

The Eclipse Phenomenon

Lee R. Nackman
CTO and VP, Design, Construction, and Test Tools
IBM Rational Software

Outline

- Genesis
- Out Into the Open
- Independence
- IBM's Commitment
- A Look to the Future

Genesis: Development tool landscape circa '95-98

- Microsoft Visual Studio
 - Market leadership on path toward dominance
 - Evolving toward a tools platform
- Emergence of Java IDE's:
 - Symantec Visual Café
 - Borland JBuilder
 - IBM Visual Age for Java
 - ...
- Emergence of application servers
 - Java: WebSphere, WebLogic, iPlanet, ...
 - Microsoft MTS and COM+

Genesis: Development tool landscape circa '95-98

- IBM tool products: multiple labs and technologies
 - Visual Age for Smalltalk (Ottawa, Raleigh)
 - Visual Age for C++ (Toronto, Raleigh, Watson Research)
 - Visual Age for Cobol (Silicon Valley, Toronto)
 - Visual Age for Java (Ottawa, Toronto, Raleigh)
 - (what would become) Visual Age Micro Edition (Ottawa)
- Customer view
 - Your tools seem like they come from different companies
 - They don't work together

Genesis: Problems to Solve circa '98

- Needs
 - Bring developers to Java-based middleware
 - Solve problems with IBM tool products
 - Partner ecosystem
- Reality
 - Wasteful re-implementation of similar stuff across IBM labs in different technologies
 - Brittle technology in flagship Visual Age for Java product

Genesis: Getting Started

- “Vision” shopped around to various IBM teams
- November '98: Decided to go ahead
 - Object Technology International (OTI) to build platform and Java IDE
 - Subsidiary of IBM, purchased in 1996, based in Ottawa
 - Experience building several generations of IDEs
 - Small, highly skilled teams
 - Ability to “protect”
 - IBM team to build the first product based on the new platform

Genesis: Key Decisions

- Give the job to a small, tight-knit team
 - Conceptual integrity is essential
- Build an extensible platform and a great Java IDE
 - Constrain the imagination of the platform team
 - Use the Java IDE to attract people to the platform
- Producer/consumer relationship between platform and Java IDE teams working relatively closely
 - Foster a clean platform interface
 - Tight feedback loop

Genesis: Key Decisions

- Separate product and platform teams organizationally
 - Need strong advocate to protect platform integrity
 - Multiple products to be built on platform
- Do what it takes to be competitive with Visual Studio on Windows
 - Assumed that Microsoft would enhance widgets and exploit heavily in Visual Studio
 - Wrapped native widgets → SWT
 - (No “religion” here)

Genesis: Progress

- The Blizzard of January 2000
 - By this time, enough progress to plan products
 - Planning meeting in Raleigh, North Carolina
 - Two feet of snow, “plowing the runway with toothpicks”
- Serious effort initiated to build replacement for Visual Age for Java based on the new platform
 - WebSphere Studio Application Developer (WSAD)

Genesis: What's in a Name?

- e-business was hot
- Brainstorming “ē”-sounding names: “eclipse” stuck
- Lawyers advised against the name
 - **Mitsubishi Eclipse**
 - **Eclipse gum**
 - **Eclipse girls soccer team in Illinois (owned eclipse.org)**
 - ...
- But “eclipse” had a good ring and we wanted to eclipse Visual Studio

Out Into the Open: Motivation circa early 2001

- Continued strengthening of Visual Studio and growth of Microsoft ecosystem
- IBM's middleware business depended on bringing developers to our Java-based middleware
- Continued fragmentation of Java tools and application servers
 - Competitive ecosystems within Java space
 - Java competitors reinventing the same capabilities over and over, not advancing with respect to Microsoft
- Hard to convince partners to invest in our (as yet unproven) platform

Out Into the Open: Making the Sale in 2001

- IBM open source experience
 - Saw the growing share of Apache HTTP server
 - IBM had extensive and good experience working with and helping Apache
 - Substantial IBM interest and investment in Linux
- Primary business objective: bring developers to the Java middleware stack
- Enlightened senior management

Out Into the Open: November 2001

- Open source licensing and operating model
- Established Eclipse consortium and eclipse.org
 - 9 initial members
 - Including partners Rational Software and TogetherSoft
 - And competitors WebGain and Borland
- Membership required only bona fide commitment
 - Use internally, promote, and ship a product (no teeth)
- Principle: separation of concerns
 - Open source community controls the code
 - Consortium drives “marketing” and commercial relations

Out Into the Open: Response



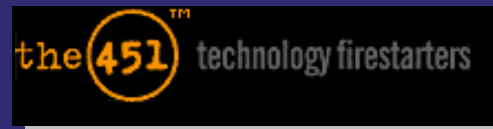
"In [...] its most significant announcement in 2001 IBM Corp yesterday donated a claimed \$40 million of software [...] to a new open source application development community called eclipse.org"



IBM's plans can change the entire industry. As revolutions go, this one is a bargain.



