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cc: Ray Ozzie, Joe Guthridge, Eric Hahn, Bill Flanagan
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Date: 12/18/91 05:44:12 PM
Subject: Microsoft System Design Review '91

Microsoft System Design Review '91

Recipients: I am expecting to receive the presentation slides from this conference tomorrow, Friday December 20. I will be scheduling a review of the conference with all attendees and senior management as soon as we can get together again. Please let Terry Phillips, my AA, have your vacation schedules so we can set this up as soon as possible.

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Attendees

This is the third annual in-depth review of its technical strategy that Microsoft has held for key PC ISVs. This year the attendance was broadened to include ISV's with Unix-based workstation products, notably Forest Baskett of SGI. In addition, selected systems vendors were present, such as DEC, Adobe, Novell and Banyan.

Lotus Attendees: Bill Flanagan, Joe Guthridge, Eric Hahn, Alex Morrow and Ray Ozzie.

I am opening a restricted access database discussion on these topics and other strategic topics, on server COMMON, database \ms\edr91. Please comment on these topics.

Quick Summary

MS has a powerful, credible, simple strategy, based on making *Windows the single, scalable platform for all software* -- equivalent to the VAX hardware architecture of the '80s, or the 370 and 360 hardware architectures of the 70's and 60's.

They were very open, answered all questions, and indicated that they were going to *continue their system design review process*.

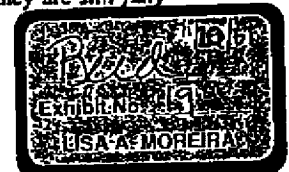
Their systems team is uniformly strong (there are minor exceptions to this).

Windows 3.1 is shipping in March with pretty complete Multimedia support, including a cute (green oscilloscope display) OLE-based waveform player and sound drivers for on-board speaker and all popular cards.

Windows 3.1 is going to have a *point release (Sparta) for networking* in the late summer.

MS is planning to *enter the printer market*, presumably to back up their statement that they are *still fully behind TrueType*.

NT is real, and will ship on both platforms between late summer and YE 92.



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They have decided to provide Win32s (Win32 subset) a "reverse thunk" layer on Windows 3.1 to permit binary compatible support of a subset of the Win32 environment. It will ship by summer, with betas in 1Q92.

Pen Windows has dozens of hardware vendors, and will ship 2Q92, in Japan in 3Q92.

MS is rolling out OLE 1.0 on Mac (we have a beta). They have fixed many of the objections to the OLE 2.0 Macro Manager design. They demo'd the OLE 2.0 macro manager, which has an attractive "block" oriented user interface. OLE 2.0 Beta 1 will be 1Q91.

MS is surprisingly far along (i.e., to condensate-ware) on Cairo, the next system beyond Win32. Cairo is a Pink-ish object-oriented user environment with a networked object-oriented file system. MS claims Cairo is a natural evolution of OLE 2.0.

C7.0 will have two releases this year, and will include the Windows SDK, C++ support, p-code support (40% smaller for 5x slower), and a conservative cross-platform (Mac too) class library suite, AFX.

AFX is the harbinger of the Cairo class structure. It seems that MS has decided to go for Windows compatibility rather than OOPC (Object-Oriented Purity and Correctness). This is a conscious choice (they described the moment of truth) and contrasts with the totally object-class-based Pink or PenPoint environments. This pragmatism (some would say market-driven wrong-headedness, though my instincts are elsewhere) is echoed in their choice of an object-oriented file system rather than an object-oriented database.

Comm Server, their OS/2 server-based SNA adapter (all the SNA stacks and protocol machines in the server) has the support of all major 3270 emulators, and looks tediously complete (this is a complement).

They are implementing OSF DCE RPC (they hired Paul Leach, the inventor) but without the OSF code.

They are continuing support of Sybase's SQL Server including Open Server (which they have renamed "Open Data Services") and MS-provided cursor-based embedded SQL in C, VB, and Cobol (Microfocus was there, I just remembered).

They are rolling out their DataLens, ODBC (Open DataBase Connectivity) as an open industry standard (it's been adopted by SAG & Co, one can argue, by X/Open), contrasting it (favorably) with EDA, DataLens ("no critical mass because API side not evangelized"), and DAM/DAL.

