



## Rapid Enterprise Integration with J2EE & CORBA

Andreas Lobeck  
alobeck@borland.com  
Borland Germany

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### Abstract

#### CORBA and AppServer: infrastructure enablers for Rapid Enterprise Integration

CORBA and VisiBroker have proven their value in numerous projects from small pilots to large-scale, mission-critical systems as a core middleware infrastructure.

Now CORBA is becoming the defacto standard infrastructure for application servers in particular in the Java 2 Enterprise Edition (J2EE) specifications, as well as most packaged applications across all sectors from ERP to CRM.

While moving up to most level of the enterprise, CORBA and application server technologies offer new opportunities for building integrated, adaptive business environments tackling issues of distribution, transaction, scalability and Rapid Enterprise Integration.

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## Agenda

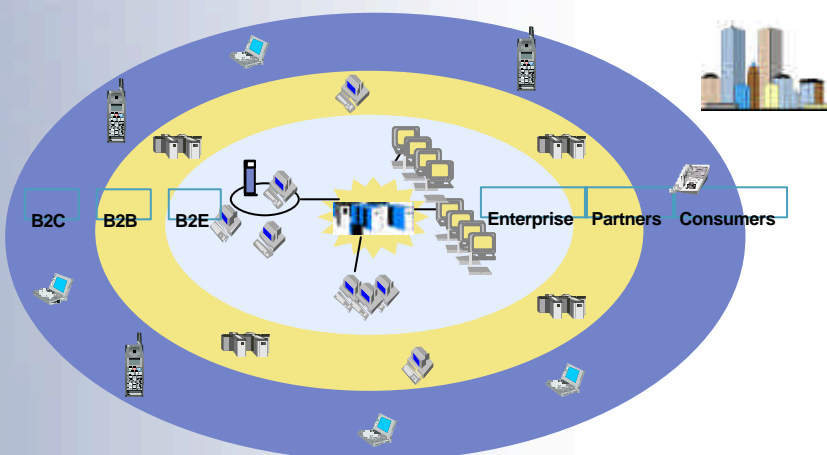
- n A New Digital World
- n Today's IT paradise
- n E-Business Implementation Platform
- n CORBA and J2EE Rapid Enterprise Integration
- n J2EE-Connector Integrated Platform
- n Borland E-Business Implementation Platform

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## A new digital world



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## Today's IT paradise

Over the last decades most organisations have inherited:

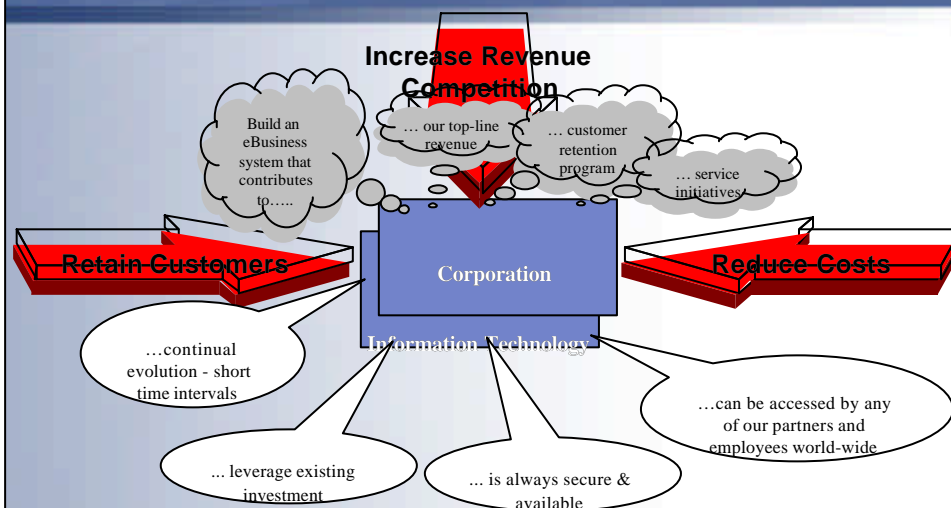
- Hardware and OS platform diversity
- Mainframe and monolithic applications
- Business legacy code and functionality
- Databases and datawarehouse pockets
- TPMs, MoMs, EDI solutions
- Web and portal servers
- Enterprise Information Systems: ERP, CRM, Operations Systems
- ... "legacy" systems

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## E-Business Drivers



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## Why CORBA Middleware ?

