12/9/2002, GA 1/20/2003
IDS 9.3	WebSphere Studio v5, Application Developer	Y	eGA 12/9/2002, GA 1/20/2003
IDS 9.3	WebSphere Studio v5, Application Developer Integration Ed.	Y	eGA 2/21/2002, GA 3/14/2003
IDS 9.3	WebSphere Studio v5, Enterprise Developer	Y	eGA 2/28/2002, GA 3/21/2003



Transition Tool Kit : Expected Availability

- | | |
|------------------------------------|------------|
| ■ Available as a services tool | Today |
| ■ Closed beta for phase 1 function | April, '03 |
| ■ Closed beta for phase 2 function | July, '03 |
| ■ Open beta | Dec., '03 |
| ■ General Availability | 1H, '04 |



DataBlade Mission

- Maintain and support DataBlade products
 - Provide bug fixes with timely FixPack (Interim) Releases
 - Port/Certify DataBlade Modules to new platforms and OS releases
 - Assist Tech Support with customer cases including helping diagnose problems, suggesting workarounds, and providing patches for critical bugs
- Implement customer requested features
 - Product Management driven
- Drive extensibility and DataBlade technologies into DB2
 - Adding Geodetic (whole-earth) capability to Spatial Extender 8.2 release
 - TimeSeries and Real Time Loader DB2 design in progress
 - (Text search, audio/image/video, spatial, and XML Extenders already exist on DB2)



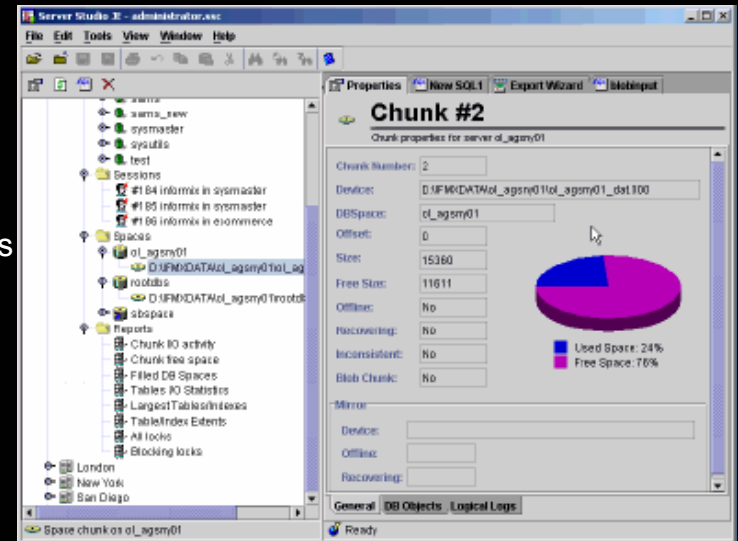
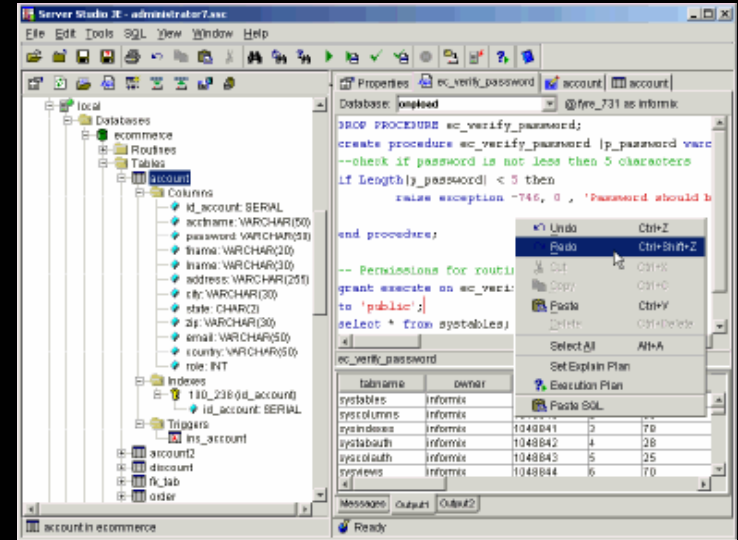
Other DataBlade Module Releases