They are building MAPI into Windows. I have to defer to Eric Halm and Ray Ozzie on the significance of the details, but it appeared to me that MS intends to give away with Windows the functional equivalent of the server side of cc:Mail, with interfaces provided for Lotus Notes (mentioned by name in the presentation), Simple Mail Interface (SMI = LMI) mid '92. Full MAPI 1Q93.

Finally, they have a real research institute now.

General Observation and Recommendation

Microsoft is inviting us to leap onto this juggernaut and help steer it. We should take them up on this.

MS Made Presentations On:

Strategy, Windows 3.1, Pen, Multimedia, Windows APIs, Windows NT, C 7.0 (MS C++), AFX (MS Windows class library), SQL Server, Comm Server (MS SNA), RPC (MS DCE), MAPI (MS OMI), ODBC

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(MS DataLens), OLE 2 (MS AFID), Scripting (MS AppleEvents), Cairo (MS Pink), Research, Gates

These are summarized above. Joe Guthridge has done an excellent blow-by-blow account of the sessions, which I will post in the common:\ms\SDR3 database. Other recipients should feel free to post their accounts directly into the SDR3 database.

Take away

I have a copy of the MS Systems Design Review III Compact Disc, which contains:

MAPI, ODBC, Pen Windows SDK and Documentation, RPC, Win31 Documentation (Application Compatibility Checklist for Windows 3.1)

I also have a copy of the MS Multimedia Development Kit

Promises

They to us: PowerPoint slides from briefing, April Windows survey data, EB proposal

We to them: Container file and other OLE 2.0 feedback, updated product survey, support discussion.

Discussions

StarWars trash compactor scene

As is probably apparent by now, every vendor in the room was impacted in a serious way by one or more agenda items. It appeared that while it was still vaporware, MS had designed the crystal lattice of its solid operating system to include a few imperfections (like native Novell, DB2, and Notes servers). Most vendors seemed worried about whether, within the emerging crystal lattice (or the compactor, or choose your own Metaphor) there were enough degrees of freedom left for them to succeed as a business (or keep some liquid assets, to torture a concept). *Observation: everyone is worried about the same thing.*

The Windows 3.1 Style Guide (we won one)

During a summer review of their plans, Microsoft gave out a proposed style guide for Windows 3.1. We discovered, upon reading it, that it was heavily biased towards the MS application suite (PowerPoint selection model, Excel Navigation, Word for Windows style guide, etc.). Richard Wolf arranged a meeting of all concerned ISV's at ccMail in Mountain View, at which we agreed to individually respond to Microsoft with a set of four common complaints (divergence from CUA, MS Application style, etc.) and each company's specific problems.

This was effective. We found out at this SDR that MS pulled the style guide from 3.1 and is now inventing in an open process to arrive at the next style guide.

EB licensing

Steve Ballmer committed to send Lotus the Embedded Basic proposal (specs, business terms, timing) we have been promised. I intend to follow up with him.

Lexicographic tool API

In a discussion with Gates, their lexicographic tool strategy came up. They have an API (Houghton Mifflin indicates that it is a limiting API) for mapping on lex tools, so that they have maximum flexibility in each linguistic sub-market. We should work with our lex vendors and others to establish a robust open standard in

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this area. This should not be a difficult interface, but it must be modern.

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Gates indicated that MS was considering adopting QuickTime as part of a Multimedia standard. This was just a mention, but interesting.

OLE 2 and Bento

Tony Williams (Mr. OLE) indicated that there was still time to architect the container for OLE 2.0, and that he was very willing to consider a cross-platform proposal. This is my follow up, via Apple/IBM, who have been slow to involve MS in the emerging standard for PR spin control reasons.

SGI server

Forest Bassett told me that the role of SGI software in MS is as a server-based (NT-based) visualization engine. MS confirmed this during the discussion. We should leap to understand the significance of this. Imagine Multimedia Freelance with 3D photorealism clipart or a SIGGraph animation.

