



Web Services in the On Demand Era



e-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**.

Key technologies for e-business on demand:

Web Services - Platform-neutral integration

Grid Computing – harness internal computing resources, lease external resources on demand

Autonomic Computing – hardware and software systems that automatically detect and manage failures to keep systems running

The on demand technology infrastructure has four essential characteristics

Integrated

Systems are seamlessly linked across the enterprise and across its entire range of customers, partners, and suppliers

Open Standards

Navigate and transact across organizational and geographic boundaries regardless of device or system

Virtualized

Uses grids to make collective power of grid computing resources available to anyone in the grid who needs them, making the best use of technology resources and minimizing complexity

Autonomic

Self-managing capabilities to respond automatically and avoid problems, security threats, and system failures

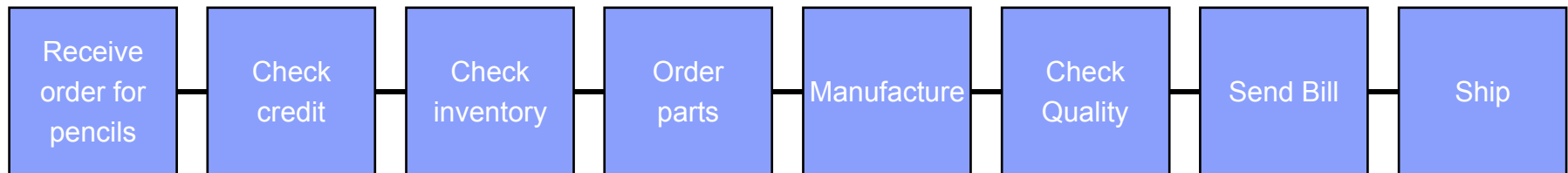
Business Integration Infrastructure

IT infrastructure pain points

Trying to do more with less



An example: manufacturing pencils



How are the orders received?
Telephone?
FAX?
Web site?
Direct from ERP system?

How complicated is it to use **more than one** credit checking agency?

How do I interact with my inventory system?
What do I do if I have **multiple** locations and **multiple** inventory systems?

How do I talk to my **different** suppliers?
How **automatic** is the ordering process?
How do I ensure that all the parts from my providers are available when I need them?

How well do my shop floor systems interact with the other parts of my business that need their information and status?

Can the electronic order form be **digitally signed** to assert that quality assurance has inspected the order?

Can I interact with **different** systems in order to ensure that I will get paid?

Can my order control system interact in a **standard way** with the systems of **my various shippers**?