- DataBlades are stable products
 - Bug backlog at historic lows
 - FixPacks as needed
- DDW 2.00.TC5 (Beta now, GA 2Q03)
- Web DataBlade 4.13.xC3 (Beta Q1/Q2, GA 3Q03)
- XSLT DataBlade 1.00.xC1 (alphaWorks)
- MQ DataBlade 1.00.xC1 (alphaWorks 3Q03)
- Verity Text – 4Q02 (existing customers only)
 - Bug fixes
- Excalibur Text 1.30.xC8 or 1.31.xC1 (3Q03)
 - Bug fixes
 - 64-bit support
 - Upgrade path for Verity Text DataBlade Module users



Server Studio Java Edition (JE)

- Server Studio JE ships with IDS
 - ✓ Platform independent tool
 - ✓ Extensible
 - ✓ Fully multi threaded
- Standard Features
 - ✓ Object Explorer
 - ✓ SQL Editor
 - ✓ Table Editor
- Additional Features available from AGS
 - ✓ Permission Editor
 - ✓ DBDiff
 - ✓ Dependency analyzer
 - ✓ System Management tools
 - ✓ www.serverstudio.com for current list of add-on modules
 - ✓ Support for XPS and OnLine 5



Informix – WebSphere integration

- IBM Informix Dynamic Server (IDS) is certified with WebSphere!*

WebSphere software

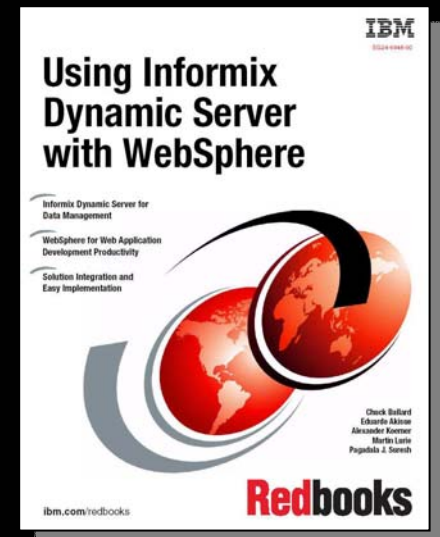
- WebSphere Application Server
- WebSphere Express
- WebSphere Portal Enable
- WebSphere Portal Extended
- WebSphere Portal Express (multi-platforms)**
- WebSphere MQ Series
- WebSphere Studio Site Developer
- WebSphere Studio Application Developer
- WebSphere Studio App. Dev. Integration Edition
- WebSphere Studio Enterprise Developer

The First IBM Informix **Redbook!**

- Covers all IDS / WebSphere Topics
- Lots of step-by-step examples (example code downloadable)
- Based on Linux and Windows
- Download at: **ibm.com/redbooks**
- **Redbook ID: SG24-6948**

* Some products not certified with all releases of IDS

**scheduled to be certified Q303



Informix – WebSphere integration

- IBM Informix Dynamic Server (IDS) is certified with WebSphere!

WebSphere. software

WebSphere Application Server

WebSphere Express

WebSphere Portal Enable

WebSphere Portal Extended

WebSphere Portal Express (multi-platforms)*

WebSphere MQ Series

WebSphere Studio Site Developer

WebSphere Studio Application Developer

WebSphere Studio App. Dev. Integration Edition

WebSphere Studio Enterprise Developer

* Some products not certified with all releases of IDS

**scheduled to be certified Q303



Informix - SWG Products Interoperability

- IBM Informix Dynamic Server (IDS) is certified with key elements of IBM Software Group products

WebSphere. software

IDS 9.3	WebSphere Application Server, v4.0. V5.0
IDS 9.3	WebSphere Portal Server, V5.0
IDS 9.3, 9.4	WebSphere Studio Application Developer, V4.0 Web Services Object Runtime Framework (WORF) V3.5
IDS 9.3, 9.4	WebSphere Studio Enterprise Developer, v.5.0

Tivoli. software

IDS 7.31, 9.21, 9.3	Tivoli Monitoring for Databases, V5.1.0
IDS 7.31, 9.21, 9.3	Tivoli Data Protection for Informix