“On average, 70% of the work for developing new applications is spent on building infrastructure, with only 30% focusing on the specific needs for the application to fulfil. A standards based distributed computing model such as CORBA solves this problem by providing a re-useable infrastructure that allows developers to focus on the specific business problems at hand.”

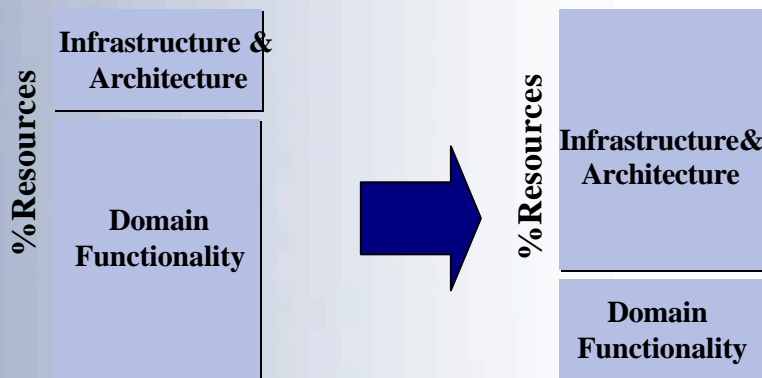
The Standish Group

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## Why is IT under pressure?



Technical resources were focused on implementation of domain functionality while Infrastructure & Architecture was under control ....

...with e-Commerce, technical resources are consumed by underlying implementation of infrastructure and architecture....

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## Companies Requirements

- Companies need to remodel their business processes and improve data access and integration across the Corporation
  - Front end CRM and ERP Systems
  - Back end system such as CICS, IMS, MQSeries, MSMQ...
- Companies need new web based systems that are
  - Highly scalable and secure
  - Handle business critical transactions
  - Reliable fail-over and fault-tolerance
  - Flexible clustering and load-balancing
- Companies need systems that leverage their core domain expertise

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## Why Middleware ?

**"There is still no solution to the Enterprise Application Integration (EAI) problem, despite what technology vendors may claim.**

**Choosing middleware to suit your specific integration needs is a step in the right direction."**

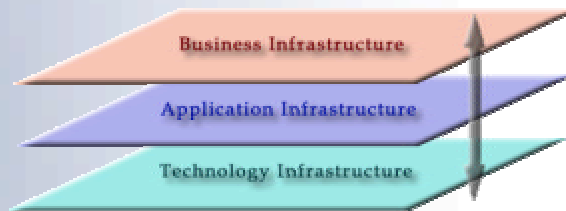
**Enterprise Application Integration from the Ground Up  
David Linthicum, SDM**

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## Implementation platform



- Technology infrastructure is granted: hardware, database, Enterprise Information Systems
- Application infrastructure enables business integration and effectiveness
- Business infrastructure gives organisations business differentiators and competitive edge

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## Borland Positioning



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## Application Infrastructure

The constantly evolving business processes require strategic application infrastructure that support them.

The agility to change systems has become a critical factor for the speed of business change.

Application infrastructure will enable you to overcome some of the complex application challenges to meet the demands of your organisation.