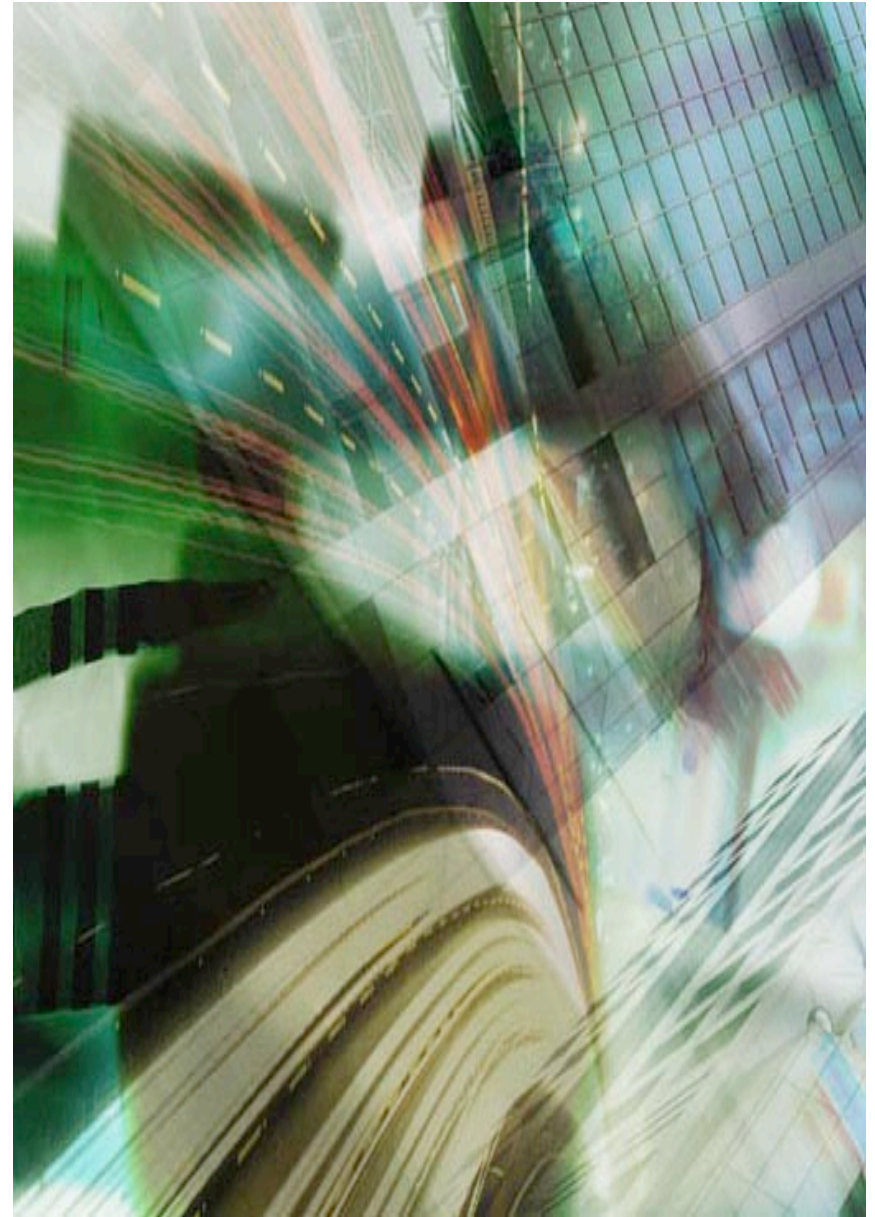
We need consistent ways of communicating with and invoking services, as well as ways to control the flow and coordination of what is going on.

This is what Web Services technology offers.

e-business on demand

Sounds good, but ...

- How much is it going to cost me?
- Where am I now regarding my people and IT resources?
- What are the technologies I need to invest in now?
- Given what my company does and the industry in which it operates, what should my goal IT infrastructure look like and what skills should my people have?
- *How much is it going to cost me?*



Web services: The business value

- Companies want to spend their IT dollars on people, software and services that directly make them more efficient, increase the value they can offer to their customers, and better differentiate them from their competitors.
- Web services distill the best integration practices of the past into a few technologies that can be widely and consistently implemented using modern Internet open standards.



Web services is a key technology IBM is using today via products like the WebSphere Application Server to help our customers become on demand e-businesses.