Lotus software

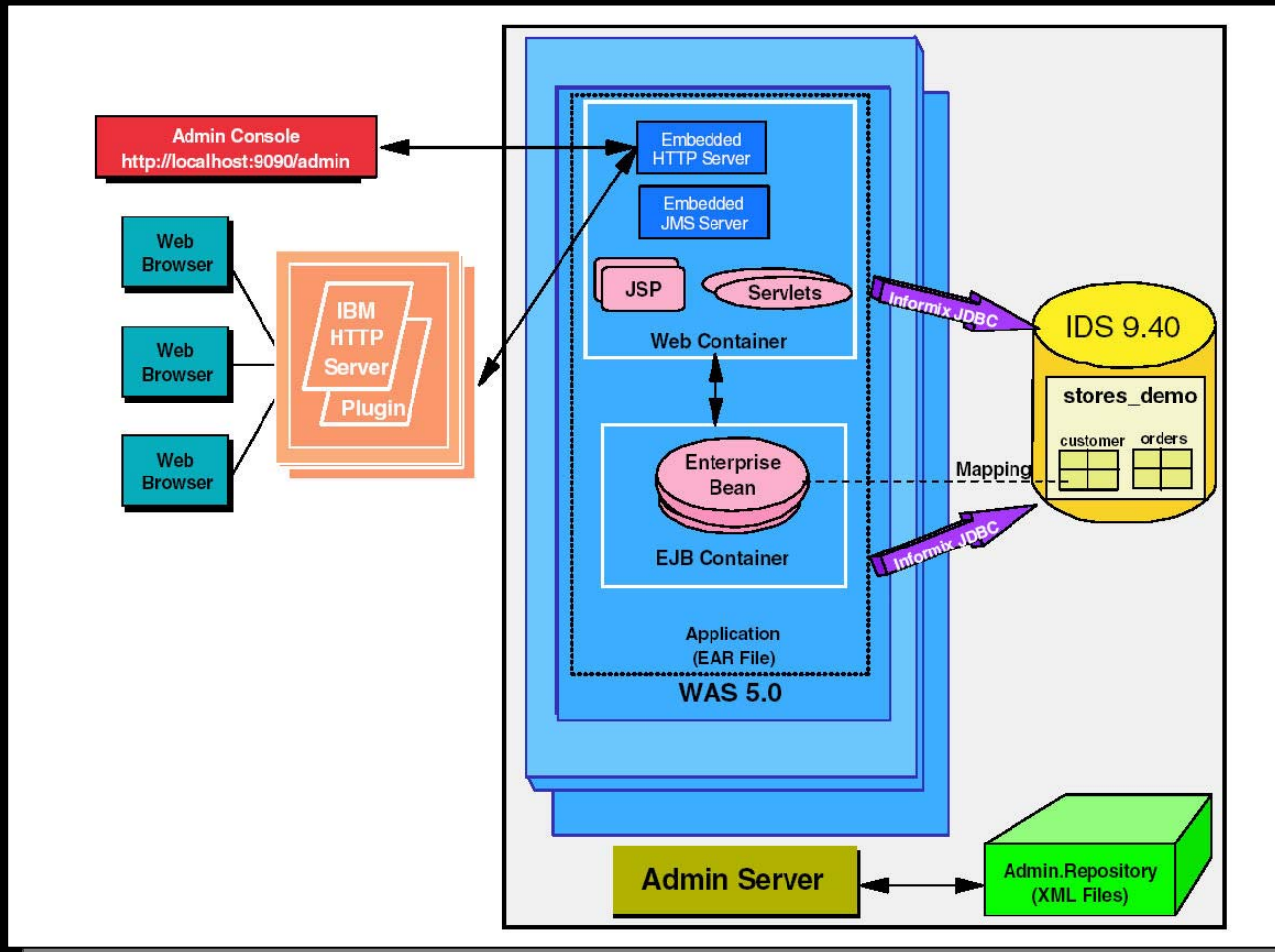
IDS	Lotus Enterprise Integration (LEI) 6 / Domino 6
-----	-------------------------------------------------