"Suddenly IBM is cool"



"IBM Aims to Eclipse Tools Market...for Microsoft, Eclipse presents something of a problem...they will have to contend with yet another open source threat on a relatively unprotected flank..."



"The name of this new open source initiative is Eclipse, as in overshadowing of Microsoft's proprietary approach ... it may take a long time, but the open-source movement eventually will accomplish what the government failed to do ."

Out Into the Open: Response



"IBM is first to launch a 'community property, best-of-breed' AD platform to integrate a variety of tools from a variety of vendors ... the implications are not only significant, but far-reaching."



"Eclipse is a break from the proprietary pattern, it comes at a critical time in the industry...its a very aggressive move"



"Eclipse will very likely be a quick & cost-effective way of forging alliances in the all-important battle for developers ... using open standards & open source software as the means to gather those developer resources."



"This is IBM's most audacious open source gambit so far... it's real code designed to do real work."

Out Into the Open: Nurturing

- Continued evolution and improvement of technology
 - Eclipse 2.0 and 2.1 drove widespread adoption
- IBM-funded technology seeding programs
 - Technology PMC
 - Eclipse Innovation Grants and Technology Network
 - Eclipse code camps
- IBM-funded consortium secretary to grow vendor participation

Out Into the Open: A New Model

- Open source evolution of technology
 - Open license
 - Anyone welcome to participate
 - Meritocracy
- In reality, most committers are employees of a few vendors
- Strong leadership – people and money – from a major vendor (IBM)

Out Into the Open: A New Model

- Federalism vs. Republicanism in early America
 - Strong federal executive
 - Distributed (i.e., state) control
- Balancing the two forces was crucial for creating Eclipse technology and ecosystem
 - Conceptual integrity
 - Perception (and reality) that IBM would allow others to play
- Achieving this balance while being far and away the largest contributor was a key challenge

Independence: Motivation

- Feedback from industry analysts (esp., Gartner)
 - Perceived as IBM-controlled
 - Customers are confused: what is Eclipse?
 - Major vendors reluctant to make strategic commitment while under IBM control
- IBM wanted more serious commitment from others
 - “Voyeur” phenomenon
 - “Put up or shut up”
- Pragmatic issues
 - Intellectual property
 - Collecting and spending money

Independence: How

- Other companies played major roles in formulating and creating the Eclipse Foundation
 - HP
 - Instantiations
 - SAP
 - Intel
 - QNX
 - Serena
 - TogetherSoft
- Formed the Eclipse Foundation just in time for EclipseCon 2004!
 - Not-for-profit foundation
 - Professional staff