Web Services Technologies

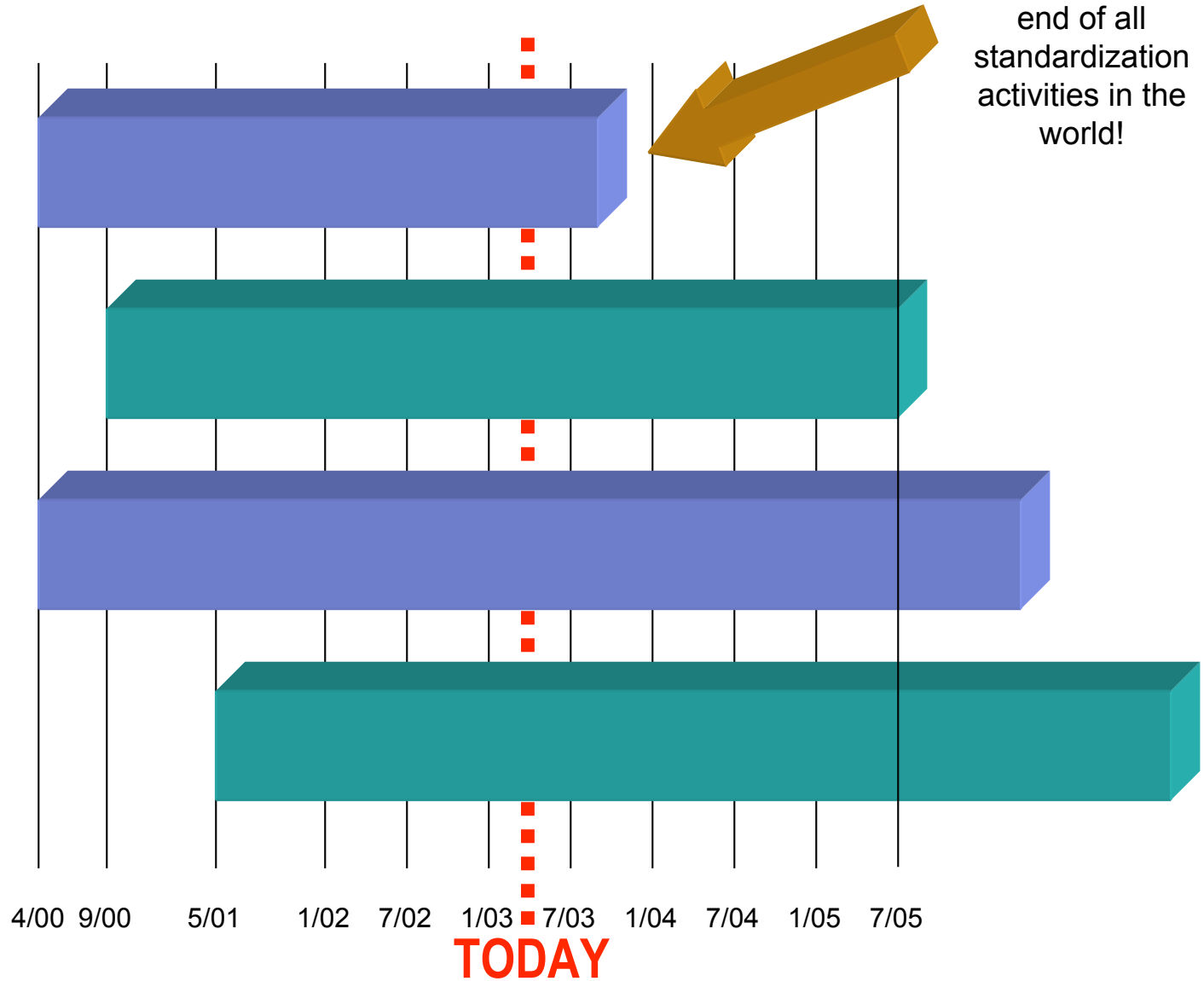
Abbreviated Web Services Chronology

Strategy,
architecture, and
first specs

Standardization
& Interoperability

First
Implementation

Product
implementation



What are the hot standardization areas today?

- **Security**
Standardization of WS-Security is well underway in OASIS, uncontroversial
- **Reliability**
Two new specifications and a Reliability Roadmap paper published March, 2003
- **Choreography and transactions**
Specs published August, 2002, convergence of work from IBM and Microsoft
- **Management**
Work is early stage, but good coordination among OASIS, W3C, GGF, and DMTF
- **Interoperability**
WS-I.org is the place to be and the work to watch.

Phase III: Enterprise

Management

Business Processes

Transactions

Phase II: Quality of Service

Reliability

Security

Phase I: Connection

Discovery

Publication

Description

Messaging

Join WS-I and insist that your vendors do as well



WS-I is an open, industry organization chartered to promote Web services interoperability across platforms, operating systems, and programming languages. The organization works across the industry and standards organizations to respond to customer needs by providing guidance, best practices, and resources for developing Web services solutions.