Giga Information Group

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## Java 2 Platform

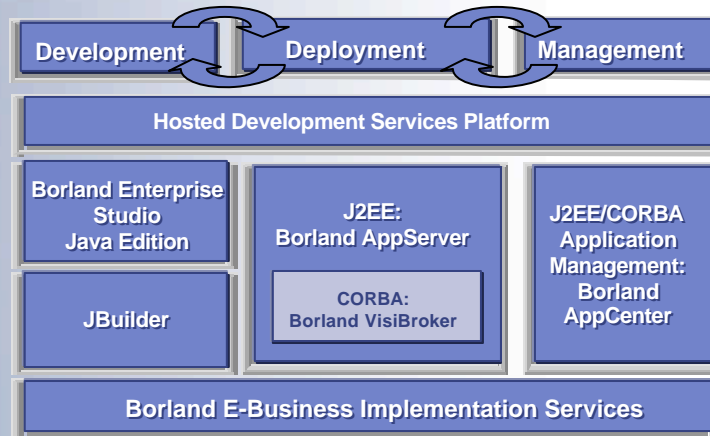


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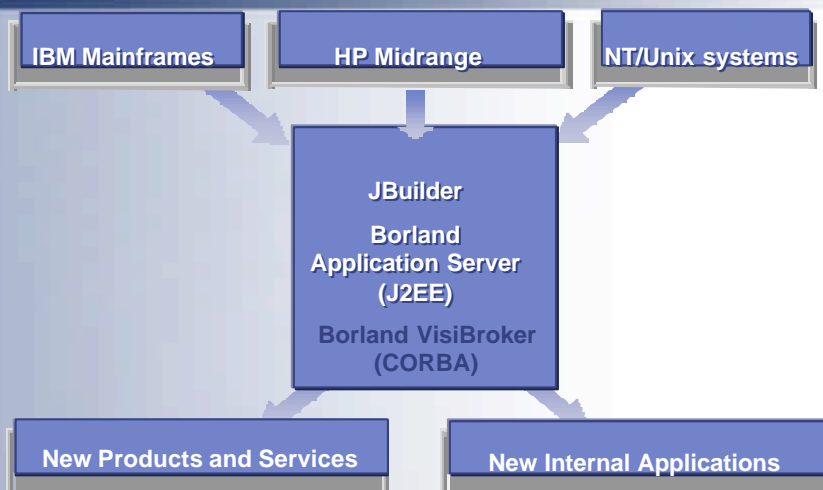
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# Borland E-Business Implementation Platform



"...big benefit for the customer is the almost complete lack of vendor lock-in generated by JBuilder, JDataStore, VisiBroker and AppServer. That lack of lock-in delivers on the J2EE vision - vendors should be competing on quality of service and breadth of connectivity, with code remaining portable" Meta group 2001  
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## Application Integration



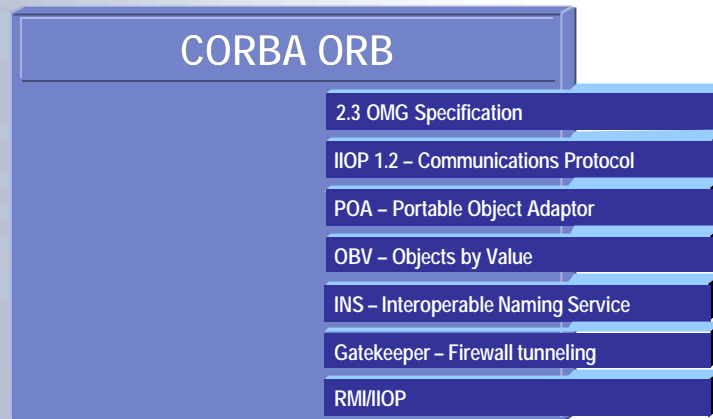
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## Borland: Java + CORBA Vision



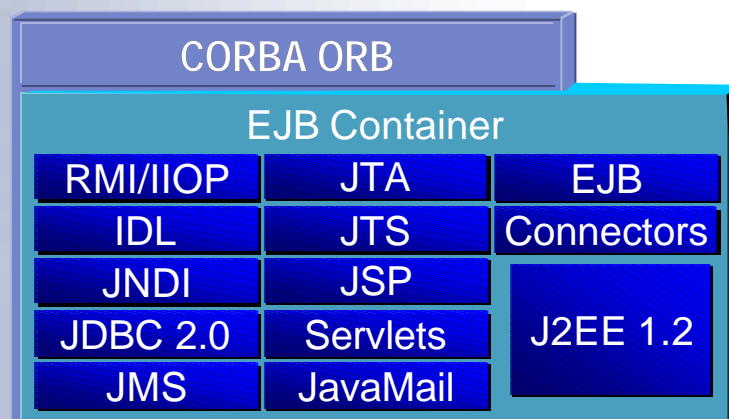
Base CORBA Support

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## Borland: Java + CORBA Vision



