Slide 1 - WEBSPHERE SOFTWARE FOUNDATION & TOOLS FOR DYNAMIC E-BUSINESS

- Welcome and thank you for attending today's IBM and (name of Business Partner)
 WebSphere Software Foundation and tools for Dynamic e-business seminar. My name is
 (name), and I will be reviewing the technology issues related to e-business from a
 business perspective, explaining why a broad platform architected on open industry standards
 is not only required but strategic, and how you can get started by building on your current IT
 investments.
- IBM has a very compelling story to tell with it's dynamic WebSphere offerings. In this seminar, you will learn how WebSphere Application Server and WebShere Studio are an important part of IBM's WebSphere software platform.

Slide 2 - Agenda

For the next (length) of time(#) hours, I will give you an overview of the WebSphere Foundation and Tools for dynamic e-business. The agenda for today will include:

- WebSphere Market Momentum
- The Road to Dynamic e-business
- WebSphere Software Platform The Pyramid
- WebSphere Application Server and WebSphere Studio
- Customer Highlights
- Summary
- Next Steps
- Questions and Answers

Slide 3 - Seminar Objectives

By the end of today's seminar you will know the following about IBM's WebSphere Application Server and WebSphere Studio:

- the stages of e-business adoption and how your needs can be addressed
- how WebSphere Foundation and Tools are a key component of the WebSphere platform
- how WebSphere Application Server and WebSphere Studio meet the needs of customers
- features, functions, and benefits of WebSphere Application Server and WebSphere Studio
- trends, directions, and future development for WebSphere Foundation and Tools;
- and how we can perform a business consultative assessment of your business to determine how WebSphere Application Server and WebSphere Studio would work for you

Slide 4 - WebSphere Market Momentum - 2001

- Now let's review WebSphere market leadership. We feel that the WebSphere momentum is REAL and that WebSphere is the most compressive e-business platform and the most rapidly growing e-business platform
- WebSphere has the broadest portfolio of Internet infrastructure on the market. According to Gartner Group, "... virtually no vendor has the depth and breadth of IBM's middleware." (Feb 01)

- IBM has invested \$1 billion in WebSphere over the last 3 years to expand our e-business portfolio
- In 2001, IBM WebSphere saw 150% growth in global customers, including over 9,00 business partners.
- Over 1300 (180% growth in certified Solution Partners) and 4700 trained Global System Integrator consultants worldwide are available to support WebSphere applications.
- +40% Growth in Business Partner Fulfillment of WebSphere Products
- +300% Growth in Business Partner Engagements at WebSphere Innovation Centers to 2.000+
- +330% Growth in Registered WebSphere Developers to over 600,000+
- +500% Growth in Downloads of Application Servers and Studio/Eclipse Tools to 300,000+
- In 2001, WebSphere's revenue grew 50% and WebShere has enjoyed 11 consecutive quarters of double-digit growth;
- and WebSphere revenue in 2000 grew 221% on UNIX and Windows NT

Slide 5 - What the Analysts are saying...

From an analysts perspective in 2001

- IDC "The prize for the most impressive growth was IBM...an astronomic increase in WebSphere usage...market dynamics support an increasingly bright future for WebSphere"
- Summit Strategies "... [we] expect IBM to leverage its many strengths to overtake BEA as the leading app server vendor..."
- Gartner "...[WebSphere] will threaten BEA as the #1 vendor ... enterprises looking for a comprehensive e-business platform should seriously look at IBM."

Slide 6 - The Road to Dynamic e-business

- Over the past year, IBM has done a lot of work trying to identify how customers have adopted e-business technologies. The time period analyzed was over the last five years, since late 1996-1997 to the present. To do that IBM worked with McKenna Group and some of our internal market research resources to interview over 21,000 customers.
- The result: there are six distinct phases in e-business adoption. There is an initial state of Web access with users just accessing the Internet to find information, not real use of e-business.
- The first real step of e-business is Web publishing, using the Web as a marketing channel for information about the company and/or its products, etc. and making that available to the outside world.
- The second phase is called e-business transactions, where external users, through Web applications, are allowed to connect to applications and data that were previously reserved for internal users. These transactions involve full update mode, full read/write modes and read only modes.
- The third step is where companies really start to focus more and more on internal integration, optimizing their internal processes making sure that as their processes become more visible to the outside world, that they become increasingly more integrated and more effective.

- That trend continues into phase four, external integration....the creation of value networks, which are external application integration points where companies work together with other companies to deliver more value to their customers than they would be able to do alone.
- Where IBM sees all this evolving towards is a model they call dynamic e-business. Dynamic e-business is a business model where a company can really focus on its core activity and outsource all surrounding activities in a dynamic fashion over the Internet...the ability for one application to communicate with another application function over an Internet network and leverage and integrate with that application function. Basically what we're seeing is a long-term trend towards Digital Businesses..the creation of increasingly more automated and more integrated business processes that are transforming the way business is done right now.

Slide 7 - Changing Technology Requirements

- What does all this "road to e-business" and "states of e-business adoption" mean from a "requirements for Web applications" perspective?
- Web applications will evolve from just doing static Web serving and e-mail with limited use of dynamic content into applications where there is increasingly more of a separation of business logic and presentation logic and higher degrees of transactional integrity and integration with databases or existing transaction systems. As we move into the phase of internal integration we see the need for applications that can coordinate transactions between different in-house applications, and this need evolves into the coordination of transactions between in-house and external applications. As we move into the world of dynamic e-business, there is a need for applications that can coordinate transactions between in-house applications and outsourced applications that are linked dynamically.
- We clearly see a trend towards increasingly intelligent transactions. Transactions that can coordinate resources across a variety of systems and that can be long lived, not just a couple of seconds, and can actually take weeks or even months to complete. They're also self-conscious. Transactions that contain decisions on business logic as to which external provider should be leveraged in certain scenarios, for example. Being able to develop these intelligent transactions will require much more integration work, tied together systems, applications, databases, etc., ..and all of this relies on a real solid e-business infrastructure for all of these transactions to perform appropriately.

Slide 8 - e-business Adoption

- Let's take a look at how e-business adoption stages will impact and determine what a Web application server needs to provide.
- The first generation of Web application servers were used as an interface between external users on the Internet, who, most of the time, were using a desktop or a laptop PC. This first generation of Web servers acted as front ends into existing transaction and data servers. Some new application logic was being developed on these Web application servers, but it was usually fairly limited.

Slide 9 - e-business Adoption

• As we move through the e-business adoption phases we eventually arrive at talking about requirements for a full e-business infrastructure, where users of any type (whether customer,

business partner, supplier or employee), using any type of device, need to connect through what we call edge servers into application servers. At these later stages of e-business adoption, the application servers have become much more specialized.