WS-I was formed specifically for the creation, promotion, or support of Generic Protocols for Interoperable exchange of messages between services. Generic Protocols are protocols that are independent of any specific action indicated by the message beyond actions necessary for the secure, reliable, or efficient delivery of messages; "Interoperable" means suitable for and capable of being implemented in a neutral manner on multiple operating systems and in multiple programming languages.

RECENT PUBLICATIONS

WS-Basic Profile 1.0 Approval Draft
February 12, 2003

WS-I Usage Scenarios
January 29, 2003

Supply Chain Management Use Cases
December 3, 2002

Supply Chain Management Sample Architecture
January 29, 2003

WS-I Overview
January 15, 2003

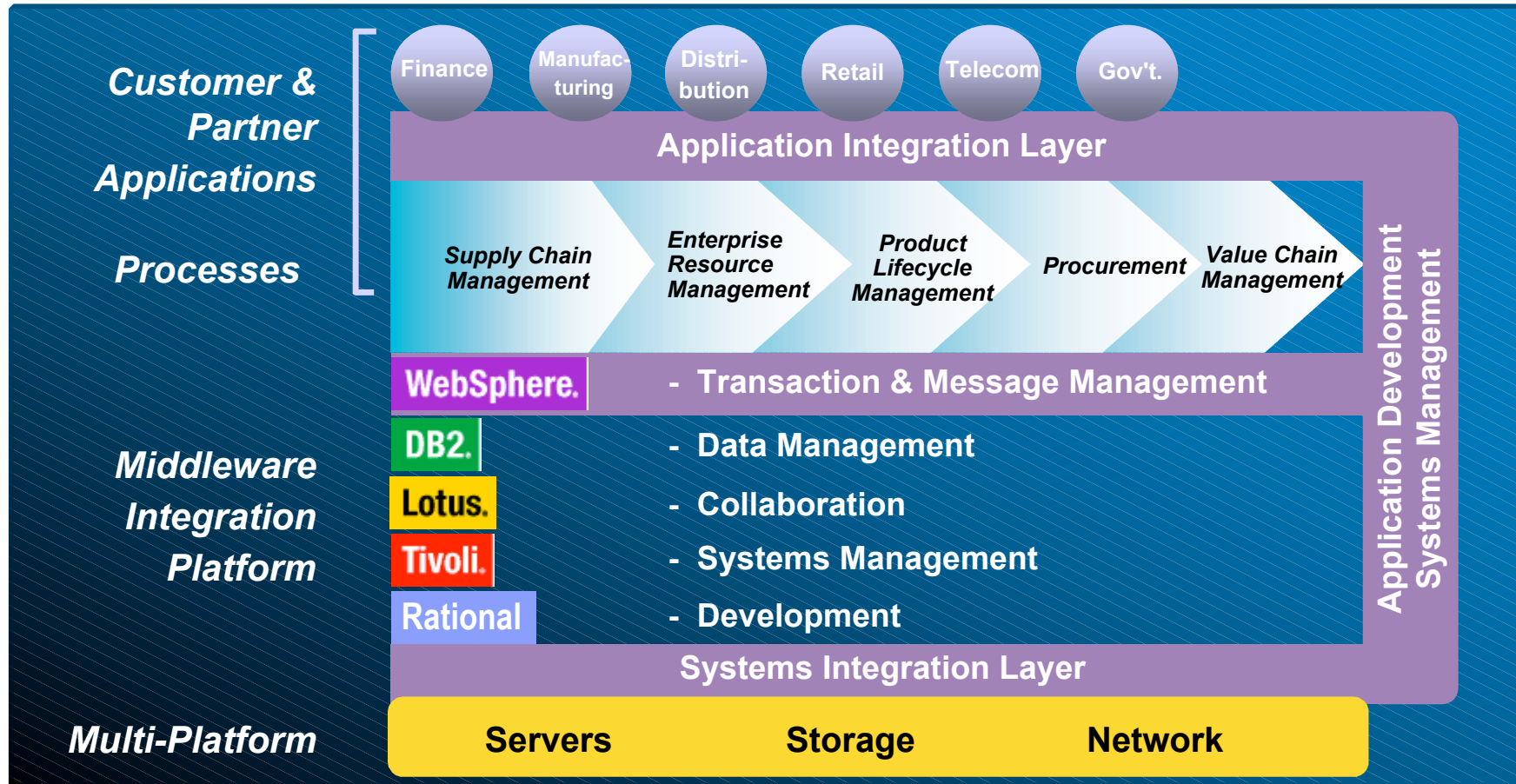
WS-I Introduction Presentation
October 17, 2002