Base CORBA Support

Borland AppServer 4.5

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## CORBA option

- Two major trends converging
  - Object-Oriented Programming
  - Distributed Computing
- Interoperability and integration in distributed systems
- Has evolved in a heterogeneous, multi-platform, multi-language world
- Multiple competing commercial implementations

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## Borland VisiBroker The engine for Internet applications

- VisiBroker is a safe choice
- Fully OMG-CORBA standards-based
- Proven CORBA interoperability and performance
- Most widely deployed ORB in the world
- Outstanding performance
- Ease of use and time to market benefit of JBuilder integration



invent



**SIEBEL**  
eBusiness

Deutsche Bank



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## Application server - option

**Application Servers provide the run-time infrastructure and development service necessary to deploy applications, or components, in a distributed architecture supporting web and native clients.**

**Standardised infrastructure for running e-business logic**

Ovum

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CORBA is to Lego...



... what Duplo is to J2EE

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## CORBA and J2EE are complimentary

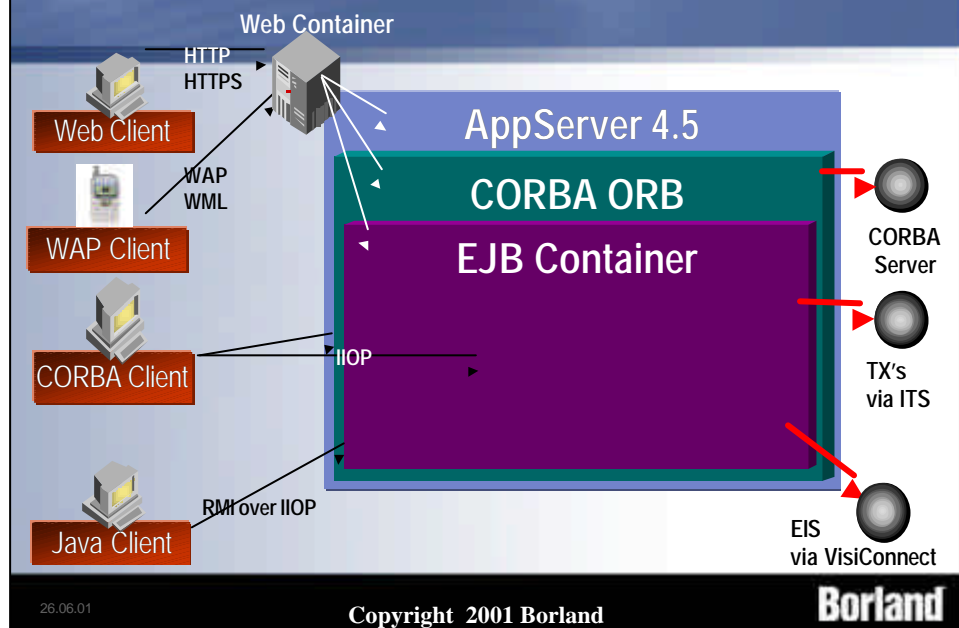
- JNDI – Naming Service
- JTS/JTA – OTS/Cos Transaction
- RMI – RMI-over-IIOP
- EJB – CORBA mapping
  - distribution: CORBA Core and CORBA Naming Service
  - transactions: CORBA Object Transaction Service
  - security: CORBA Security (IIOP-over-SSL)