DEC Teamlinks

Was not mentioned once in any agenda item or side discussion. *O DEC, where is thy sting?*

Userland Frontier scripting language

Winer demo'd this to me. It's a unique language (not Basic) vaguely Rexx-y, with an outline-based editor (shades of Ami Basic!) and an AppleEvents interface to the world. Winer seemed well wired in to MS. A cross-platform scripting language? And see the next item:

Apple/MS collaboration on Event taxonomy

Gates told me that he is collaborating with Apple to produce the same set of events for AppleEvents and the Macro Manager -- OLE 2.0. The Apple-side information we know corroborates the likelihood of this. The downside is the notion that Excel might, for example, define the spreadsheet AppleEvent set. Apple has told me in the past that they don't want this to happen, and they want us to help with the definition of such AppleEvents.

IBM/MS relationship

Balmer spent ten minutes bashing OS/2 2.0 and IBM, then stated that MS and IBM were normalizing relations. On the other hand, I met an old IBM acquaintance at fall Comdex whose job is to work with MS in Redmond on NT.

Excel HP LaserJet performance

Competitive factoid: Excel 3.0 has a special device driver to optimize HPLJ use when sheets contain only characters.

Windows 3.1 floating point exception handling

I happened to overhear Cameron and a developer from SAS (I think it was Mark Cates) discussing the fact that SAS could not be viable until it got a new version of Windows 3.1 that fixed the performance problems of floating point exception handling in Windows. Mark stated that there was a major performance difference

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between DOS and Windows in floating point exception processing (he said it was the difference between a viable and non-viable SAS product (SAS is mostly Fortran) in real customer situations), and the Windows development manager he was talking to absolutely acknowledged that there was a problem, and that he was going to try to insert a fix into the system, with Cameron's intervention, between Beta 3 and Gold. This felt like a deniability setup to me. It also led me to wonder if Excel has a special case FP exception handler that is part of its performance story. *Have we looked at this?*

CD ROM software distribution

Three speakers made a big deal about the virtues of CD Rom distribution. Gates mentioned that the cost is so low (he said \$1.50/CD) that it's almost cheaper to ship more. He stated that this was how he saw handling the ANDF problem -- just ship all the binaries. Even as an ANDF zealot, I must admit his approach has a certain crude appeal. Rob Glaser (Mr. Multimedia) stated that MS was committed to sending Cool Stuff out via CD Rom, such as the Multimedia version of MS Works. The demo they gave, of Zendar the MultiMediaMagician berating the user for not exploiting the style capabilities of MS Works Write (or whatever it is) is either Cool, Way Cool, or Totally Aggravating.

OSF

Paul Leach told me that MS wants to ship DCE RPC without using the OSF code. Since MS is a member of OSF, this is perfectly legal. It does make one wonder, however. In a way, Microsoft might see itself as better OSF than OSF -- they have a sort of open process and SIGs (the ISV reviews), they have a research institute with a leading light (Rick Rashid), they have an operating system product with a Posix interface (NT), they have standards for Macros, Embedding, Linking, DataBase Access, Comm Access, Mail, ... they have an open driver interface (the SPI), they have an ANDF solution. They even have an annual user meeting (Fall Comdex).

What if Lotus looked at MS this way? Not as a threat, but as an opportunity for intelligence gathering and active involvement in the direction of the industry. If we add to that the opportunity to get involvement in their systems product launches (they prominently feature Notes and Ami Pro in the OLE list), we may be able to get tangible benefits out of the relationship.

By the way, we should join OSF. I was just about to do this when Frank left. And OMG.

Lotus bashing

Was all in private. Several attendees expressed dismay about 1-2-3/W and Lotus' perceived problems. One comment was that I'd better get to Borland quickly while there are still jobs left on the acquiring side of the next Kahn takeover. We all tried to be amused but earnest about the promise of the future and the strength of the Lotus product line as a whole.

Ami UAE from OLE

Following Microsoft's recommendations to the letter and working directly with the Microsoft team, Ami shipped Ami Pro 2.0 with the OLE libraries. Word for Windows 2.0 shipped shortly after with a "new" version of the OLE libraries. When WinWord is installed after Ami Pro, replacing the Ami Pro versions of the OLE DLLs, Ami Pro UAE's when doing OLE operations.