[more documents and formats...](#)

"If you're an infrastructure player and don't buy into the WS-I group, don't even show up--we won't do business with you," Merrill Lynch CTO John McKinley said in reference to the Web Services Interoperability Organization ...

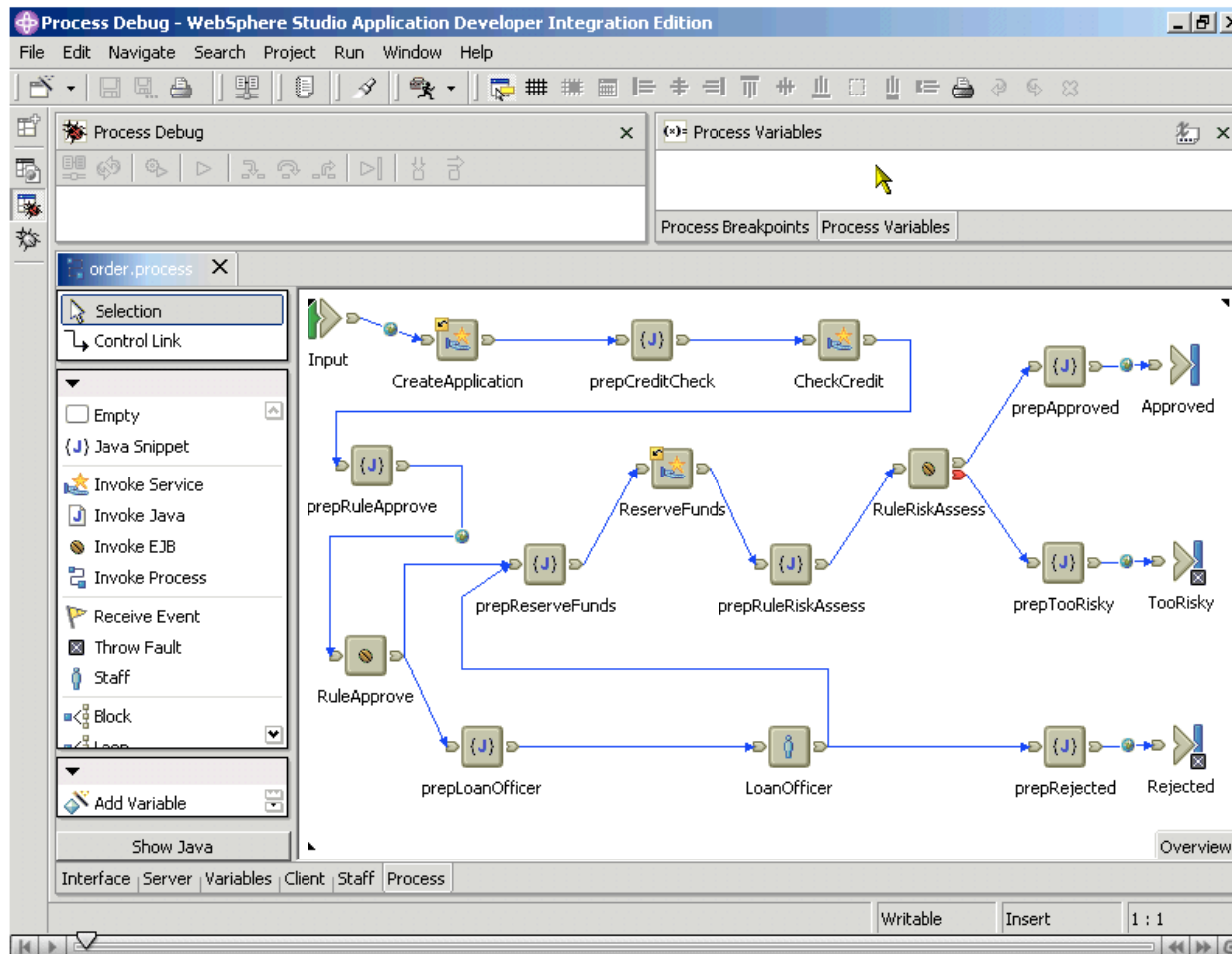
Web Services In IBM Software