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## Borland J2EE - Clients

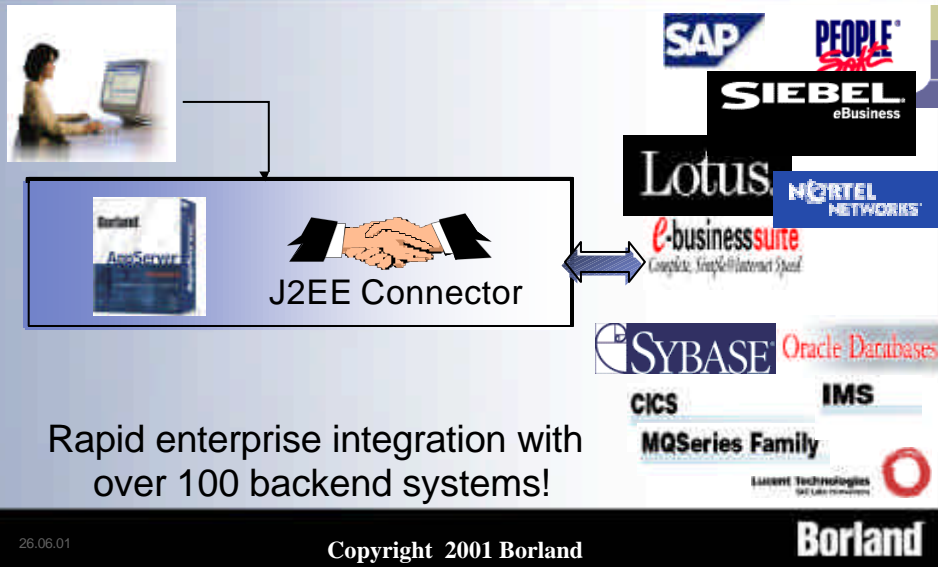


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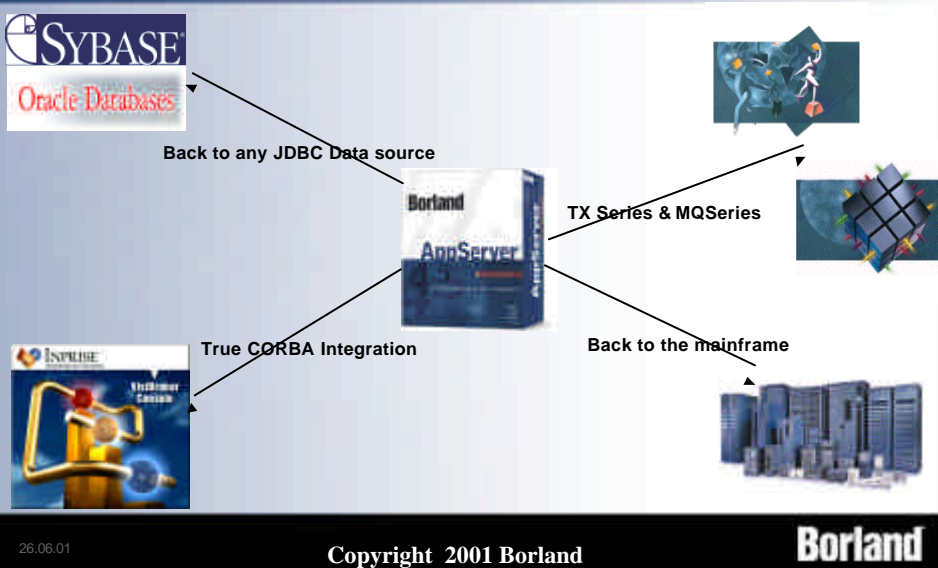
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## Time to connect...