- You'll note there is now a separation between presentation servers and application servers. Even within the application servers we recognize different types of application functions... personalization, portals, support for mobile applications, e-commerce applications, collaborative applications. All of that tied together under a single directory and security server that controls access to all of these different applications and data servers.
- Of course, to ensure that all of these applications work together successfully, you'll need some degree of storage management and system management.

Slide 10 - The WebSphere Software Platform

- For companies that need a platform to build, deploy and grow an e-business, WebSphere's broadest portfolio of any platform, combined with IBM's heritage, integrity and global presence, make it the ideal, stable, long-term, e-business platform....and going beyond what any of our competitors have to offer in terms of the total functionality provided to meet all of the requirements for a comprehensive e-business infrastructure.
- Achieve greater scalability and productivity with Foundation and Tools.. For companies wanting to build a highly scalable e-business, WebSphere provides the most open, integrated and productive tools and middleware to build, connect and manage applications across the most diverse and demanding business environments...The WebSphere Foundation and Tools will be the focus of the rest of this presentation.
- Achieve lasting customer loyalty with Reach and User Experience .. Build on the Foundation
 to render e-business capabilities and content as a compelling, personalized user experience to
 any device. For companies needing to build lasting relationships with customers, partners
 and employees, WebSphere improves each user's interaction with your e-business by
 delivering personalized, role-based content, to any desktop or wireless device. Through its
 Commerce solutions, WebSphere also manages relationships and complex business
 processes while handling Business to Consumer (B2C) and Business to Business (B2B)
 transactions reliably and securely.
- Achieve business agility with Business Integration .. Build on the Foundation to design, integrate and manage back-end business processes enabling high business agility and significant cost reductions. For companies seeking to streamline business operations to improve business agility and flexibility, and control costs, WebSphere integrates and automates business processes, within the enterprise and with customers, business partners and suppliers.

Slide 11 - The WebSphere Platform Delivers

- As we step back and again review this evolution towards a vision of dynamic e-business, it's important to realize that a key element of being able to deliver on this vision is the ability to incorporate open standards and that there's also a very clear evolution in the types of open standards that are required.
- For Web publishing, HTML, HTTP, and derivative standards are required.

- Moving into the e-business transactions phase, there is more of a requirement to focus on the ability to perform transactions within a Web application and so the J2EE programming model is necessary
- As we continue to move into the internal integration phase, XML and its derivatives such as trading partner agreements, file sheets, etc. become increasingly important.
- Value networks and particularly dynamic e-business require standards that allow applications
 to talk to other applications in a dynamic fashion. We refer to these standards as Web
 Services standards SOAP (Simple Object Access Protocol), WSDL (Web Service
 Description Language) and UDDI (Universal Description Discovery and Integration). All of
 these standards are a key element of the WebSphere software platform. It is IBM's belief that
 by having a platform that is standards based, that we're able to deliver the best value to our
 customers in this market.
- With the WebSphere Application Server and the WebSphere software platform, IBM has been able to deliver on requirements for every phase on the road to e-business.
- To address the needs of the Web publishing market, IBM extended the core HTTP services by offering in 1997 an HTTP Server with Java capabilities.
- In 1998, IBM brought distributed transactions and tightly integrated application development tools and application servers to the market with the first release of WebSphere. Subsequent releases featured the integration of Enterprise Java capabilities, XML, and MQ Series messaging within the WebSphere Application Server base.
- In 2001, IBM delivered Web Services integrated in the WebSphere Application Server family so that customers can not only start to address the need for dynamic e-business, but also to focus on an easier way of doing internal and external integration.
- Additionally in 2001, IBM was the key contributor to open standards development and integration
- In December of 2001, IBM was the first major application server vendor to deliver a fully compatible J2EE 1.3 application server, with release of the WebSphere Technology for Developers.

Slide 12 - WebSphere Application Server Version 4

- Now we will continue our discussion by covering details on what's new with the foundation of the WebSphere platform, WebSphere Application Server Version 4.0.
- Specifically, how does this application server family meet the needs of customers on the road to e-business and how customers can grow seamlessly as their business requirements my change in response to the highly dynamic marketplace.
- We will also discuss how IBM leads in the implementation of Web services and how we can maintain the best of breed infrastructure to enable intelligent transactions.

Slide 13 - WebSphere Application Server Version 4.0

- IBM has been offering a number of editions of the Application Server to meet different needs. Customers have told us that they like the choice but are looking for more seamless migration across technologies as their requirements change and they grow.
- The key element to understand about the WebSphere Application Server Version 4.0 family is that it is evolving from a product line into a single product that can be tailored to meet

different requirements. We need to take a quick look at how we have evolved from Version 3.x.

- If you look at the Application Server Version 3.x offerings that have been available since 2000, you can see there are really four different versions.
- WebSphere V3.x Standard Edition addresses the needs of the entry-level market supporting Java server pages and servlets.
- WebSphere V 3.x Advanced Edition adds to that the support for Enterprise JavaBean. It also
 adds high availability and high performance characteristics such as work flow management
 and clustering support.
- WebSphere V3.x Enterprise Edition is really a very different type of server. It is a CORBA based distributed object transaction monitor to which we have added a Java interface. It also includes TX series for those customers who are looking at a distributed transactional model supported by CICS.
- With WebSphere Application Serer Version 4.0, IBM has redesigned the application server line to be based on a single Web services-enabled J2EE runtime. Now IBM can add or subtract sets of services to this core technology to deliver the choices customers want based on their needs, and provide a completely seamless growth path at the same time.

Slide 14 - WebSphere Application Server Version 4 Configurations

- Now that we have explained how Version 4.0 is a single technology base, lets look at the configurations we are offering. This is an overview of the configurations in the market for the WebSphere Application Server Version 4.0 family.
- We will continue to offer Advanced, Enterprise and z/OS editions of the WebSphere Application Server.
- The heart of this family is a single technology code base which is essentially an evolution of our Advanced Edition server. It contains the full J2EE and Web services programming model. It supports advanced quality of service implementations like full distributed workload management and clustering capabilities.
- We have introduced a single server configuration of the server...called Advanced Single Server Edition. The focus of this single server configuration is really on rapid deployment with fewer prerequisites and a much smaller footprint. The target market is standalone or departmental applications and small or medium type business applications. Customers and web integrators who have previewed this product have told us they think it a very competitive option for departments, small and medium businesses as well as for pilots for larger multi-server deployments.
- This single server configuration provides J2EE and Web services functionality in a single runtime process. This configuration appeals to businesses that need to build stand-alone or departmental applications that are transaction- or message-oriented, and that don't require failure bypass, workload distribution, or remote administration.
- Ideal for a single department, this configuration installs quickly and easily with no database
 prerequisites. It features a browser-based administrative console to enable easy installation
 and management of single server usage scenarios, including development, staging, and
 stand-alone department solutions. It is limited to a single machine and can not be used on
 separate servers beyond the single machine.