IBM's integrated middleware for e-business on demand



Open standards-based Web services technology is an increasingly important part of how we are making this environment work.

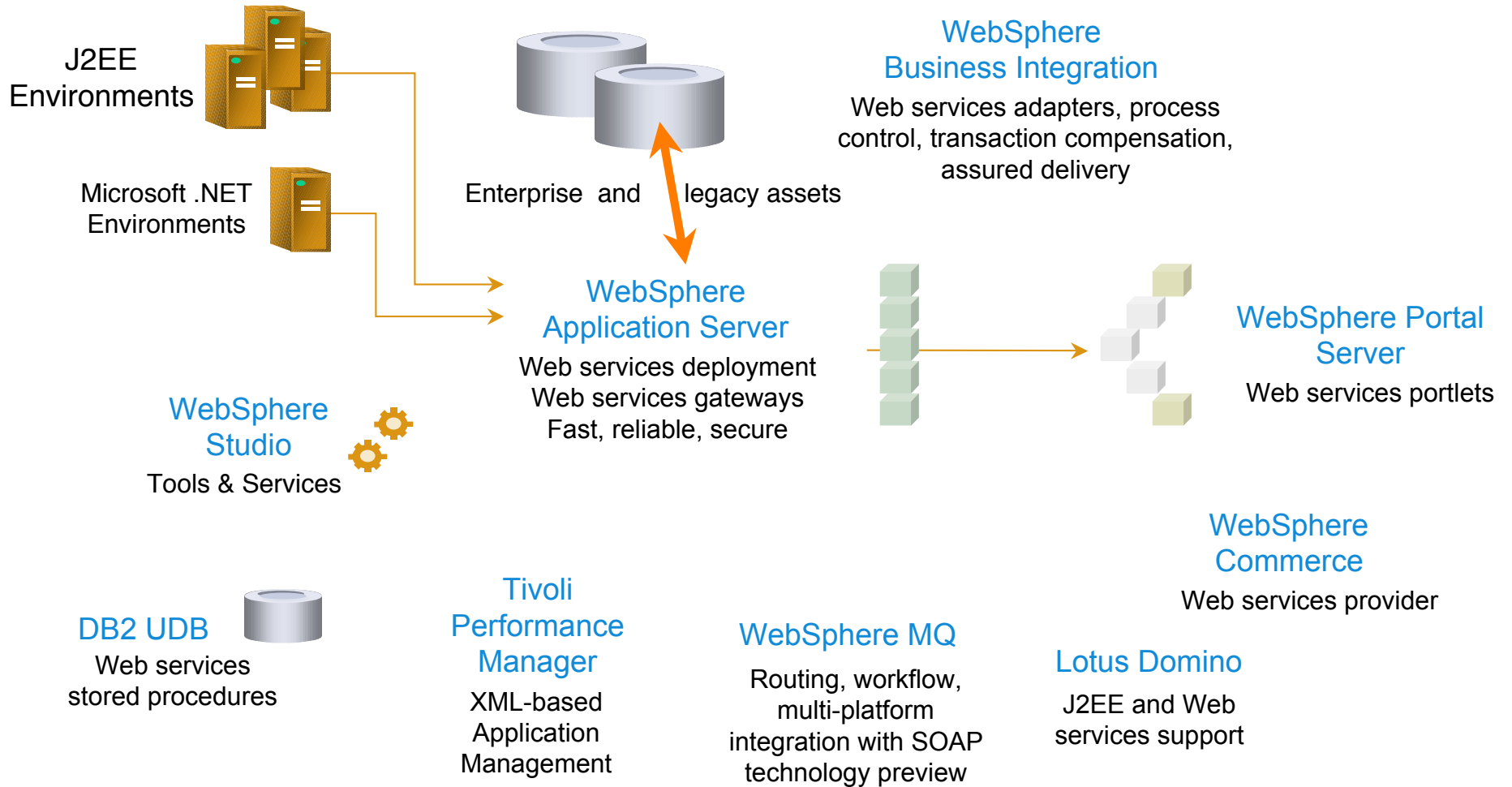
IBM WebSphere Studio Application Developer Integration Edition for Linux and Windows, V5