Product Interoperability

Informix Product	WebSphere Product	Certified?	eGA/GA
IDS 7.3/9.21/9.3	WAS v4.05	Y	2002
IDS 7.3/9.3/9.4	WAS v5.0	Y	Q2 2003
IDS 7.3/9.3/9.4	WAS Express v5.0x	Y	Q2 2003
IDS 9.3	WebSphere Portal Enable 4.2.1	Y	Q2 2003
IDS 9.3	WebSphere Portal Extended 4.2.1	Y	Q2 2003
IDS 9.3/9.4	WebSphere Portal Express for Multiplatforms v5.x	N	Late Q3 2003
IDS 7.3/9.21	MQ 5.2	Y	2002
IDS 7.3/9.2/9.3/9.4	WebSphere Studio v5, Site Developer	Y	Q1 2003
IDS 7.3/9.2/9.3/9.4	WebSphere Studio v5, Application Developer	Y	Q1 2003
IDS 7.3/9.2/9.3/9.4	WebSphere Studio v5, Application Developer Integration Edition	Y	Q1 2003
IDS 7.3/9.2/9.3/9.4	WebSphere Studio v5, Enterprise Developer	Y	Q1 2003

IDS and WebSphere Application Server 5 (Architecture)



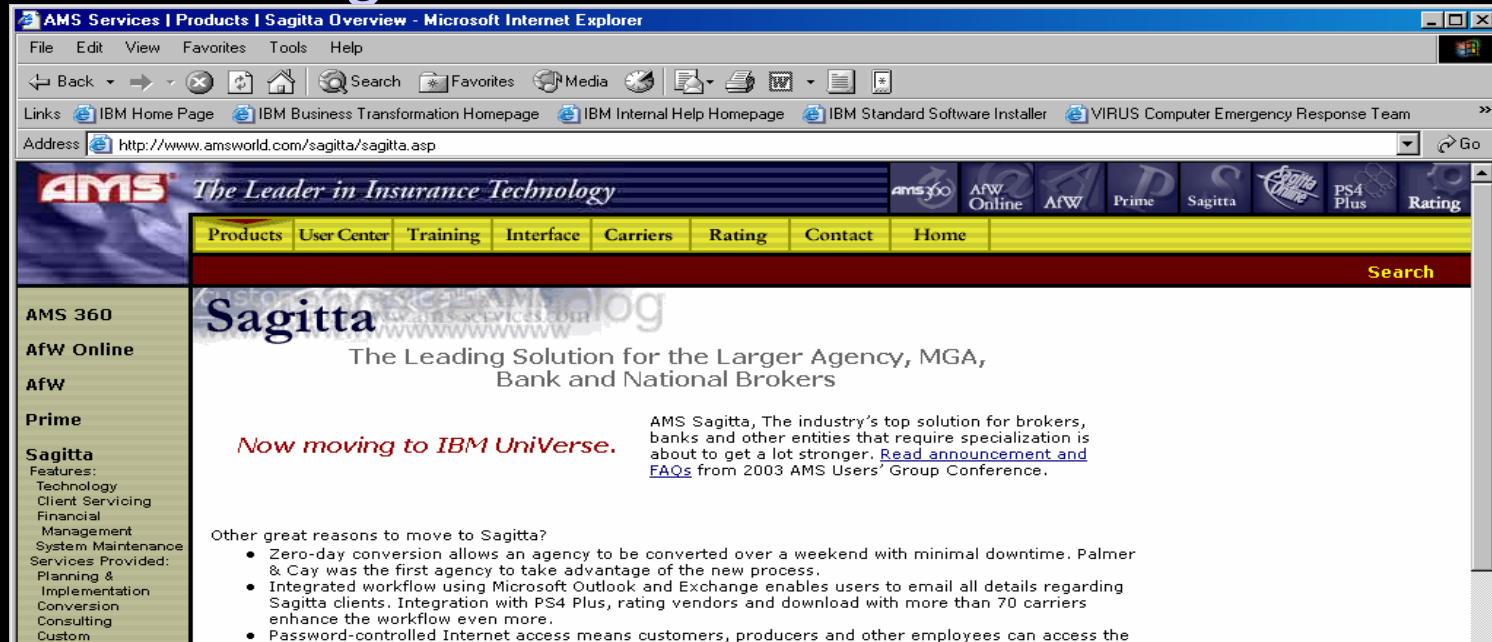
IDS and Web services integration

- **IDS as a Web service provider**
 - Usage of WebSphere Studio Web services Tools
 - Web services based on Java beans
 - DADX Web services (Web services based on SQL Statements and Stored Procedures)
 - Special enhancements in IDS 9.40 and the JDBC 2.21.JC4 driver for Web services support

- **IDS as a Web service consumer**
 - Utilization of the leading extensible architecture of IDS 9
 - Java or C user defined routines to access existing Web services
 - Easy integration of IDS's J/Foundation and the Apache AXIS framework for Web service access!



