GOVERNMENT EXHIBIT
PENGAD-Bayonne, N.J.

From: Ben Algaze
Sent: Friday, October 25, 1996 10:29 AM
To: Ben Slivka; Paul Maritz; Brad Silverberg; Bob Muglia; Charles Fitzgerald; John Ludwig; Tod Nielsen; Brad Chase; Patrick Dussud
Cc: David Stutz; Victor Stone; Robert Welland
Subject: RE: Microsoft Java Strategy

I don't think that the aim was to debunk "write once, run anywhere" as a bad thing, since it's been the holy grail of development for time immemorial. More to debunk it as something that Java promises, but can't deliver - yet. I agree that we need to have the best tools and the best environment to build and run Java apps. However, if we execute this well, it probably won't be quite write once, run anywhere, because that almost always has to be a lowest common denominator approach. I believe that if we indeed offer the richest, easiest to use services/APIs for Java, and the best development model (Trident, HTML, Active controls, etc.), apps will be written to our platform because they'll run on Windows first and best.

From: Patrick Dussud
Sent: Friday, October 25, 1996 9:00 AM
To: Ben Slivka; Paul Maritz; Brad Silverberg; Bob Muglia; Charles Fitzgerald; John Ludwig; Ben Algaze; Tod Nielsen; Brad Chase
Cc: David Stutz; Victor Stone; Robert Welland
Subject: RE: Microsoft Java Strategy

It doe not seem constructive to debunk Write once, run everywhere, application quality, faster time to market, new kinds of applications because people are working hard to make all of things true. It's like resisting progress.
Bringing some of the Java advantages to other languages is nice and certainly improving Win32 is necessary. That would be good if we could find a way to promote our platform without fighting Java, because Java is a good thing for a lot of people, including Microsoft developers.
We can show that our RAD tools (VB / Java) provide faster time to market than any other RAD tools, and bring other good RAD tool vendors in our fold (our VM, our ActiveX Java architecture). Winning the hearts of the developers is half of the battle.
We at Microsoft are exposing more and more Java binding to our leading edge API and services. In my opinion, that's the best way to proceed. People will hate us at first because the bindings are not compatible with Sun API, but then they will have to make a choice based on the quality of the services. I believe we can win this way. In summary, we should adopt only industry standard Java API and services and ignore proposed APIs that overlap with the one we have.

-----Original Message-----
From: Ben Slivka
Sent: **Thursday, October 24, 1996 12:42 PM**
To: **Paul Maritz; Brad Silverberg; Bob Muglia; Charles Fitzgerald; John Ludwig; Ben Algaze; Tod Nielsen; Brad Chase**
Cc: **Patrick Dussud; David Stutz; Victor Stone; Robert Welland**
Subject: **Microsoft Java Strategy**

charlesf, bena, and I brainstormed for 2 hours this morning.
We need to nail this down, and then start communicating the public aspects of this in a very crisp, coordinated fashion.
So far Sun and Netscape have both wildly out-marketed us on Java -- it cures cancer, etc.
We need to bring some reality to the market perception.
--bens

Four Key Things

1) Help drive IE marketshare with high-quality Java "subset"
2) Get developers to write very rich Windows applications, controls, etc. in Java
3) Focus corporate developers on server-side apps (IStudio/Denali), render Java irrelevant on the client
   ➔ It is critical to get converged VB/Java/IStudio tool to market
4) Let Java class library space fragment, so that "write once, run everywhere" does not happen

Things to Debunk about Java

- Write once, run anywhere
- Application quality
  - Performance - Java apps are slow
  - Features - xplatform classes are limited
  - Fit & Finish - immature platform
- Faster time to market
- Enables a new kinds of applications
- Reduces barriers to entry, market without established leaders

Issues/Work Items

- Should we hold back Win16 Java?
  - To extent Java is adopted, will drive Win32 sales
- Who are Java ISVs? How can we engage/influence them?
- Total Cost of Ownership
  - We need to fund studies to compare real TCO (and TC of Development!) of Java vs. Win32 solutions
  - Need to focus on improving Windows/Win32 here
  - Focus on employee productivity vs. centralization - popular business think is pushing responsibility down lower in organizations, means individuals need more computing power/tools on their desktop
- Need to communicate proactively benefits of the Windows platform
  - Choice
  - Flexibility
  - Maturity - established tools, trained developers, infrastructure, etc.