- It features the same Web services and J2EE run time as the full advanced edition. It does not support clustering or workload management. Its administration is browser based ...this XML file-based administration console provides for extremely fast out of the box installation, and excellent performance and easy administration of single server multi-processor applications.
- The single server configuration option is also available as a development only configuration (called Advanced Developer Edition) that extends the WebSphere Application Server family with a low-priced configuration to meet the needs of individual e-business developers and allows developers to test applications on WebSphere. It is functionally equivalent to WebSphere Application Server Version 4.0, Advanced Single Server Edition, except that its license agreement excludes production usage. It can be used for internal evaluation and for the development, demonstration, and testing of applications only. Although it can not be used for production purposes, applications developed with Advanced Developer Edition can be deployed with WebSphere Application Server Version 4.0 Advanced Single Server Edition. This configuration is available, via download, at no charge..so, a free license allowing any developer whether they're a current WebSphere user or not, to take their application, test it with this development only configuration and if they decide to deploy it, they can move up into the single server edition.
- WebSphere Application Server Enterprise Edition adds functionality to Advanced Edition both in terms of quality of service and in terms of extensions to the programming model that really meet the requirements of enterprise level applications. Enterprise Edition now with Version 4, for the first time includes the same runtime and then builds on that base with a set of enterprise services that increase the functionality and qualities of services to meet the needs of the most sophisticated e-businesses. TXSeries, a mission-critical transaction processing system is also included in Enterprise Edition.
- We also have our premier version of WebSphere Application Server available. That's WebSphere Application Server Version 4.0 for z/OS and OS/390. It contains the same programming model with the enterprise services that are part of Enterprise Edition, but offers even greater degrees of availability, scalability, performance, and security through its tight integration with z/OS and OS/390 and its exploitation of the Z series and system 390 hardware capabilities. It has extremely high availability and exploits workload manager and parallel syxplex..to name a few.
- You may ask: What has happened to Standard Edition? IBM has increased focus on the needs of entry level customers. Based on market feedback, IBM has begun a significant revision of its entry level application server that will be announced with the next version of the WebSphere Application Server.

Slide 15 - Enterprise Edition - Strategy

- Let's focus a bit more here on WebSphere Application Server Enterprise Edition
- The strategy for WebSphere Application Server Enterprise Edition is to add the capabilities that are required for the high end of the market.
- This includes the ability to create EJB applications, which can be dynamically configured and rapidly changed depending on the business process. We call this accessible business rules. It has the ability to create sophisticated processes and distributed transactions that can do a two-phase commit either across synchronous or asynchronous environment or across both, ultimately including coordination of other TP monitors like CICS and IMS.

- There are enhancements for quality of service such as the inclusion of a full CORBA C++ stack, integration with CORBA ILP environments, integration with Active-X or COM Plus environments, and the support for large distributed environments with over 50 nodes in a cluster.
- The other elements we're adding to the program model are the support for Rich Media Bean and the support for internationalized business processes by allowing all of this to be kept out of the EJB itself.

Slide 16 - V4 for z/OS and OS/390: At a Glance

- Let's also take a further look at WebSphere Application Server Version 4 for z/OS.
- Here is an overview of the key capabilities we've built into WebSphere application server version 4.0 for z/OS and OS/390.
- Like the other members of the version 4.0 family, it provides a full breadth of services for a J2EE compliant application server and includes Web services API. It is functionally equivalent to WebSphere enterprise edition and it focuses more on a two-tier type of configuration where you have both your application logic and your existing data and transactional logic sitting on the same application on the same physical server box.
- The core strength is integration with data from heterogeneous back end systems with a range of connectors to CICS, IMS, DB2, and MQ. This integration also happens with full transactional integrity.
- What are some of those unique QoS characteristics?
- V4 for z/OS also supports the same tool and platform as the other WebSphere application servers and its implementation
- V4 for z/OS takes full advantage of all benefits of z/OS and Z series and offers some unique quality of service characteristics. It's built from the ground up and it supports full exploitation of the z/OS and OS/390 workload manager and parallel sysplex.
- - Parallel Sysplex Exploitation: multiple S/390 systems appear as one for scale and availability, routes transactions to all available nodes in Sysplex
- - Work Load Manager Exploitation: automatic, dynamic, goal oriented routing of work, optimizes resource utilization across multiple servers in a sysplex
- - Automatic Restart Manager: fast, automatic restart recovery of servers.
- - Integrated distributed transactional capability through Resource Recovery System (RRS).
- - Integrated security through the System Authorization Facility.

Slide 17 - WebSphere Technology for Developers

- In December 2001, IBM announced the latest release of WebSphere® Technology for Developers, which is designed to enable developers to gain experience creating and testing Java TM 2 Enterprise Edition (J2EE) 1.3 applications on WebSphere®.
- Q: What is WebSphere® Technology for Developers?
- A: WebSphere® Technology for Developers is the first release of the platform technology that will be included in the next version of the WebSphere® Application Server. This product enables developers to gain experience with a preview version of upcoming new technology, specifically the JavaTM 2 Enterprise Edition (J2EE) 1.3 programming model, so they will be able to quickly leverage the full production WebSphere® Application Server

when it becomes available. WebSphere® Technology for Developers releases are part of IBM®'s continuing effort to get new technology into the hands of developers fast. Other publicly available technologies include code on alphaWorks (http://www.alphaworks.ibm.com) and beta and generally available products on WebSphere® Developer Domain (http://www7b.boulder.ibm.com/wsdd/)

- Q: How does this product compare with competitive offerings?
- A: With this new release of WebSphere® Technology for Developers, IBM® is the first major vendor to offer an application server featuring J2EE 1.3 compatibility including JMS support beyond what the competition can provide today (reference JMS information provided in answer to next question). The previous release of WebSphere® Technology for Developers (March 2001) was the first product in the industry to integrate Web services specifications and extend the J2EE environment. IBM® also just launched the premiere full-function application development workbench open source initiative, Eclipse.org. In addition to broadly contributing to and supporting open standards, the IBM® WebSphere® Application Server product team continues to garner recognition as the best implementor of these standards.
- Q: How can I get this product?
- A: WebSphere® Technology for Developers is available for web download at the Evaluation Center which is part of WebSphere® Developer Domain. To reach WebSphere® Developer Domain's Evaluation Center, visit the following url: http://www7b.boulder.ibm.com/wsdd/downloads/techpreviews.html
- Q: Is there a charge associated with this product?
- A: There is no charge for WebSphere® Technology for Developers
- Q: How is this product supported?
- A: IBM® will provide online forum support for WebSphere® Technology for Developers that is monitored by IBM® technical experts. This forum is an opportunity for product users to share information and feedback with each other.
- Q: What are the key features of WebSphere® Technology for Developers?
- A: This new release of WebSphere® Technology for Developers is compatible with the most current J2EE 1.3 specification. The enhancements in this new version of J2EE continue to build on the fundamental value propositions of J2EE: simplified business integration; simplicity of development; and freedom of choice.

