

For your awareness this one is worth reading. John Patrick & IBM\_INTERNAL, John Patrick & SOMLANDI

To: Susan Fairty & SOMLANDI & IBM\_INTERNAL

cc: IBM\_INTERNAL

From: John Landry & LOTUS & IBM\_INTERNAL

Date: 11-06-95 07:48:24 AM

Subject: Sweeper Trip Report

This is very interesting, if somewhat long, reading... distribute as necessary.

To: Jeffrey R Beir & Lotus, John Landry & Lotus, Mike Zisman & Notes, Jeffrey Papows & Notes, Ray Ozzie & Lotus, Barry Briggs/CAN/Lotus & Notes, Peter cc, Michael Welles/CAN/Lotus & Lotus, Steve Sayre & Notes, Michele Hagan/CAN/Lotus & Lotus O'Kelly/CAM/Lotus & Lotus, Steve Sayre & Notes, Michele Hagan/CAN/Lotus & Lotus

From: Phil Stanhope & NOTES  
Date: 11/05/95 11:13:21 PM  
Subject: Sweeper Trip Report

I'm sure that there are others that should receive this... to many for me to remember at this time. However, I'm told that a decision is to be made tomorrow (Monday) regarding NoteScope, Java, etc. I think that the information provided here is new enough that it should be taken into account as part of any decision process. This information is new to many Microsoft employees as well. Some of their own groups where briefed for the first time on Friday.

-phil

#### Executive Summary

"Sweeper" is the term that Microsoft is using as a banner for all of its internet related efforts. Microsoft gave 6+ presentations during the marathon 1 day design review. Microsoft, as per past reviews, was quite forthright in presenting their plans. They clearly had put this together rather quickly and at times it was clear that the various speakers had conflicting agendas, delivery timetables, etc.. Attendees from Lotus were: Phil Stanhope, Noah Mondalohn, Jeff Buxton, and Insaik Rhee.

The following presentations were given and a more detailed reports about each session are included at the end of this document:

Sweeper Overview  
Sweeper Architecture  
OLE Documents  
Sweeper Components and Services (including Scripting)

Win32 Internet API Extensions  
Security

Microsoft has made major changes in the internet/online strategy in the past six months. The last major change was in July when they changed direction over a three day period concerning the positioning of MSN/BlackBird versus On-line services. At that time Microsoft changed from an apparent position of competing against the on-line services to one of participating in the WWW. The speed at which they changed and the reasons why were obvious: Netscape and the geometric growth of the WWW.

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In July they repositioned MSN/Blackbird as yet another authoring tool for the WWW and that MSN would be available as one of the premier WWW sites to visit. They also promised that they would serve up two versions of their pages -- the MSN version and the HTML version. They also indicated that they would make available a helper application for use in WWW browsers that would make the Blackbird authored pages come alive.

Microsoft has switched gears again. The overriding message is that the WWW is big, big, big. But they are also terrified of Java. They spent much of the day either attempting to derail Java (it's not really secure, it's immature) while at the same time they spent about as much energy not smashing Java per se but rather Sun saying that it was the only reason that they couldn't support Java. This particular argument and the resulting exchanges/issues did not die down throughout the day. I was told outside of the conference by Chris Jones, the chief evangelist for Sweeper, that they can't attack Java because half of the developers in the room would abandon OLE Controls in favor of Java for publishing the Multimedia based content that they're depending on to compete against Netscape.

Numerous people pressed them on the Java issue and their less than capable explanations on their positions. They said that they would license Java -- or any scripting language -- if the terms were \$0 to redistribute. I pointed out that the Java is redistributed freely by Sun. What you, as a licensee, pay for is the right to work with the source code, port to other operating systems, integrate into applications, and help direct the evolution of the language. Surely they weren't complaining about a few dollars per user -- for functionality that the user wants. Lets perhaps bring up their own licensing policies when it comes to OLE/2 and MFC!

Microsoft also took the public position that one could write OLE controls in Java. Noah and I pressed on them to show us how. They backed off and then said that it should just be possible. They also took the position that Java exploitation of Win32 specific features would be incredibly difficult. They are absolutely deluded if they actually believe this rhetoric. Numerous developers came up to me during the breaks to inform me that they had already wrapped the significant subsets of the Win32 APIs as Java classes in order to produce Win32 optimized Java applications.