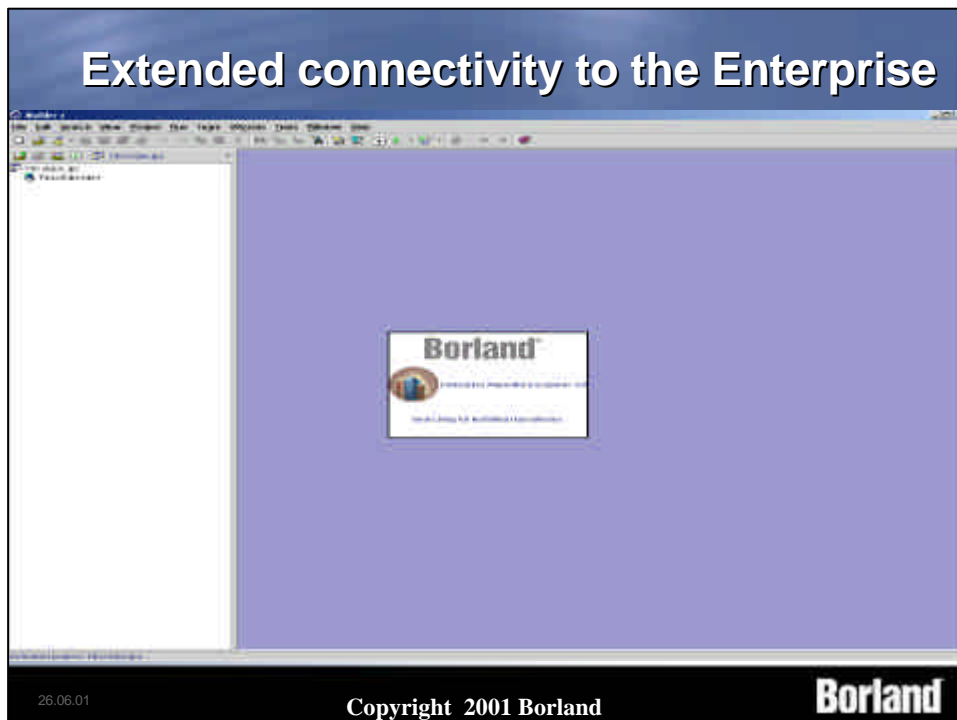
## Time to integrate...



# J2EE-Connector Integrated Platform Demonstration

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## Extended connectivity to the Enterprise



# Extended connectivity to the Enterprise

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# Extended connectivity to the Enterprise

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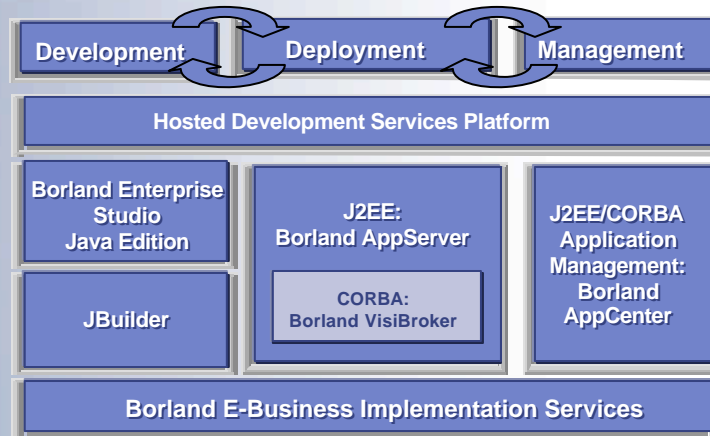
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## Borland E-Business Implementation Platform



"...big benefit for the customer is the almost complete lack of vendor lock-in generated by JBuilder, JDataStore, VisiBroker and AppServer. That lack of lock-in delivers on the J2EE vision - vendors should be competing on quality of service and breadth of connectivity, with code remaining portable" Meta group 22/01/01 Copyright 2001 Borland

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## E-Business Development Solution

- **Java: Borland Enterprise Studio**
  - #1 Java IDE (JBuilder Enterprise)
  - #1 UML and Methodology (Rational)
  - #1 HTML author (Macromedia)
  - Round trip engineering
- **RAD: Borland Delphi, Kylix and C++Builder**
  - 2 million users
  - Largest independent developer community
  - Windows, Linux, Web Services development
  - High performance

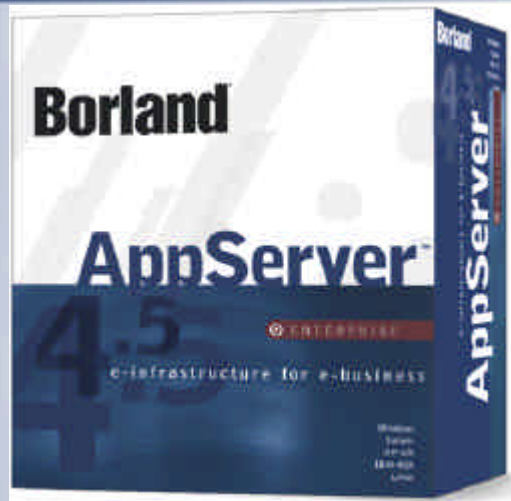


“ ..... Borland remains the go-to company for the development  
intelligentsia” Hurwitz Group December 2000  
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Time to deploy...