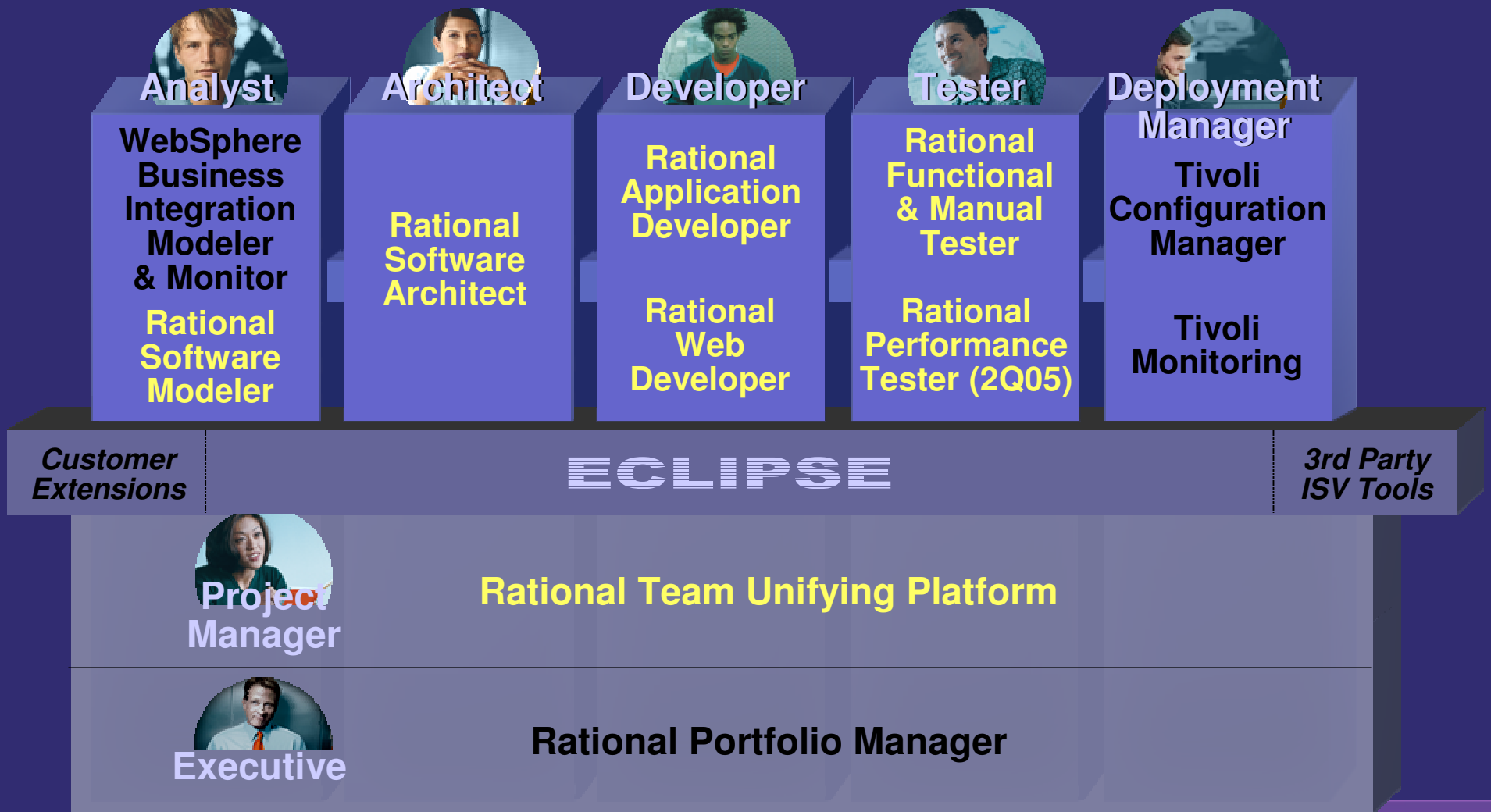
Independence: One Year On

- Success
 - Eclipse 3.0 a hit
 - Dramatic growth in members at all levels
 - Deeper commitment by all independent tools vendors and most platform vendors
 - Spate of EclipseCon 2005 announcements
 - Rapid expansion of scope and effort
 - Emergence of RCP, WTP, DTP, BIRT, ...
- Dramatically reduced fragmentation
 - Eclipse now the major non-Microsoft tools platform

IBM's Commitment

- Comments / questions in the press remarking on IBM's pulling back from Eclipse last year
 - Intentional, last year, to let the Foundation get on its feet
- IBM is more committed to Eclipse than ever
 - More developers contributing to more Eclipse projects than a year ago, and more than any other vendor
 - Eclipse-based products from every IBM Software Group brand – Rational, Lotus, WebSphere, Tivoli, DB2 – and from IBM Systems Group too
 - Internal enablement team to help products adopt Eclipse
- Eclipse-based revamping of Rational products

IBM's Commitment: The IBM Software Development Platform



A Look to the Future

- “If you do not think about the future, you cannot have one.” -- John Galsworthy
- “It is far better to foresee even without certainty than not to foresee at all.” -- Henri Poincaré
- “The art of prophecy is very difficult, especially with respect to the future.” -- Mark Twain
- “If you can look into the seeds of time, and say which grain will grow and which will not, speak then unto me.” -- William Shakespeare

Drawn from Famous Forecasting Quotes, D.B. Stephenson, 1998.
<http://www.met.rdg.ac.uk/cag/forecasting/quotes.html>

A Look to the Future: The Challenges of Growth

- Balancing innovation and overlap
 - Let the flowers bloom vs. coordination across projects
 - Example: Data tools project overlap with Web tools project, being worked out now
- Balancing stability and growth
 - Success breeds dependence → pressure for slowing change
- Evolving successful business models
 - Vendors need revenue to be able to pay developers ☺

A Look to the Future: The Challenges of Growth

- Co-existence and interoperability
 - Users like the promise of interoperable plug-ins from many sources
 - Version-to-version compatibility
 - User-visible complexity with scale
- Maintaining conceptual integrity
 - More, more, more ... developers, projects, vendors, conflicting goals
- Maintaining quality
 - Time to mature new components
 - Ability to reboot, refactor and rearchitect

A Look Into the Future

- New strategic developers
 - BEA, Borland, Scapa, Sybase
 - More muscle across a broader part of the application lifecycle
- With such broad community support, Eclipse will continue to revolutionize the software development landscape

Thanks