Microsoft needs to be kept on the defensive here. They are dedicating huge resources to their anti-Java, pro-Win32/Control effort. They will not diminish their support of Win32/OLE Controls. They can't. Their entire architecture is based on it and to the extent that they succeed, Lotus' Component efforts will succeed. Microsoft is not focusing on Notes whatsoever in this space. This can obviously be viewed in a variety of ways. In an attempt to deal with Netscape I think that they are playing into our hands for Notes/InterNotes/Components, and Win32. Here is my assessment of Microsoft/Lotus weaknesses and strengths in these areas:

#### Microsoft Strengths

#### Microsoft Weaknesses

Single consistent message: Win32 and OLE

Notes

Resources and Money Win32 only

Very strong technical culture Not focusing on Control Marketplace

No tools support (VB4

Distributed management and operational expertise

VC4

can't support the interfaces unvolved)

Willingness to Hack and ship Lack of understanding of Java security

Proposed security -- conflicting messages and virus control

Inadequate property issues  
Download and installation model for controls  
Cache management for downloaded controls  
Mixed message on COM interface (some APIs are COM, others are not)  
Firewall issues

#### Lotus Strengths/Lotus Weaknesses

NotesV4 and InterNotes Lack of Control compliant container (V4.0, Binder, ...) Component Loader (Intellectual property management) Mindshare (lack thereof.) Component Authentication Win32 technical leadership at management level Component Installer Lack of dynamic Notes Ready Component Server based objects (LSX and OCX) Lack of dynamic templating capability Control-centered templating Free VB interpreter, compiler, idea availability in Q2/Q3 '96 Leverage all of Microsoft's work (10-20 freely redistributable controls) Script on a server (Notes or WWW)

#### Recommendations

We should aggressively move to not only take advantage of any success that Microsoft might have in this area, but also work at the same time to foster platform use of Notes, InterNotes, WWW services (WebRun and server based components), Lotus Components (including LSX), and Java. This is a tall order, but IBM/Lotus is the only company in any position to do this.

Microsoft is placing all of its 'lets behind' OLE Controls while at the same time it is ignoring the emerging marketplace because they're the only game in town as far as having the requisite tools to build them. Furthermore, in response to Netscape they're making many core controls freely available. There was much grumbling on the part of control developers that they were being put out of business. Luckily for Lotus, the focus of free controls seems to be in exactly those areas that we have not focused on. Rather, Microsoft is focusing on WWW (browsing, multimedia, viewers). This is of benefit to us because these controls will be readily usable in Notes thanks to the efforts of NextGen and Iris over the past few months.

Notes 4.1 OCX Container (plus subset of OLE Document interfaces)  
Developer Conference for NextGen Provide Win32 technical leadership within IBM/Lotus Capture ownership of Control Marketplace Script as OLE Scripting Control LotusScript on the Server (LabVIEW) Control-centered Templating (versus MS' container-centered) Suite OLE Document Work Java Controls Control/Java/LSX Wizard NextGen Toolkit Enhancements (IPrint, IOLEDocumentCommand, IPersistFile, IHLINK) Win32 Cryptography support WWW server replicated server farm

Chris Jones

This presentation focused on the overview of Microsoft's internet strategy. I have the hardcopy slides. We're asking MS for "electronic versions". MS evangelists were in a hokey "give us your feedback" mode. It's not clear how much feedback and perhaps mis-direction we can provide on them. The interfaces that were unveiled were in fact all of the interfaces that were being extracted out of their applications -- I question how much they'll be able to change those core interfaces since they have either shipping or near shipping product based on these vary interfaces.

Microsoft focused on the problems of HTML /HTTP and why they had better answers for the Win32/OLE space than Netscape et al. One area that they seem not to have considered that came up here in Cambridge during the Java Architecture Summit last month is that most corporate firewalls will soon not let anything but HTTP through. Microsoft seems to be have a dependence on back-channels that are fine for consumer focus through MSN, but not necessarily through corporate firewalls. We have an opportunity to exploit this issue with Fortune 1000 companies -- particularly if Landry's NoteScape over stock HTTP comes to fruition.

Microsoft will be making available as OS level services many of the core APIs that we'll need to better exploit the WWW. More on this later.

They've gone into beta testing with "Gibraltar", their WWW server integrated into NT Server. This will be made available in a more general beta in December. On the one hand it would appear that they'd have a lock in the WWW server market for NT, however, there security model is different than that of Netscape. Be prepared for some fragmentation/battling going on here.

The server will be extensible via DLL add-ons. We could utilize this to put Script and Notes backend on the server. This is a huge opportunity!

They announced that they'll be making a version of VI freely available (including redistribution) as a control in Q2/Q3 96.

They defined some new interfaces (particularly FullScreen) for WWW content/multimedia that appear to violate the current Container/Server semantics. We need to better understand controls that implement these interfaces will do to Notes.

They took on Java's security model -- or their view of it. It appears that they have a shallow understanding of all of the Java capabilities. They chose to take the view that Java was difficult, really insufficient security, that they would do better. It turns out that they have documented nothing beyond channel-based security for a WWW client/server connection. They also chose to attack Java as interpreted. Again, it appears that they don't understand what Sun wants to do OR, more likely, choose to put forth a message solely for the purpose of misinformation.