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## E-Business Deployment: AppServer 4.5

- J2EE 1.2 Compatibility Test Suite compliant
- High performance and scalability
- Business critical 2-phase-commit Java Transaction Service JTS
- VisiConnect: J2EE connector for legacy and backend system integration
- State-of-the-art Servlet 2.2 and JSP 1.1 support with integrated Apache Tomcat
- Extended application monitoring and active management with Borland AppCenter

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## E-Business Deployment: AppServer 4.5

### Business-Critical transactions

- 24x7x365 dynamic hot deployment / HotSwap™
  - Deploy / un-deploy / re-deploy
- Smart clustering and Fail-over
- Firewall integration
- Application Partitioning
- X 509 and PKI certificated security
- CLI (Command-line Interface) enabled for advanced scripting environments

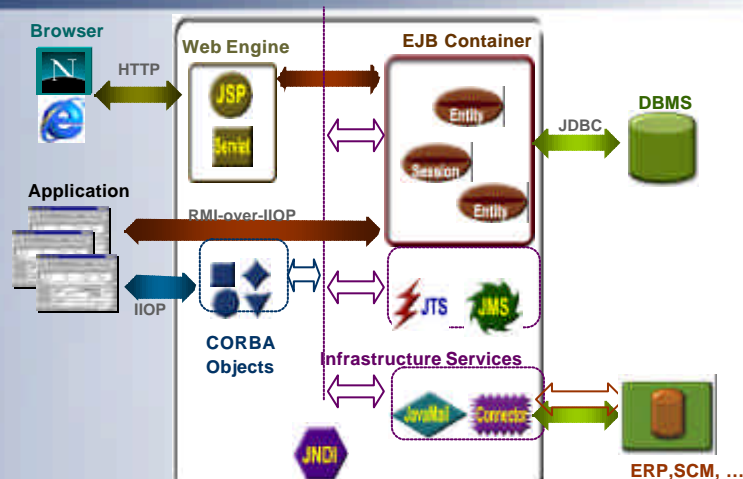


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## Borland AppServer 4.5 Overview



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# E-Business Application Management

## ■ Borland AppCenter

- EJB/CORBA application server support
- Application discovery, administration and availability management



Application  
Management

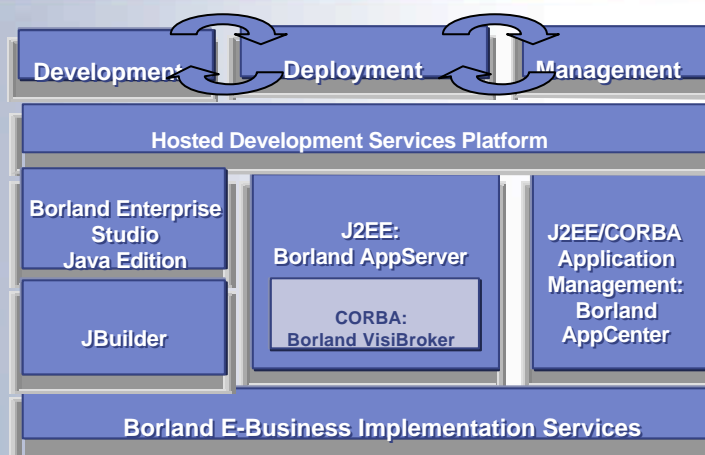
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AppCenter

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# Borland E-Business Implementation Platform



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## Borland E-Business Implementation Platform Business benefits

- **Time to market**
  - Build, change systems faster
  - More efficient/productive use of technical resources
- **Business growth**
  - Scale workloads to unlimited heights
  - Maintain reliability, performance and security
- **High service level**
  - Minimize (un-)scheduled down time
  - Proactive management of service levels

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## What should you look for?