Sun's Strategy

1) Get Java out there: layer Java on all popular operating systems, offer native JavaOS
2) Get critical mass of new apps written to Java platform: appeals to developers because
   a) Cross-platform
      i) Sun compatibility test suite - bound to fail, doesn't fully cover all their APIs
      ii) **Class library marketshare will establish defacto standard**
   b) Ease of development
      i) Garbage collection (fewer bugs, more stable)
      ii) Need great tools
   c) Total cost of ownership
      i) Easy installation
      ii) Lower maintenance
   d) Warm & Fuzzy: perceived advantages, not there there
      i) Anyone But Microsoft
      ii) Security
      iii) "New"
3) JavaOS beats Windows - license to Windows OEMs now that Java apps are prevalent

Microsoft Java Strategy

1) Drive MS Java VM and classlibs (w/Win32 extensions!) to broad installed base
   a) Broadly distributed "MS Java" should address the "HTML applet" space
2) Don't encourage new, cross-platform Java classes; especially don't help get great Win32 implementations written/deployed
3) Do encourage fragmentation of the Java classlib space: multiple 2D standards, AWT vs. IFC, etc.
4) CONSIDER: Take Win32 to other platforms, esp.
   a) Permits MS Java classes to be x-platform easily, still Windows-centric
   b) Improves our client time-to-market for mail, IE, etc.
5) Focus on Java as the "last battle" (APIs, client apps) - IStudio+Denali are the right solutions for corporate developers: avoid delivering code to the client altogether!

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As a Developer, what <u>might</u> Java do for me that Windows does not?
ISVs are fundamentally focused on making money. Corporate developers are focused on reducing their development backlog.

1) Faster time to market: **no today**
   a) Lack of tools
   b) Does Java scale?
   c) Developer experience w/Java, class libs
   d) Less complete platform implies have to write <u>more code</u>
2) Richer application - faster, more features, easier to use: **no today**
   a) Will take a long time for Java classes to catch up with/Win32
3) Broader market for my software: **maybe**
   a) No Win16 today, but maybe corp market moves to Win32 anyway
   b) Still Lowest Common Denominator for some time
4) Lower my support cost: **unknown**
   a) Need to spend money to get hard data on this
5) Enable new kinds of application: **no**
   a) We have not seen any new application metaphors that cannot also be done on Win32
6) Reduces barriers to entry and/or new market w/o established leaders: **no**
   a) The market isn't any different - either you are writing code to sell, or developing internal applications
7) Get VC funding, be cooler: **yes**
   a) We should channel this into focusing on Windows applications written in Java

Microsoft Levers for Java

1) Distribution (w/Windows)
   a) Don't ship every Java class in the known universe
   b) Do ship world-class VM (interpreter, JIT, ActiveX integration) and world-class "core" classlibs (necessary for high-volume "html applets") that are Win32-extended (like fonts, menus, GDI features, etc.)
   c) Do ship lots of Win32 Java wrapper classes: DirectX, Active Animation, Active Movie, etc.
2) Integration (w/Windows)
   a) [I'm not sure what to do here beyond ActiveX/beans integration]
3) Quality of implementation
   a) Win32-specific classes should be awesomely fast, functionaly
   b) "core" classlibs are world-class
   c) Let "new", xplatform java classes have poor Win32 implementations (to blunt adoption)
4) DRG, developer mindshare
   a) VB?
5) Installed Base
   a) Windows
   b) VB
   c) Office
6) Device Drivers
   a) Ship DirectX, Active Movie, etc. Java classlibs

<end>
The original Word 97 version...
<< File: Microsoft Java Strategy.doc >>

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