Simplified business integration:

- J2EE Connectors facilitate easier integration with existing heterogeneous systems including back-end applications, such as Enterprise Resource Planning (ERP) and Customer Resource Management (CRM) systems.
- Java Message Service (JMS) API and Message Driven Beans: Java APIs allow applications to create, send, receive and read messages without requiring the sender or receiver to be available at the same time (asynchronously); message driven beans provide a component model for messaging. WebSphere® Technology for Developers offers full support for JMS

1.2 for enterprise-ready messaging, including a JMS technology-compliant messaging system based on the integration of a lightweight variant of IBM®'s WebSphere® MQSeries® compatible product. MQSeries® offers capabilities only available in a mature product that has been in the marketplace for over 9 years.

Simplicity of development and freedom of choice:

- Enterprise Java Beans 2.0 (EJB): EJB architecture now incorporates new container-managed persistence, which dramatically simplifies the development of distributed applications; required Internet Inter-ORB Protocol (IIOP) interoperability facilitates communication between application servers from different vendors.
- Increased XML Integration: An essential part of Web Services, XML integration is enhanced with the Java API for XML Processing (JAXP) and the ability to write and manipulate JavaServerPages (JSP) technology in XML.

JSP Framework and Servlets: Java servlet filters are web components that support the application of multiple context-based transformations and enable access from a variety of client devices; JSP 1.2 allows XML tools to create JSPs.

Q: How can developers use this product?

• A: Developers can test J2EE 1.2 or 1.3 applications -- including applications from other vendors or applications they have built themselves that take advantage of JSP 1.2, Servlet 2.3 or EJB 2.0 specifications. They can also build new applications that implement the latest Web services APIs including SOAP and UDDI4J. The flexibility of WebSphere® Studio Application Developer, which is based on JDK 1.3 (J2EE 1.2) allows developers to build Java applications that run on WebSphere® Technology for Developers.

IBM® WebSphere® Technology for Developers enables developers to create the next generation of applications incorporating the latest. Web transaction and integration technologies . It provides a portable, Java-based Web application development and test platform focused on supporting and executing Java Servlets, Enterprise Java Beans, Java Server Pages, and XML services while interacting with databases, dynamically changing content and other applications for dynamic web content. It builds on the HTTP Server to provide the portability and high performance of server-side business applications along with the flexibility of XML data services to offer a comprehensive XML enhanced Web application platform based on Java technology.

Q: What tools can developers use with this product?

• A: WebSphere® Studio Application Developer and other J2EE development tools can be used with WebSphere® Technology for Developers.

Slide 18 - WebSphere Application Server 4.0 Packaging

Here' a summary of what is currently available with WebSphere Application Server Version 4.0 and associated pricing.

CONFIGURATION OPTIONS

- - Advanced Edition in three configurations; Single Server Edition, Developer Edition, and of course the full Advanced Edition.
- -Enterprise Edition.
- z/OS and OS/390.
- -We will continue to have a WebSphere Technology for Developers preview. This is really not a single release product. It is a full program, which we will use to bring early technologies that we are planning to incorporate at a later stage into the production level versions of the WebSphere application server. At times we may decide to make these new technologies available to developers early on so they can get some experience with these functionalities. The current Technology for Developers has been recognized by Sun as fully J2EE 1.3 compatible.

PLATFORMS

 -We continue to support multiple platforms ranging from Intel based platforms such as Windows or Linux to Solaris, HP-UX,AIX, and then our OS/390 and OS/400 operating systems.

GENERAL AVAILABILITY

• -All WebSphere Application Server Version 4.0 editions and configurations are currently available.

PRICING

• - we've introduced a new pricing option with WebSphere Advanced Edition single server, which is priced at \$8,000 per CPU, and WebSphere Advanced Edition with its full workload management and clustering support is priced at \$12,000 per CPU. The pricing for WebSphere for z/OS and WebSphere Enterprise Edition is at \$35K per CPU. As already mentioned, there is no charge for the download of Advanced Developer Edition (includes 60 day online support) or the Technology for Developers. Advanced Developer Edition is also available for order with software maintenance, including subscription and support, via Passport Advantage for \$599. Similarly, there is a development runtime for Enterprise Edition that is available for order with software maintenance, including subscription and support via Passport Advantage for \$2999.

Slide 19- Version 4.0 Technology Highlights

- To summarize, here is how IBM has enhanced the overall WebSphere Foundation with the new technology capabilities delivered in WebSphere Application Server Version 4.0.
- We now support full Web services with SOAP, UDDI, WSDL, full XML support, and are fully compatibility with J2EE 1.2.1. That includes robust technology for integration and transaction support.
- In addition to what is standard in J2EE 1.2.1, we're also including some expansions like support for the JCA, Java 2.0 connectivity framework. JCA is a key element to be compatible with J2EE 1.3 So, with WebSphere Application Server Version 4.0, IBM is delivering partial J2EE 1.3 support.

- Through WebSphere Application Sever Enterprise Edition we're adding support for CORBA environments, Active X clients, and we have expanded database support throughout the entire platform, specifically improved support for MS SQL Server, Oracle 9i, Informix, Sybase.
- We're also adding support for Message Beans and JMS Listener, which is a key element of EJB 2.0, providing integration of messages and EJBs.
- We have some expansions available to the EJB specification specifically
- - extensions for internationalization, which allows applications to intelligently adjust for client specific or local specific information like time zone, currency, language, or simple things like date format, date, month, year format, etc. Internationalization counteracts the standard procedure in which the server enforces its locale on the application. This internationalization service is unmatched in the industry.
- -we're also now offering the ability to separate out the business rules from within the EJB. You'll have the ability to dynamically update the business process as it is incorporated within the application without really the need to go in and code this at the EJB level itself. Business rule beans directly extend the J2EE programming model.
- -we're also introducing Business Process Bean technology as a preview. That's the ability to coordinate business processes and provide compensation logic in the event of failures.
- Other enhancements are provided as well. These include caching of dynamic content, expanded database support, enhanced security, improved workload management and session management, resource analysis and performance tuning functions, simplified problem determination, greater flexibility with respect to configurations, improved integration with Tivoli, and increased scripting capabilities

Slide 20 - Total Cost of Ownership

- WebSphere Application Server is also the leader in lowest total cost of ownership (TCO).
- One of the factors that often gets overlooked when evaluating web application server
 solutions across different vendors is a comparison of overall solution costs. No total cost of
 computing picture is complete without considering the manner in which the overall solution
 will be deployed (e.g. all components running on the same server, or distributed across
 multiple servers). The deployment model not only has an impact on initial software (and
 hardware) acquisition costs, but can affect ongoing support/maintenance charges as well.
- We recently performed a study comparing the Total Cost of Ownership (TCO) characteristics between IBM and BEA for several selected solution configurations over a three-year ownership period. Elements included in this TCO comparison included all hardware, software, and maintenance charges for a given configuration. The specific configurations selected for evaluation included both single-tier and multi-tier deployments and generally represented some of the most popular implementations of actual production websites in use today by both small and large customer environments.
- The results for 5 typical configurations indicate that IBM provides a lower TCO against BEA, regardless of the configuration. The cost of the IBM Solution ranged from 74% to 93% of the corresponding BEA solution.