Who is choosing IBM U2?



Application

Sagitta is AMS's management system for the Larger Agency, MGA, Bank and top national brokers.

Business Benefits

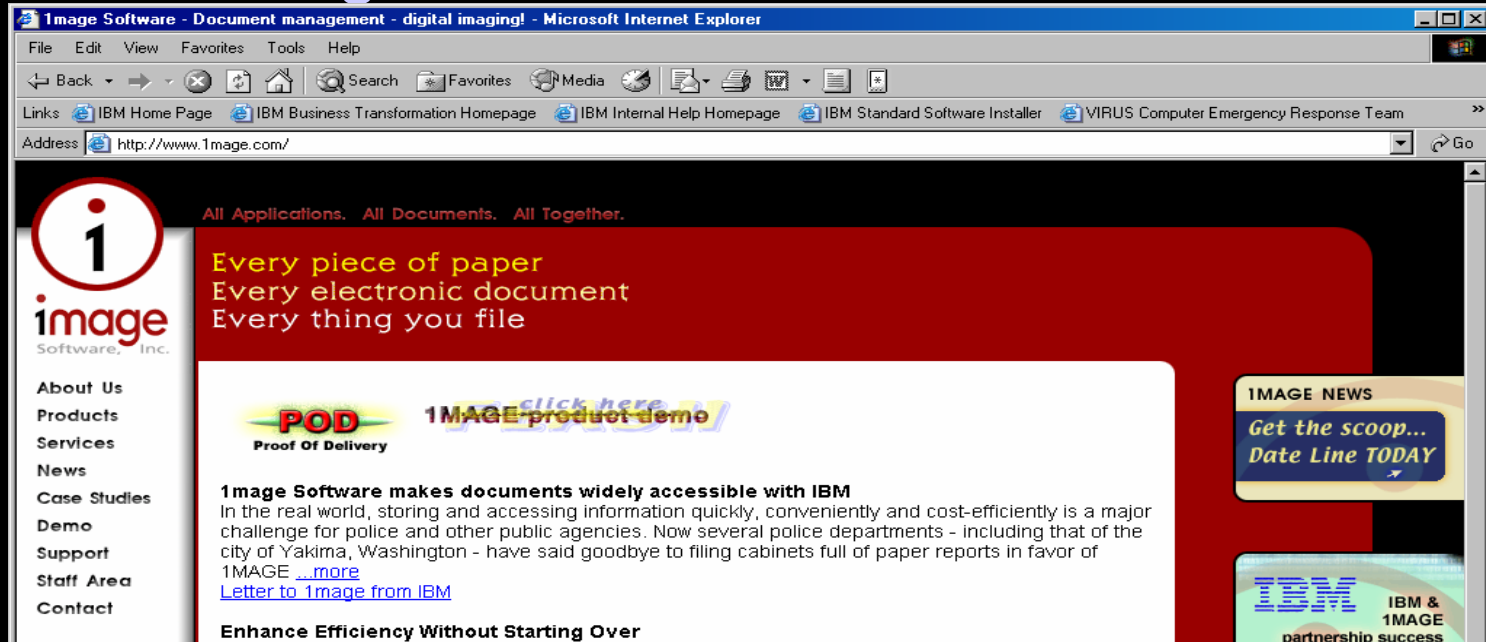
A powerful, customizable database and the ability to manage complex lines of business and processes.

“With IBM UniVerse and IBM eServers as its backbone, Sagitta agencies will have greater openness and accessibility with other standard database capabilities like XML, ODBC and SQL – better reporting and easier integration with other products.”

Dave Shea
President and CEO
AMS Services, Agency Markets



Who is choosing IBM U2?



Application

Document imaging, management and workflow system.