Offers a highly integrated application development environment for building workflows, J2EE artifacts, Web services and sophisticated application adapters based on Eclipse.

IBM's open, enterprise-ready Web services platform

IBM is providing the broadest Web services platform support in the industry



Leveraging Existing Investments

IBM CICS: 35 years old, and still growing

- Roughly 70% of the world's business data lives on IBM database servers, much of it accessible via CICS systems.
- Each day CICS systems process \$1 trillion worth of transactions.
- New CICS SOAP technology preview on IBM alphaWorks, free of charge, allows SOAP communication with CICS applications via HTTP or WebSphere MQ, thereby offering another way to communicate with the legacy COBOL and PL/I programs that run much of the world's business infrastructure.

Coming: Web Services support for IBM IMS Database

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IBM tipped as web services winner

By Ian Lynch in Barcelona [04-03-2003]



Microsoft second, Sun and HP a poor third, says Meta

Analyst group Meta has tipped IBM as the strongest player in the "brave new world" of web services.

Meta said that IBM had the clearest business vision, the simplest IT vision, the deepest research resources and the most experience of complex systems among the main players. It added that Microsoft is IBM's closest rival.

Analysts speaking at Meta's 14th annual forum in Barcelona indicated that rival vendors regard IBM as their most significant competitor, and that IBM is in "the best shape it has been in during the past 20 years".

Microsoft, Sun Microsystems and Hewlett Packard (HP) are also "market visionaries", although the analysts suggested that the latter two have more weaknesses than strengths.

Web Services: Get Started NOW

Things you need to consider

- Use pilot programs to help you understand the ROI for your particular company and configuration.
- Your world is likely to become increasingly heterogeneous, not less so, but that doesn't have to be a bad thing because of technologies like Web services.
- The combination of Web services and Linux is extremely potent and cost effective.
- Give yourself future leverage by starting to use Eclipse-based tools today – avoid proprietary tool bases if you want real interoperability that is not at the whim of a single vendor.
- Educate your executives as much as you educate your developers.
- Choose vendors and ISVs who understand all of the above.