It's to note that the very issues that they site as to why Java isn't sufficient (lack of an object model, packaging, and secure callout) are exactly the very issues that we're raised at our internal Java Conference last month and that resulted in the JCX (Java Control) proposal that came out of the two day conference. Microsoft could be hurt tremendously if we're able to produce JCXs that are compliant OCXs but also work across platforms.

"They announced a internet control developers conference to be held in Redmond the first week of December. Lotus should send as many people as appropriate --

this is not just about Controls. It's about Internet, Messaging, Network OLE, MSN, and other related technologis.

Frequently asked questions for this session:

Will they support transparent marquee's?  
No.

Will they support the PNG image format?  
Yes.

What about state management for HTML?  
HTTP cookies.

Hardware for the demos?  
P120 and PowerMac 9500/120

Distribution? Delivery of Sweeper?  
PDC in March, Q2/Q3 Ship.

Gibraltar server on Win95?  
No.

Style Sheets?  
No.

Internet Explorer broken into components?  
Q1 beta. Q2/Q3 ship.

Redistributable components?  
Yes. (They backtracked later in the day and said only some would be....)

OCX built in Java? Have you built one?  
No.

Toolkit for Java Controls?  
No.

Will they license Java?  
No.

Frame Support?  
Yes in PDC.

Design time/runtime split for Controls?  
They will address this next month.

Win 3.1 support?  
No.

What is position on MSN?  
Premier place to go as a WWW site.

VNC?  
Yes. Licensing technology from Intervista. I pointed out that they have no problem licensing technology from a small company when it suits their needs, but when it comes to licensing something from Sun/IBM/Lotus they resist, even if it would benefit the customer.

Sweeper Architecture Overview  
Victor Stone

The message was clear and simple: Win32 and OLE. They, however, are publicly talking "Open Systems". They're hanging their hat on a technology that is language and tool independent. This is pure marketecture. The architecture is NOT open, despite their positioning.

The only tools available to build controls are VC++/MFC (we won't even get into their licensing demands for MFC which from what I understand are much more draconian and costly than Sun's for Java).

The Internet Explorer and the pages that HTML BlackBird pages are not documented.

The Internet Explorer is targeted to using VB. It's not clear at all how an alternate script engine could be used.

The OLE Scripting extensions for customizing objects are Container/Authoring environment driven -- not Language/Control centered.

Apart from the above, much of what they're showing as "OS-Level" interfaces are in fact interfaces gleaned from their "shipping/about to ship" applications.

They've proposed OLE interfaces that will make the difference between a file on the internet, local file system, or remote computer be negligible. Unfortunately, since this effort has come from the applications group and not the OS group there is not a consistent API set.

The work of a control developer is greatly simplified. At a minimum one need only implement about 6 new interfaces to be a "Internet" control. Unfortunately, HS has not integrated this work into VC4/MFC. If this picture doesn't change by next month, then each and every end user will have duplicates of the core controls (.SMB) plus new runtime libraries (2MB). One thing that they talked about was that there would be a new version of MFC to better address working set issues... I pointed out that for 18 months they've been pushing folks to produce controls and there will be hundreds of controls on users' machines that are built against MFC4 by the time they get their new release out. They won't be decreasing working set but it's quite likely that both MFC4 and Internet/MFC4.X controls will be running in the same container at the same time (I was thinking about Notes and VB4 in particular).

They proposed on slides -- but not in any collateral specifications -- new enhancements to OLE Controls to better support design time/run time. When pressed they said that they would have more information next month. Regardless of what they provide, this is yet another area where those existing tools can't help folks beyond hand coding the changes (no native MFC/Wizard support). This is an area where they have an advantage, however, since VB4 supports binding to an exported interface in an OLE object beyond the default dispatch interface -- this is something that LotusScript can't do and isn't planned as part of the current 3.1 feature set.

They have also pushed more work onto containers. Again this was only on "a" basis. No specifications/guidelines were provided. This is not surprising that they would do this because there are so few containers today. Furthermore, work by Shane Hartman of the Script Group has found that VB

(which supports design mode scripting) and MFC based container code (which doesn't support design mode scripting) both don't trust the controls that are embedded and resort to low-level manipulation of the base window and message pumps.

#### Frequently asked questions for this session:

Who drives function groups and rules?  
MS says and that people who are interested send mail to [internet@microsoft.com](mailto:internet@microsoft.com)

Guidelines for Design Time?  
MS will provide in the future.

What are improc loading enhancements? When will they be available?  
Performance tweaks only. Next release of OS.

When will the next OLE release be shipping?  
Wouldn't say.

Setup and Install issues? When will it be available?  
Have competing internal technologies. Wouldn't say.