MS is very embarrassed about this. It's not clear who pulls back product, or what is going to be done. I had Tony Lewis and Cameron Myhrvold talk to Joe Guthridge about this problem, and I assume a solution is on the way.

Cameron asked what this implies about shipping Windows function early by letting developers ship

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pre-release DLLs. I had to admit it doesn't look good. It's not clear how a non-MS product gets the early ship advantage safely. However, we have to find a solution.

I'm beginning to believe it may be a good idea to have someone on site at all of our major partners, including MS.

HP - Microsoft NewWave/OLE collaboration

There appears to be little substance to the press reports of this. In particular, the HP NewWave architect (Doug Smith) involved has not been at MS since the summer OLE 2.0 review.

OMI

Ray Ozzie said that he and MS worked out a compromise about MAPI and OMI which would allow mutual survival to continue as the marketing wars rage. It would be nice to find a way to avoid the coming OMI/MAPI media campaigns.

Working Together critique

Gates was not impressed with our Working Together suite. "A.B.C?" he said scornfully when I started talking to him. I explained that we were plowing through A into B, and that our dialog boxes would look alike in the next releases of our products. It's pretty clear, though, that he's aware of our messages and their current weaknesses. And that we have to step up to them.

Adobe/Lotus/Novell printing subsystem

I spoke with Kyle Powell, one of the Novell Subset team, about doing a joint Adobe/Lotus/Novell printing solution (I did not mention to him the proposal I made to Will Reynolds for this to be one of the material parts of SmartSuite.) Since returning, I've contacted Paul Gustafson at Adobe, who is very supportive. We need to get this funded, and get the architect on a plane to Provo as soon as possible. Ideally, this should be ready for the Windows 3.1 launch, at least in demo form.

Details on request.

MS mentioned that Adobe might be doing an IPS postscript driver for Windows. Gustafson confirmed this. We need to know about this and optimize our products for it.

TrueType optimization for HP LaserJet

The HP LJ driver in Windows 3.1 has been optimized for TrueType integration and optimal use of the HPLJ character sets. We need the equivalent for ATM.

Conclusions, Recommendations, Suggestions and Thoughts

Working Together

All Lotus attendees felt it was clear that Microsoft can pick off each of our individual products one by one, and that Lotus has its best hope in continuing and strengthening our current working together technical strategy. Lotus' appeal to MIS is as a credible second source for an integrated portable, OA, and communications suite. In particular, we must really pull together to implement the Appearance (Common UI and scripting language), Behavior (Common components, data formats, and component UIs), and Cross-Platform directions we have advertised. We must strengthen our resolve and put in place and open planning and commitment management processes.

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Harmony

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We should focus Harmony on being a Windows 3.1, Novell network-based, simple install version of the suite minus Notes, and at a particular target -- the current Novell install base. Further, we should get Microsoft to feature it as an example of something done with either the networking improvements in Windows 3.1 or the networking improvements in Sparta, depending on timing. A major part of this effort should be solving the problem of Network-based printing, which MS has not yet attacked, and what Kyle Powell of Novell and Paul Gustafson of Adobe agree is easy to solve and has simply never gotten the attention it deserves.

Retail

Dan Bricklin suggested that the Working Together strategy does not provide a reason for someone to buy a Lotus product in a computer store, and that we need to focus on our differentiation for retail customers.

One possibility for such a message is accessibility and fun for first-time users. This is certainly credible with Freelance, Ami, and cc:Mail (once installed). David Reed and Pito Salas have good ideas about how this could be made true for spreadsheets.

Cable

Forest Baskett suggested that cable, a high bandwidth carrier that is virtually unregulated (except for the impoverished local governments to whom it pays franchise fees) is the likeliest candidate to be the digital delivery vehicle of the future. With such a high bandwidth connection, Notes would be a terrific replacement for Prodigy, especially if we exploited RSA security and enhanced Bill Bloom's work to provide for home ordering of all products and home delivery of digital products such as software, courseware, games, and product information.