Questions to ask... taken from Ed Roman's "Mastering Enterprise JavaBeans and the Java™ 2 Platform, Enterprise Edition." [Wiley Press 2000.]

- |                                |                                    |
|--------------------------------|------------------------------------|
| ✓ EJB Spec. Compliance?        | ✓ Integrated Tier Support?         |
| ✓ EntityBean Support?          | ✓ In-Memory Data Cache?            |
| ✓ Container managed            | ✓ Scalability?                     |
| ✓ Bean-Managed                 | ✓ High Availability?               |
| ✓ CORBA based vs. RMI based?   | ✓ Security?                        |
| ✓ RMI-IIOP API?                | ✓ IDE Integration?                 |
| ✓ JTA via JNDI support?        | ✓ Intelligent Load Balancing?      |
| ✓ Protocol issues?             | ✓ Stateless Transparent Fail-Over? |
| ✓ Existing System Integration? | ✓ Clustering?                      |
| ✓ Specialized Services*        | ✓ Real-time deployment?            |
| ✓ Asynchronous Messaging?      | ✓ Distributed Transactions?        |

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# Borland E-Business Implementation Platform Customer References

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## Bank of America



- **The Bank developed a standard platform using Visibroker, JBuilder, and AppServer**
- **Online Banking**--bringing customer account balance and transaction information to the web
- **Online Trading**--Delivering information to Traders faster
  - Reduced costs, improved productivity and increased revenues
- **Managing the Merger of Nations Bank**
  - Integrating data from two companies for reporting
  - Minimizing training, maintenance and support costs
- **Other Benefits**--B of A has modernized many one and two tier client server applications by reusing the architecture created when building new applications
  - Significantly reducing time to market for development

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## Deutsche Bank



- Applications include back office settlement, front office customer systems, and e-commerce corporate banking infrastructures
- They chose Visibroker after an in-depth evaluation of Object Request Brokers (ORBs)
  - Outstanding object transaction performance
  - Integrating with legacy platforms
  - Open standards compliance with Java 2 and EJB
  - Cross platform--NT, Unix, OS/390
  - Integration with other Partners including Oracle, SUN, and Cisco

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## Ericsson

- The world's leading provider of telecom infrastructure
- Building the next generation high speed communication network to support GSM (Cello)
  - Thousands of base stations to manage their calls from
- Building a common interface framework (CIF) to access all OSS systems (GSM, Fixed, ATM, UMTS)
  - Integrating 8 development sites with JBuilder and Visibroker
- E-Business Project (OS/390) -- "World's largest B2B e-commerce project" (IBM)
  - Using Visibroker to bring legacy data to the web
- Jambala--Open API to build new telco services for heterogeneous networks and operators--JBuilder/Visi

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## Telcordia



- They are a Telephony Applications provider to the Telecommunications Industry--phone companies
- They chose Visibroker and JBuilder after extensive testing against Iona's Orbix-- "Beat Orbix hands down!"
- They provide Operations Support Systems Applications
  - Billing, Dispatch, Service Delivery, Call Agent.....
- They also Provide new Networking Applications
  - Voice over IP (VOIP) -- 800#, Credit Card, Conference Calling, Toll billing
- Over 30 applications running today with another 25-30 under development

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## AOL



- AOL wanted to introduce a Voice Service to access email and web pages via the phone
- They partnered with Quack.com, a small Visibroker OEM who had a product under development
- They tried the product and bought the company
- Currently deployed with 200,000 users

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# CISCO



- Selected Borland JBuilder, AppServer and AppCenter for their e-Commerce Infrastructure
  - e-Business site contributes to \$20B per annum of top-line revenue
  - Strategic to CISCO growth strategy
  - Impact of an outage: \$2.2M per hour
- Ciscoworks--Critical network management tool



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## Thank you

Andreas Lobeck  
alobeck@borland.com

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