Internet browser and mail integration?  
HTML. What about CNS? HAS THIS DIED?

Elaborate on the Multimedia function group?  
Contact Sara Williams. [Sara@Microsoft.com](mailto:Sara@Microsoft.com).

#### OLE Document Architecture Richard Wolf (former Lotus employee...)

They unveiled the OLE interfaces that support the Binder in Office 95. MS has also made a bit of press recently talking about OLE Document Architecture and how it will be part of their "optimized" suite available Q1 '96. They've come to the conclusion that to fight Netscape and bring end-user content to the WWW from their Applications Groups that they must make the interfaces available in general and that they are core to the next release of the Internet Explorer.

In summary, they provided interfaces for handling Printing, Help menu, integration, Command integration. These are all areas that NextGen has been working on but has not been able to resolve for Notes 4.0. Microsoft has now set the standard. Notes 4.1 should support these interfaces because it will not only benefit NextGen but will allow the tighter integration into Notes Office 96 applications.

This is a clear area of work for Suite applications. The specification that they released should be examined in detail and some number of the interfaces should be implemented ASAP by Lotus applications and be made a requirement of the NextGen toolkit.

In particular, they've made an attempt at addressing a fundamental problem with OLE -- printing compound documents. The published interface is simple. Should be implemented in Suite 97. They've also made public an interface that we've been struggling with inside of NextGen -- how to cause commands of the parent to be signalled from the contained object (server). This is a problem for all extant OLE in-place servers and this is Microsoft's official answer.

The interfaces will be added to NextGen's toolkit as appropriate. They provided no interfaces for Undo/Redo integration. This is an area that NextGen decided -- in the end -- to drop because so few controls have the necessary infrastructure to actually support Undo/Redo.

Frequently asked questions:

When will VC4 support OLE Document Objects? No Idea. Tools groups were in the audience and hearing for the first time these proposals.

Lightweight Viewers are thus pushing a portable DOC format? No. Native format with viewers. Otherwise HTML. When will viewers be available? Wouldn't answer.

What are you doing about edit/view issues? No such distinction. THIS AN AREA TO PUSH ON! Issues around retrieving documents? GUID related more to date. Want way to treat GUID as Edit/View. There is apparently an MSDN article that describes method of mapping MIME type to GUID. Launch to edit from the viewer? No support for this.

Sweeper Components and Services  
Victor Stone

First part of discussion was about Monikers and related new COM interfaces. I missed this. Noah Mendelsohn will provide details for this. The second part of this session was dedicated to OLE scripting (VBS) and announced that it would ship for first and be redistributable next year.

Frequently asked questions:

Will you provide/support dual interfaces? A well behaved container will support this. It's the script engines responsibility.

Multi-threading support for data retrieval? They suggested that you create a new thread and start a synchronous retrieval. Is apartment model threading sufficient? Absolutely. Container must have message pump (duh).

Where will dynamic navigation work? Encapsulated in URL Moniker.

Will OLE Controls get removed from cache (of Internet Explorer)? Haven't received problem yet.

This is a serious problem for intellectual property rights. The cache is actually a local directory where OCXs are downloaded and registered. Removal

from cache will require cleaning up the registry.

What if a control has dependencies? Will they be installed each time they are downloaded?

These are issues that we've thought a great deal about in NextGen - apparently much more than they have -- or are willing to acknowledge.

Will OLE Scripting sit on top of VBRun? No. It's a new portable version. Has support for PCODES instead of XCODES. Apparently XCODES are x86 specific instructions that the are capable of opencoding. EXPECT VB5 TO BE SLOWER THAN VB4!

What is the model for charging for download of components?  
No answer.

#### Win32 Internet APIs/WinInet Leo Hart

This presentation focused on a collection of Internet related APIs that will make FTP, HTTP, Gopher much easier to program. The WinInet api's are at the base of all of the new moniker work. The support DLL is fully redistributable and will be moved to the OS.

We should adopt using these interfaces for NextGen related projects. We need to find out the legal/licensing issues of licensing pre-release code from Microsoft. We should not embark on writing our own version.

MS provided a beta of the DLL and will provide another release next month.

The basic APIs support opening secure channels to servers (based on their new security API's that have yet to be approved by NSA). If we're to use these secure channels we would most likely have to use their WWW server. This is problematic.

Frequently asked questions:

Any facility for byte ranges in the URL cache?

No ... then yes much later.

Can you cancel synchronous calls?

No.

Will the FTP api's do MGET/MPUT?

No.

What about retrieving PAGE at a time?  
Use low level APIs.

Can additional protocols be added?

No ... than yes.

What about NNTP? TelNet? Archie? IRL?  
No. Perhaps Archie in the future.

What about parsing HTML?  
No. But our viewer will provide hooks/events for handling tags. Not very clear