Slide 21 - Major Influencers on TCO Pricing

- One of the primary reasons for the cost differential across all configurations is due to software support and maintenance. IBM has moved towards a single maintenance offering that includes support (basic 5x9 coverage) as well as maintenance (annual subscription service that includes upgrades). This new offering is priced at 25% of the software OTC (One Time Charge) license fee for non-390 systems. BEA, on the other hand, charges either 20% or 28% for support only, with the rates dependent upon coverage type (5x12 and 7x24, respectively).
- Also, BEA has no maintenance program to handle upgrades. According to the Branham Group, version-to-version upgrades typically require the customer to acquire new licenses, with modest discount levels generally tied to special promotions. For the purposes of our TCO calculations, we estimated these maintenance charges to be similar to the IBM model: 20% of the software OTC license fee for each year. With historical precedent suggesting that BEA makes a new release of their WebLogic Server available once every year, this correlates to an 80% discount rate on new upgrades. We believe this figure to be extremely conservative.

<u>Slide 22 - WebSphere Application Server - The Proof</u> Hewitt Associates

- Customer references are the ultimate proof of WebSphere Application Server leadership in the marketplace...we have several here to discuss with you.
- Hewitt Associates has effectively implemented a B2B application allowing their client customers to access investment assets information using J2EE, XML, and OFX (Open Financial Exchange) standards with WebSphere.
- Their rapid deployment in five months and the robust nature of the application have given them competitive advantage.
- It performs well real time, and maintains tight security
- Hewitt worked with Business Logic Corp to speed the implementation.
- With the base application running, they estimate that time to market for similar applications at a month.
- DETAIL:Hewitt is a company that does consulting on human resources practices and offerings at a global level. Their customers are very large global companies such as IBM and many others. They manage over \$300 billion in retirement funds for their 150 clients.
- What they're doing is allowing their customers to directly link their own internal human resources side into the Hewitt system so that they can do calculations, simulation, etc. seemingly within their customer's internal HR side, but actually those simulations/calculations are leveraging the applications that Hewitt is running.
- They are accomplishing this by leveraging the open standards technology in WebSphere Advanced Edition. They are defining Web services that can be called from their clients. Using this technology has allowed them to deliver this capability to their customers much quicker (total project time was under 5 months) than they would have been able to do otherwise.
- PROOF: As you can see from the quote, Hewitt's estimate is that if they had not used WebSphere Application Server the cost and the time to do the same thing from scratch would have been double.

Slide 23 - Charles Schwab

Charles Schwab

- In 3Q 2001 IBM signed another ELA for AIM products w/ Schwab for next 3 years which includes WebSphere app server, VAJ & WSAD, some EdgeServer and MQSeries, etc.
- Schwab is officially "dual vendor" account, e.g. IBM WebSphere and BEA WebLogic Server, where WLS runs in institutional part of the business
- As of end of 2001 Schwab is satisfied w/ WS and strategically committed to IBM and WS
- IBM piloted mission critical support w/ Schwab with lab advocate, enhanced PMR tracking, etc.

Slide 24 - eBay

eBay

- "eBay undertook a three-month due diligence effort. We looked at all the application server
 players and did a quantitative and qualitative analysis. This is cornerstone technology for
 V3—the next generation eBay platform"... chosen WebSphere. Chuck Geiger, eBay, VP of
 Technology Strategy
- Listen to Chuck Geiger on why eBay chose IBM WebSphere. The audio clip is available at: http://www.ibm.com/software/info/websphere/media/Chuck Geiger.asf

Slide 25 - WebSphere Application Server Version 5

- The WebSphere Application Server product family has evolved to a single, deployment-agile application server providing universal application and integration foundation services.
- WebSphere Application Server V5 is a single, deployment agile Web services-enabled J2EE offering supported by an integrated development environment and an array of optional high value platform solutions, such as portals, process management and wireless.
- WebSphere Application Server V5 provides customers with the industry's broadest functionality within a common open standards programming model and compelling configuration and deployment flexibility, including single server, networked and extended network deployment options.

Slide 26 - WebSphere Application Server Version 5

- Recognizing that different levels of application server capabilities are required at different points in time as different e-business application scenarios are pursued, IBM is offering two additional configurations of WebSphere Application Server V5 optimized for high ROI within specific usage scenarios:
- There is (1) a configuration offering extended integration capabilities for sophisticated cross-enterprise usage scenarios, and (2) a configuration geared to those who need to "get started quickly" with e-business.
- There is also a unique configuration, WebSphere Application Server for z/OS, that is specifically tailored for the z/OS platform it is not a port of the core application server, but instead built from the ground up to take advantage of the z/OS and zSeries qualities of service.

Slide 27 - WebSphere Application Server Version 5 - Functionality

Here's more detail on the function provided by the flexible configurations:

- An enhanced configuration, Enterprise, offers a superset of capabilities over and above the core J2EE and Web Services application server. This configuration provides a more sophisticated J2EE-based and Web Services-based application adapters and application gateways.
- WebSphere Application Server Enterprise meets the needs of more sophisticated cross-enterprise usages typically requiring advanced build-to-integrate capabilities such as advanced application adapters, application flow composition and choreography, extended messaging and dynamic rules-based application adaptability and internationalization.
- An entry configuration for "getting started quickly", WebSphere Application Server Express, is being introduced a lower cost, easy-to-adopt application server configuration with an integrated development environment (tooling) to meet the requirements of small to medium e-businesses and departments within larger enterprises. As e-business requirements change, there is a smooth migration path to the greater functionality and higher qualities of service offered by the other configurations of the application server.
- WebSphere Application Server Express provides customers and partners who have limited resources and skills with an easy-to-adopt, express on-ramp to building and deploying e-business applications and dynamic web sites leveraging existing back-end resources. With features such as near zero installation and administration, extensive application samples and an integrated development environment optimized for non-Java programmers, productivity and time-to-market for new applications will be significantly improved.
- WebSphere Application Server for z/OS, offers all the functionality of the core J2EE and Web services application server with a subset of the Enterprise capabilities. This configuration, specifically tailored for the z/OS platform, takes advantage of the z/OS and zSeries qualities of service, such as parallel sysplex exploitation, advanced scalability capabilities, and intelligent workload management.
- WebSphere Application Server for z/OS meets the needs of enterprise customers requiring the benefits of the J2EE platform coupled with the robustness of the zSeries hardware and software.