Ju Jitsu and the Lotus - MS Relationship

Although there are hazards, we should find a way to become a real partner with Microsoft, rather than a sparring partner. We will be far more effective if we actively engage them through all the technical review mechanisms they have set up and in our marketing messages than if we oppose them. There are plenty of common interests. They are offering access to their emerging technologies to anyone who wants to participate. We have evidence (the UI discussion) that we can in fact stop MS if we organize a loyal opposition. We are in fact ideally poised to lead the opposition, since we are the most credible application suite provider outside of Microsoft.

Tools and the Lotus - Borland Relationship

MS is running its open tools workshops, but Intel is sponsoring another open tools process, based on getting the same binaries (both object and load) for all Intel platform tools. The new Unix (V.4 and OSF/1) have both DLLs and the loader switches (the ability to handle multiple binary formats). Apple is trying to figure out what to do about Windows in its tool suite. We and Borland have a common interest in this area, which is to push all parties toward a single binary format for 32-bit DLLs and EXE's on all x86 platforms. With such an arrangement, our behavior layer would be absolutely the same binary code, and our lego layer a set of DLLs per platform. Having a common interest with Borland would be a good thing for many reasons, with more open communications and trust high on the list as they are on the Microsoft list.

Walden NT

As I have told someone who will listen (a promising number of candidates), I would like Walden to be the

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should send Mussie to MS for six months, but it does mean that we should be involved with the evolution of NT and the MS standard interfaces, so that they are ideal for our needs. Although painful, this is the type of involvement with the platform that is most likely to ensure the success of the product.

The changes to Walden are primarily to simplify the implementation by making it a pure 32 bit product (i.e. forgetting 286-based systems) that can operate within the Win32s API and employing the Win32s API subset to let the pure 32 bit binary run in regular old Windows 3.1 (on a 386 or above).

DataLens

We should replace DataLens with ODBC by the end of 1992. Our DataLens team has been tracking ODBC/SQLC. They have told me that there are some issues about the SQL-specificity of the interface (we're more general), the inflexibility of the UI for driver startup, international characters, cross-platform, and the completeness of the ODBC capabilities system, but these and some market recognition (*the new, merged Microsoft/Lotus ODBC/DataLens interface*) could be worked with MS as a quid-pro-quo for our adopting ODBC. The advantage is that we could get out of the DataLens toolkit and driver business, and can focus database vendors on a single driver for all Windows (and other) applications. The disadvantages, as I see them, are that we lose the (declining) value of the fairly well known DataLens concept, we can no longer differentiate on the basis of our database driver suite, we give up some degree of Lotus specificity (such as LMBCS), we have to redo our cross platform without additional work, and we have to reengineer our products to some extent. Doug Bayer supports this.

Scripting

Painful as it is, we should get someone to look over the Embedded Basic proposal (if we in fact get it). At least we will be making a conscious choice not to simply use what may be a built-in service.

Customer Support and Windows

Microsoft would like to train us and provide us with the databases to handle Windows support calls. Since users typically don't distinguish between Windows problems and product problems, this seems to like a good idea from a customer satisfaction standpoint. As long as we are charging for service on the 900 numbers, we may as well be able to answer common questions about Windows and have a clear escalation path to MS. I would be happy to set up a meeting between MS and support here to discuss the proposition.

Multimedia

Bill Gates indicated that MS was willing to consider standardizing around QuickTime. This implies to me that the initiative Rob Lippincott is spearheading to get a framework file format adopted, based on Bento and Quicktime, might in fact succeed. See below.

Container Files

I reestablished contact with Tony Williams (the OLE architect at MS) and let him know we would soon be able to talk about containers. Today (12/20), Apple finally agreed to let us talk to Microsoft about the Bento proposal. I spoke to Tony, and we agreed we would get together as soon as possible; although it looks as though it not be until the beginning of next year. Tony believes we still have time to influence the multi-stream container format for OLE 2.0. The tie-in between Bento and Multimedia is that Bento appears to be accepted by the organization that will turn into Kaleida next year, which implies adoption by Apple and IBM. In moments of wild surmise, one hopes that Bento (and the QuickTime architecture) will provide the

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