Business Benefits

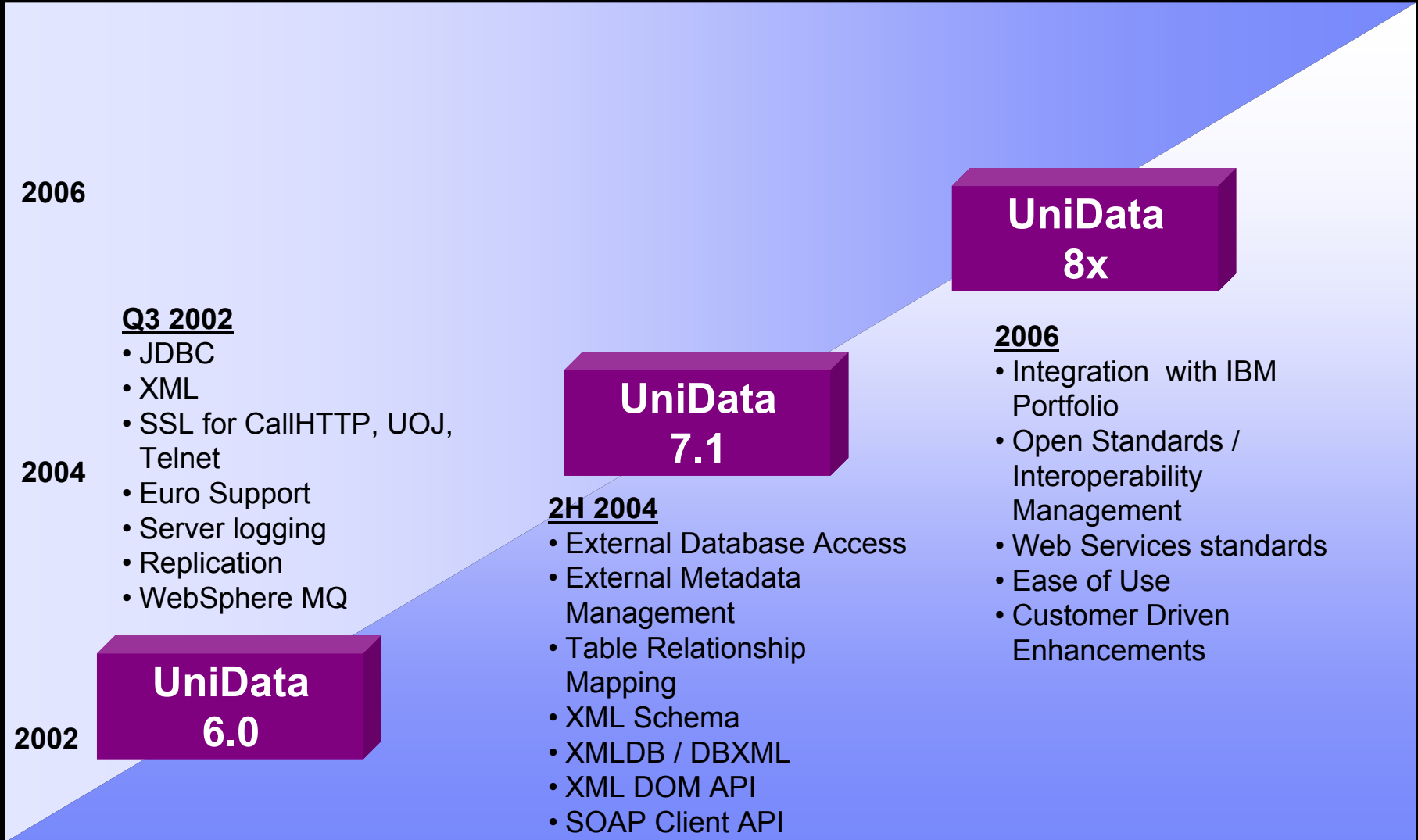
Attract and retain a wide customer base due to ease of use and cost effectiveness of solution. Estimated saving of \$100,000 per year or more in database administration costs; 30-40% reduction in time and cost for copying, distributing and filing paper reports

"There is simply no need for a database administrator in an IBM UniVerse shop. That's a saving of at least \$100,000 per year in DBA costs, right off the bat."

Peter Anderson
Vice President and CTO
1image Software, Inc.



IBM UniData Road Map



IBM UniVerse Road Map