<u>Slide 28 - WebSphere Application Server Version 5 - Network Deployment</u> Options

- There are 2 additional price points,..two additional deployment options for the core configuration of WebSphere Application Server V5.
- For comparison purposes we will call these ND (Network Deployment) and XD (Extended Network Deployment)...n.b. these acronyms are not official names.
- WebSphere Application Server offers deployment flexibility to meet needs for stand-alone, multi-server distributed (ND), and highly dynamic decentralized distributed enterprise environments (XD) - providing different levels of distributed security, clustering and scale, performance benefits, directory support, and qualities of service for transactional application deployment environments.

Slide 29 - 2001 Scorecard - Technology Priorities

- We have just discussed where WebSphere Application Server is headed with Version 5.
- The best way to summarize this section is to review what we have delivered during 2001.
- The 2002 scorecard line items will show that WebSphere Application Server is defining, delivering and becoming the recognized leader in the following areas:
 - 1. Integration including Web services
 - 2. Open application development environment delivering superior productivity for the entire development team
 - 3. Qualities of services including performance, Edge of network services and Grid computing
 - 4. Post-deployment services including management and security
 - 5. Ease of use through entire purchase/development/deployment cycle

Slide 30 - WebSphere Studio

• Now we will begin our discussion on IBM WebSphere Studio...

Slide 31 - WebSphere Studio - Improved Developer Productivity

- Now we will move the discussion to WebSphere Studio, IBM's recent eclipse announcement and the value that an open integrated development environment provides.
- Along with the new WebSphere Application Server Version 4.0 family, in 2001 IBM announced and delivered new versions of their development tools. We will be giving a preview of what IBM's strategy is for future development environments.
- Looking at the current offerings WebSphere Studio because of the tight integration with the WebSphere Application Server and the entire WebSphere software platform, they really are indeed a prime development environment for these run time services.
- Within WebSphere Studio, we're also providing the industry's first application development environment that's completely enabled for Web services.
- In November 2001, IBM announced the WebSphere Studio Workbench a release of their development tools that is an open source application development integration platform, enabling integration between different development tools from different vendors in a way never thought possible.
- IBM will be taking part of their WebSphere Studio technologies and making them available through this open source platform.
- IBM has also delivered the first releases of WebSphere Studio Application Developer, an integrated development environment built on top of the open source workbench.

Slide 32 - WebSphere Software Platform

$\underline{Developers,\,Developers,\,Developers}$

This is where the value is...

- IBM truly offers a comprehensive integrated development environment.
- By partnering with other companies, by delivering a select number of best of breed tools ourselves, and making sure that all of these tools are integrated, we're really able to address all of the requirements that exist throughout the entire application development life cycle.

- Add to that the broad support for different middleware such as the application server, and all of the elements of the WebSphere software platform and the broadest platform support in terms of the operating systems we can deploy these applications on.
- Add to that a growing developer community, which we've nurtured through specific developer oriented programs such as WebSphere Developer Domain ... WebSphere 2001 conferences and an abundance of education and training available.
- Add to that our support and our commitment to open technologies and you truly get the development environment that is able to meet the requirements of any development project.

<u>Slide 33 - Application Development is the Key to Unlocking Dynamic</u> e-business

- Accelerating the development of high quality applications means:
 - not only rapidly integrating emerging technologies to make business processes more efficient but also managing their affect on the development process
 - creating a flexible team development environment
 - supporting specialized development for a broad mix of middleware
 - and a growing diversity of developer roles and interdependencies

Slide 34 - Open and Integrated Application Development

- Turning to IBM's support of a comprehensive development environment, in November 2001
 we announced two solutions targeted at unlocking the full power of open, e-business
 platforms and open development integration platform, Eclipse, and IBM WebSphere
 Studio, our comprehensive development environment built on this platform
- We have spent the last 5+ years participating with the industry to create an open server platform to fully leverage the potential of this open, software infrastructure (a.k.a. Middleware), we saw that we must significantly improve the productivity of all members of the development team while also increasing application quality and performance
- Integration of best-of-breed tools in a seamless environment that also integrates the middleware test environment is a key to enabling this significant productivity and quality gain

Slide 35 - Open Technology Leadership

- The WebSphere Studio partner program is not the only action we are taking to grow the community supporting this new, open development platform
- IBM has clearly demonstrated our strong commitment to open technology leadership through our contributions to, and support of:
 - the Linux operating system
 - the Apache Web server;
 - J2EE (Java 2 Enterprise Edition);
 - Web services technologies such as SOAP (Simple Object Access Protocol), UDDI (Universal Description, Discovery, and Integration), WSDL (Web Services Description Language) and WSFL (Web Services Flow Language)

Specifically IBM has:

• > 2000 employees participating in standards organizations

- > 200 products that support these open standards
- > 2000 employees involved in open source projects
- > 5000 employees involved in developing Java technology and XML
- \$1B investment in Linux including support across the entire eServer family

And we are now continuing our support of open technologies by establishing the first application development platform to fully embrace open technologies

- supporting open development technologies such as the CVS repository (Concurrent Versioning System), the Ant Java-based make facility for automated software builds, Rhino JavaScript, and Xerces XML parser
- and by contributing the platform itself to the open source community at Eclipse.org
- This platform represents \$40M of IBM development investment

Slide 36 - WebSphere Application Development

- Here is an overview of what we're bringing to market for Application Development.
- First of all, we're offering a very flexible and extensible tools environment. We support the full application development life cycle as detailed in the chart and the graphic on the right ranging from business process modeling to application and data modeling to actual data and code development, maybe some business rules type of development with quality assurance, requirements management, and of course having a repository both for Web and non-Web content.
- The way we're delivering on this is by leveraging third party tools that are complementary to our offering, not just by trying to do everything ourselves. for example by integrating our capabilities with iRAD, offering rapid application development capabilities

We also support

- - an integrated open programming model with open industry standards,
- - rapid support for new technologies such as Web services or for mobile technologies and voice technologies.
- There's very tight integration with the WebSphere software platform. This integration is really a key benefit as we are able to greatly increase developer productivity from this tightly knit integration between the development and runtime environments. Let's look at this further..
- ---If you think about a simple testing scenario, where a developer writes an update to some code and then has to export it and deploy it to an application server before he can actually do the test....this is something that takes a lot of time. Having the ability to do this testing within the developer tool itself saves a lot of time. Now this may seem not a significant time savings per testing scenario (maybe 10 minutes), but if you repeat this process regularly throughout the day you can greatly increase the productivity of your developers.
- We've also expanded our business partner and developer community support through offerings like WebSphere developer domain, developer works, and alpha works.

