This is Lotus' view of the OS/2 - Windows situation. TL

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To: Jim Manzi
From: Bruce Johnston
Date: August 2, 1989

Re: August 4, 1989 IBM Meeting

Here's a summary of arguments to pose to IBM regarding the possible incorporation of a Windows-based GUI into future versions of DOS (DOS GUI). I'm assuming that the degree to which DOS GUI will equal DOS + Windows remains unresolved, hence I attempt to distinguish between "Windows" and DOS GUI.

A. Why Lotus is concerned by this possibility...

A1. *Dilution of our OS/2 PM development focus.* Since creating APD in 1984, we have been investing towards delivery of major OS/2 PM applications. We strongly believe that our focus, in conjunction with that of other ISV's such as WordPerfect and Ashton-Tate, will be essential to OS/2's ultimate success. By the end of 1989, our R&D investment in OS/2 PM-specific applications (G, DBMS, Chagall, 1/2 of Notes) will be approximately $45 million. We have roughly 240 people engaged in OS/2 PM product development and marketing. That number will grow dramatically as we get closer to ship dates (QA,etc.) Under our current plans, we will spend tens of millions more dollars marketing and selling these products over the next 2-3 years. A reallocation of resources towards DOS GUI work will directly impact delivery schedules and resources available for our OS/2 PM efforts.

A2. *Possible scope of DOS GUI development effort.* As you know, no 1-2-3 development effort is small because of the testing, etc. required to ensure a quality product. The R3.0 team consisted of 150-170 people. Our initial estimate is that a "minimal" DOS GUI version of R3.0 would require 18-24 months of work by about 50 people, at an R&D cost of at least $7 million. This of course says nothing about graphics, DBMS, etc. The opportunity cost in terms of bright minds unavailable for OS/2 PM development efforts would be much higher.

B. Why IBM should be concerned as well...

B1. *This move, and even rampant speculation about this move, could kill OS/2 PM in the marketplace.* Now is an especially vulnerable time in OS/2 PM's evolution. Customers aren't saying they don't want to move to OS/2, they are merely saying that they don't yet know why they should. Delivery of major applications will show them. A vote of "no confidence" by IBM would send a clear anti-OS/2 message to customers and to ISV's just months before the first major OS/2 PM applications ship (G scheduled for 3/90). We will spend substantially less money marketing and promoting OS/2 PM applications under this scenario, as will other ISV's, helping to seal OS/2 PM's fate.

B2. *Compaq appears to be supporting the DOS GUI notion, because they know it plays into their hand.* Our meetings with Compaq suggest they are leaning in this direction. Compaq's strategy may be as follows: Compaq probably thinks IBM did a great job aligning PS/2 and the MicroChannel architecture with OS/2, and therefore that OS/2's early success could be bad for Compaq. Compaq knows Microsoft/IBM made some mistakes with OS/2, and may be trying to use those short-term problems to damage OS/2 in favor

of a DOS GUI based on Windows, with which Compaq has been aligned in the past (through bundles, etc.). Win #1--If OS/2 fails, IBM's credibility and it's PS/2 positioning would be severely damaged. Win #2--Compaq has a big bet placed on 80386 penetration rates. Any 80386-specific operating system that drives demand near-term would be a plus for them, even if it didn't simultaneously hurt IBM.

B3. *Essentially, Microsoft and Compaq are attempting to use IBM.* Microsoft wants OS/2 to be successful, but even more so, wants its PC applications business to be successful, and that will be more certain if DOS/Windows happens. Microsoft, as well as Compaq, would benefit from IBM's Windows endorsement, but IBM itself would not.

B4. *Apple and "the Unix opposition" would both love to see an IBM-endorsed Windows-based DOS GUI.* As stated earlier, we believe that this move could kill OS/2 in the marketplace. At the very least it would substantially cloud OS/2's future. IBM and Microsoft cannot hope to successfully forge a new standard while publicly reducing their commitment to it. OS/2 is a legitimate strategic contender to the Macintosh operating system and to Unix. DOS/Windows, on the other hand, is technically inferior to both in fundamental ways. A perceived retreat from OS/2 by IBM would strengthen the respective market positions of Apple and "the Unix opposition", ultimately costing IBM much more than it currently risks losing due to the slower-than-expected OS/2 takeoff.

C. If IBM is going to do it anyway...

C1. *Wait 18-24 months so that OS/2 can establish itself.* By mid-'91, major applications such as 1-2-3/G will have been in the marketplace for over a year. Equally important, IBM/Microsoft will have made substantial improvements to OS/2, including reworking the file system to increase performance and providing full 32-bit (80386) support. The combination of solid applications support and technical improvements will greatly strengthen OS/2's market position, enabling it to remain successful in conjunction with DOS GUI.

C2. *Do DOS GUI in a way that enables companies with major investments in OS/2 PM to support it more easily. Do not just bundle/endorse Windows in unaltered form.* Microsoft is doing a fine job of promoting Windows-to-OS/2 PM and Windows to DOS GUI migration paths (i.e. Microsoft wants Windows and DOS GUI to be one and the same), but most major software vendors (Lotus, Tate, WordPerfect, Software Publishing) have large OS/2 PM investments and little or no Windows investment. Therefore the overall success of DOS GUI and OS/2 PM is much more dependent on OS/2 PM-to-DOS GUI migration than on either of the other paths. We should work with IBM to determine specifics that we'd need to make this migration most efficient. Some examples are:

- *DOS GUI should use the PM GPI display imaging model instead of the Windows GDI model.* The issue here is that the GPI model is much more sophisticated and flexible. It's relatively easy to go from GDI to GPI because you are essentially relaxing constraints, but going backwards is a bitch. Getting this would allow us to reuse 1-2-3/G and DBMS interface code in our DOS GUI product(s).

- *DOS GUI should have better development tools than Microsoft has provided for Windows, such as good debuggers.*

- *DOS GUI should re-architect the Windows Dynamic Link Libraries(DLL's) so that they function like OS/2 DLL's.* This would be a fundamental architectural change that they are unlikely to undertake.

C3. *As an alternative to DOS GUI, IBM should consider doing a down-sized OS/2.* This would be the best case for us. This could involve carving out a subset of the OS/2 Applications Programmer Interface (API), and possibly swapping out the DOS "Compatibility Box" for the Windows 386 "Virtual Machine" layer. The latter change would save as much as 1 Mb of memory requirement while providing multiple DOS machine capability, but would make the down-sized product 80386 specific. The size difference between DOS GUI and mini-OS/2 would probably be around 1 Mb. The advantage to IBM in going this route would be that their SAA PC environment would consist of two flavors of a single architecture (OS/2) rather than two disparate architectures (OS/2 and DOS/Windows). Technologies such as Extended Edition could work with mini-OS/2 (which I don't think would be true for DOS/Windows). Lastly, presuming that IBM could do the work (practically and contractually) and keep it for themselves (not have Microsoft OEM all of it), they might be able to achieve differentiation from clones by going this route. My understanding is that IBM isn't contractually obligated to work with Microsoft on 80386 versions of OS/2 (this should qualify).