We're beyond the point of a couple of pilot programs

ABN AMRO Bank N.V., [Advanced Technology Systems](#), Adobe Systems, Inc., [AgentWare, Inc.](#), Altio Inc., [AmberPoint, Inc.](#), ANADIGICS, Inc., [Asera, Inc.](#), ASU Solutions, Inc., [Australian Bureau of Statistics](#), Austrian Federal Ministry of Justice, [Automatic Data Processing, Inc.](#), Avinon, Inc., [Baltimore Technologies](#), B-Bop Associates, Inc., [Beans Factory](#), Beazer Homes, Inc., [The Bekins Company](#), Birdnest Software, Inc., [Blue Titan Software, Inc.](#), Bonndata GmbH, [Brain-Systems](#), BRZ GmbH, [Business Objects SA](#), Cacheon, [Canadian Imperial Bank of Commerce](#), Cape Clear Software Limited, [Centrala StudieStödsnämnden](#), CommerceQuest, Inc, [Con-Way Transportation Services, Inc.](#), Cranfield University, [Silsoe](#), Credit Union Electronic Transaction Services, [DaimlerChrysler Corporation](#), DecisionSoft Limited, [UK Department of Trade & Industry \(DTI\)](#), Deutscher-Stadte und Gemeindebund, [Digital Evolution, Inc.](#), digitalESP, Inc., [Dimension Data](#), DST Systems, Inc., [E2open](#), Ebyz, [Elsevier Science](#), Entrust, Inc., [Epicentric, Inc.](#), EvolveWare, Inc., [Extend Technologies](#), First Data Corporations, [Flamenco Networks](#), Grand Central Networks, Inc., [Hewitt Associates LLC](#), Hitachi Software Engineering Co., Ltd., [HostBridge Technology](#), IBM Advanced Internet Technology, [IBM Business Transformation & CIO Organization](#), IBM Global Services IT Group, [IBM Software Delivery and Fulfillment](#), Industri-Matematik International Corp., [Infravio, Inc.](#), Integrated Shipbuilding Environment Consortium, InterKeel, Inc., InterPro Global Partners LLC, iSOCO, IT Advisory Group, IT Frontier Corp., iTenol, Inc., Jarna, Inc., [J.D. Edwards & Company](#), J.P. Morgan Chase & Co., [KDDI Corporation](#), KDVZ Hellweg Sauerland, [Killdara Corporation](#), Kinzan, Inc., [Linkedwith GmbH](#), MedBiquitous Consortium, [Mercury Insurance Group](#), MicroDoc GmbH, [Mid-Comp International Pty Ltd](#), Mincom, [National Industrial Information Infrastructure](#), Nationwide Financial Services, Inc., [Nexaweb Technologies](#), NIIT, Ltd, [NTT Communications](#), Olex, [Online Insight, Inc.](#), ORIX Corporation, [Parasoft Corporation](#), Peregrine Systems, Inc., [Extricity, Inc.](#), Petrotechnical Open Software Corporation, [Photon Research Associates, Inc.](#), PointServe, Inc., [Primordial, Inc.](#), Prolifics, [ReadiMinds Systems & Services Pte Ltd.](#), Ricoh Technosystems, Co. Ltd., [Royal Dutch Shell Group of Companies](#), Sparkassen Informatik GmbH & Co., [State of New Mexico](#), State of Wisconsin, [Storebrand ASA](#), StreetLine Inc., [Talking Blocks, Inc.](#), Things Remembered, Inc., [Thor Technologies, Inc.](#), TIAN Software Company, Inc., [Timogen Systems](#), TransactTools, Inc., [Tripcentric Technologies Ltd.](#), UNC Health Care, [Usermagnet, Inc.](#), Vans, Inc., [Versata, Inc.](#), Visualize, Inc., [Wachovia Corporation](#), Wakesoft, Inc., WAND, Inc., [WebCollage, Inc.](#), WebV2, Inc., [Westbridge Technology, Inc.](#), XML Global Technologies, Inc.

IBM jStart References

Web Services Speed Start 2003

Educating developers to accelerate adoption and use of Web services

*Modeled on the
2002 Linux Speed Start Program
Provides low cost education for
developers and partners.*

■ Developer Web Site

Trial code, training and support to help you build and deploy Web services with IBM tools and middleware

“Tell Your Boss” kit

■ Web services Software Evaluation Kit

WSDK Tools & IBM software products

Web Services Boot camp & other tutorials

UDDI Registry for submit & test Web services

■ Worldwide Event Plan

50+ Technical Briefings

Hands-on Developer Workshops

Partner Briefings

More Info: visit <http://ibm.com/developerworks/webservices> and click on SpeedStart

Thank-you