Slide 37 - Poorly Integrated Development Tools and Teams

• The definition of an application development has changed - expanding to a seemingly boundless set of roles and tasks that extend well beyond the role of traditional application programmer

- This is not just a team of programmers sharing a single language they are performance analysts, graphic artists, Web content managers, Business rule analysts, Quality and Performance testers, and many more
- To improve the team's productivity and the quality of their collective output, you need an
 integrated development experience that brings greater order and collaboration to the entire
 development process
- An integrated application development platform for organizing development tools, information and data in a way that can easily be extended and personalized for the team and for the development team and the individual developer
- This involves a deeper integration than just the user interface e.g., integration of the development processes and the application assets
- This is analogous to the value that portals bring for the integration of information and business processes

Slide 38 - "A Portal-Like" Approach for Developers

- Providing an open integration platform enables the industry to move from a state where customers have to choose between best-of-breed tools they must integrate themselves within their development process OR a well integrated environment with a limited set of tools
- An open development platform enables a third option a single, well integrated environment comprised of the right set of the best tools for the development team
- Delivered in a Portal-like experience for developers so they can customize their environment to best suite their needs
- Leading to greater productivity throughout the development team and the development process

Slide 39 - WebSphere Software Platform - Application Development

- Let us now look at how the IBM WebSphere software platform is addressing this business problem
- Our goal is to help our customers grow and differentiate their businesses as e-businesses to sustain competitive advantage
- to help our customers accelerate their time-to-market, and increase the quality and performance of their applications, the WebSphere software platform provides an integrated development environment
- Our strategy for development is not just about the tools it is about the combination of an integrated, extensible development environment, coupled with deep middleware and platform integration, leadership in developing and supporting open technology and support for a large and growing developer community
- the combination of a broad set of functions in the software infrastructure and an integrated development environment enables companies to develop and deploy applications with more functions and greater quality in a fraction of the time
- early measurements indicate more than 100% productivity increase when using our new WebSphere Studio development environment
- We expect that over the next several year as the complete set of development tools are integrated, we will see up to a 10x improvement for some development scenarios

<u>Slide 40 - A Comprehensive Integrated Application Development</u> Environment

- Now we are taking the next step in application development by introducing a common platform for building a truly comprehensive development environment
- an environment that assembles best of breed tools that address: 1) the type of application to be built and the infrastructure on which it will be deployed; 2) the roles of the developers of all the application assets; and 3) the processes used to execute the complete application life cycle
- These tools include those for developing industry standard programs and other assets; those
 for developing assets for specific software infrastructure (or Middleware); and those for
 managing the development process across the team and through the complete application
 lifecycle
- Tools from multiple suppliers can be combined as can tools developed by customers themselves

Slide 41 - The Open Eclipse Platform

- Now let's look at the centerpiece of this open application development platform: the Eclipse Workbench
- The workbench is a platform for developing and integrating tools providing a set of services that all tools share including:
 - common user interface and help system
 - common interface to local resources and to shared resources through repository interface plug-ins
 - common project management and debug facilities
- It also provides a set of tools for developers to allow them to use the Workbench itself to develop tool plug-ins that extend the environment
 - Java development tools
 - JavaScript development tools
 - Tools for packaging a tool as a plug-in
- The common UI provides a "portal-like" experience for developers enabling a personalized organization of tools, data and information in Perspectives that address specific developer roles and tasks
- For companies that produce development tools the value of the Workbench includes saving valuable resources from developing functions that offer their products no differentiation (i.e., resources spent recreating the wheel)
- AND the value of additional market opportunity to place their tools with developers who have adopted an Eclipse workbench-based development environment

Slide 42 - The New WebSphere Studio

- Now we will look at how IBM will leverage and extend the Workbench in the new WebSphere Studio
- All products are built on the WebSphere Studio Workbench
- The WebSphere Studio product will be offered in various configurations to meet the needs of specific developer roles
- And will be complimented and extended by partner tools and tools for IBM middleware and servers
- The power of our new product is already recognized by our customers such as Hewitt Associates LLC. Tim Hilgenberg
- Hewitt's Chief Technology Strategist, said "With WebSphere Studio Workbench and WebSphere Studio Application Developer, IBM is leading the way in providing the next generation of e-business development tooling for all aspects of the development lifecycle. Since it is role-based, it's more than just a programmer's workbench; it's a truly integrated environment for all aspects of web development. With its open architecture, "best of breed" and favorite development tools can be added to form a "Personalized Portal for Developers" so that the development productivity can be greatly enhanced. We believe this type of platform will encourage more third-party vendors to conceive and build the next generation of tools. That's great news for developers everywhere."
- Hewitt Associates LLC is a global management consulting and outsourcing firm specializing in human resource solutions. With more than 12,000 associates working in 37 countries worldwide.

Slide 43 - WebSphere Studio

- IBM will offer several configurations of the WebSphere Studio environment each offering the flexibility to customize and extend as needed
- Each configuration has a set of tools and perspectives to meet the needs of particular developer roles

These roles include:

- The Web site developer and a special case of the site developer: the individual Homepage Builder who is not part of a professional Web development team
- The Java and J2EE application and Web service developer and the enterprise developer who is developing J2EE applications or Web services and integrating them with other systems across the business
- Each of these configurations may be extended with both partner and IBM plug-ins and, by sharing the common Workbench, will be available on both Windows and Linux

Slide 44 - IBM Middleware and eServer Tools

- To bring us back up to the context of the WebSphere Software Platform...
- The WebSphere platform includes offerings that extend both the Application Server and WebSphere Studio
- As new versions of these offerings roll out you will see their tools delivered as Workbench extensions that easily and seamlessly integrate in the WebSphere Studio environment
- Providing the flexibility to mix and match tools for the middleware being used

- The WebSphere Voice Tool kit is currently available as a WebSphere Studio plug-in and tool kits for Portal Server and Everyplace Suite will be rolling out shortly.
- Others will follow later this year
- Additionally, the WebSphere Studio configurations are complemented by other development offerings:
- WebSphere Studio Asset Analyzer (speeds Enterprise modernization)
- WebSphere Studio Enterprise Suite (Bundles VisualAge COBOL, PL/1 and Generator with Enterprise Developer replacing VA Enterprise Suite in 2002)
- Versata Studio and Logic Server (Development and deployment of Business Rules driven applications)
- WebSphere Developer Studio for iSeries (will extend Site Developer in 2002 with iSeries specific tools)

Slide 45 - A Customized Development Environment

- And to take us back up to the big picture let's remember that IBM's offerings alone are not intended to address all possible development needs as this example shows
- No single vendor can deliver all the tools for creating, testing and managing all e-business application assets
- To meet our customer needs we have established an open base that enables partner offerings to easily compliment IBM's tools as well as the tools of others
- All tools developed for the Eclipse workbench can be "plugged-in" to WebSphere Studio providing additional choices to the develop which are not constrained by the relationships of
 their primary development environment provider
- That is worth repeating developers can easily integrate the tools they choose not restricted to just tools from companies that have defined business relationships
- As an example, this could be the picture of your development environment if your team is developing an adaptable, voice-enabled, B2B Commerce application and has selected tools for designing and developing the various elements of the application from these leading suppliers
- Dave Kulakowski, Development and Technology Manager at Honeywell Aircraft Landing Systems said it well: "At Honeywell, we've always seen the value in trying to dovetail and integrate our entire development environment. We're very encouraged by the release of WebSphere Studio tools, which supports the further integration of a number of major AD tools on a common foundation. As a Rational Rose user, for example, we anticipate a real boost to developer productivity through its tighter integration now with the WebSphere tools and complimentary tools from other vendors. It's great to see IBM working with its partners to build a truly open, integrated and vendor-independent development environment."

<u>Slide 46 - WebSphere Studio Business Partner Program</u>

- In order to more rapidly grow the community of providers extending WebSphere Studio, we are providing a WebSphere Studio partner program via our PartnerWorld site
- The program provides access to the WebSphere Studio Workbench, education and training, additional downloads and papers, and technical support
- Note: technical support for partners that have included WSS Workbench in their shipping products will be for fee

- In early 2002 we began our "Ready for WebSphere Studio" program that provides tests to validate partner tools meet the Workbench API and not be disruptive to other tool plug-ins
- and emblem similar to the one showed here to allow them to identify their products as Ready for WebSphere Studio
- and co-marketing opportunities such as a "Ready for WebSphere Studio" Web site for displaying their products
- There is no license fee associated with the "Ready for" program as it is designed to benefit our partners and our collective customers

Slide 47 - WebSphere Studio

As for the particulars on the roll out of these offerings

- Homepage Builder is available now but is not yet an offering built on the Workbench. (Note: Group 1 translations are now available)
- Site Developer the follow-on to the existing WebSphere Studio Pro and Advanced Editions is available now in the advanced configuration. The configuration replacing the current WebSphere Studio Pro will be available later this year
- Application Developer the follow-on to VisualAge for Java Enterprise Edition is now available in group 1 languages and on both Windows and Linux
- The Integration Edition configuration is available now on Windows and will be available on Linux later this year
- Enterprise Developer is scheduled for availability in mid 2002
- Device Developer follow-on to VisualAge Micro Edition is now available

Slide 48 - WebSphere Studio - The Proof - Caretouch

Customer Example: CareTouch

- SUMMARY: CareTouch chose WebSphere technologies over competition to build an online community for caregivers.
- They built their site with DB2, WebSphere, and VisualAge for Java and found that the products worked together so smoothly that they were ready with Carepanion, their e-commerce application in 85 days.
- CareTouch anticipates that they will be able to reuse at least 50 per cent of code developed for Carepanion for future applications.
- The customer states they chose IBM for one-stop shopping for access to web technologies.
- DETAIL: Care Touch is a life care health company that wanted to provide full on-line support for patient services. They wrote an application, which provides a robust e-commerce site that only took them 85 days to fully develop. Initially they supported 2,500 concurrent users, but because of their exploitation of the WebSphere software platform they really see no end to the scalability that they can achieve. Their estimate is that they have saved two to four weeks of development time and greatly reduced the cost of building their solution by using Visual Age for Java and WebSphere Studio combined with WebSphere Application Server. The integration of Visual Age for Java with WebSphere Application Server made it easy for them to achieve these savings both in time and in development expenses.

Slide 49 - WebSphere Studio Summary

to summarize:

- IBM is working with other industry leaders to unlock the full power of open e-business software infrastructure along with a large group of supporters we are introducing the industry's first application development integration platform to fully embrace open technologies through the broad support of this platform developers will experience significant gains in productivity and quality that result from an environment that integrates the processes, tools, test environment and application assets used by the diverse and expanding set of e-business application developers
- and finally, IBM is further demonstrating it leadership with developers and among software vendors by: contributing a very powerful development platform as open source and by introducing the new WebSphere Studio family that shares its benefits

Slide 50 - What's Next

- Looking to the future, you will see IBM rounding out the WebSphere Studio family to deliver consistent offerings on Windows and Linux (tools developed to the Workbench API will run on both Windows and Linux versions of the Workbench)
- Additional operating systems will likewise inherit these tools should the Eclipse community port the Workbench to these operating systems support emerging and evolving technologies more rapidly than ever before via delivery of plug-ins (e.g., new Web services technologies and J2EE 1.3)
- deliver additional model-driven / pattern-based support for modernizing existing applications integrating them as Web services deliver J2ME based application development for devices such as PDAs and cell phones (Note: the Workbench-based follow-on to VisualAge Java Micro Edition is already in early beta testing announcement will follow in early 2002)
- Integrate intra- and Internet based resources for developers providing additional information sharing and collaborative services

Slide 51 - Realizing the Full Potential of e-business

- In summary, let's review the WebSphere Foundation and Tools in light of the evolution in e-business that we discussed earlier. This road to e-business the evolution towards more advanced stages of e-business adoption is really all about the creation of business value.
- The WebSphere Foundation and Tools are key to enabling this business value growth they form the basis of a comprehensive platform that plays an important role in realizing the potential business value that e-business represents.

Slide 52 - Realizing the Full Potential of e-business

• This chart illustrates the difference between how much business value can be generated using the integrated WebSphere software platform versus a point product technology approach. Our customers are clearly articulating this gap between what they are experiencing with point product technology implementations versus the business value they are receiving by exploiting our WebSphere Software platform in their applications.

- Only the WebSphere Software platform with its open standards based foundation and integrated development tools will allow you to more fully leverage all of the capabilities and opportunities that e-business represents...to truly achieve the value of e-business.
- With these announcements, the foundation and development pieces of the platform are significantly enhanced, increasing the ability to execute with the WebSphere Software platform to more fully achieve the potential value that dynamic e-business represents.

Slide 53 - Business Partner Overview

This page is for the business partner to provide an overview of WebSphere Foundation and Tools; may be inserted where needed within the presentation

Slide 54 - Business Partner Services

This page is for the business partner to indicate what services they will provide to the customer

Slide 55 - Next Steps

- Now we'll close by reviewing the next steps.
- By the end of June, IBM will have a new sales tool available for WebSphere Application Server and WebSphere Studio, called an executive assessment. This Executive Assessment will include a set of solution-specific questions and forms that we can use to work with you to identify where WebSphere Application Server and WebSphere Studio would work for you.
- We would like to meet with you to conduct an assessment of your business, gather the information we need, and walk you through a structured analysis of your business and your competitive environment.
- At the end of this assessment, which takes approximately 2 to 3 weeks, you will have the opportunity to review a protoype website, a business assessment and a competitive website analysis.
- (Name) will contact you to arrange a meeting to assessment your business

Slide 56- How to Find Out More

- To learn more about the WebSphere software platform, WebSphere Application Server and WebSphere Studio, visit:
 - ibm.com/websphere
 - ibm.com/software/webservers/appserv
 - ibm.com/websphere/studio