Erik Stevenson

From: Brad Chase
To: bradsi
Subject: draft of ms-dos 7 plan
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thoughts?

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INTEROFFICE MEMO - DRAFT

Date: 10/20/93

To: Bill Gates, Steve Ballmer, Mike Maples, Paul Maritz, Brad Silverberg

CC: msdosmgr, braddir, Richard Fade

From: MS-DOS Team

Subject: MS-DOS 7 Strategy

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The purpose of this memo is to present recommendations and discuss alternatives for MS-DOS 7. Some of our thinking has evolved a bit recently.

EXECUTIVE SUMMARY

MS-DOS 7[1] should designed as essentially Chicago that boots up to a "c prompt" (a vm) and does not run Windows applications except for those applications necessary for system configuration (example plug and play, multi-tasking).

We do need to have a MS-DOS 7 because:

- In Japan in particular, Windows adoption is trailing the rest of the world. At least, one more strong version of MS-DOS is necessary for competitive reasons[2]
- For most of the rest of the world, MS-DOS 7 is more of a "protect the flank strategy." We want to keep IBM and Novell off the desktop. We also have a huge revenue stream at stake on the off chance that MS-DOS remains important.

Despite the sentimental reasons for a MS-DOS 7, neither of these reasons builds a strong business case for the product. Consequently, we recommend adopting a development philosophy where we spend as little resources as possible changing Chicago for MS-DOS 7. That is why, for example, we would not spend the considerable resources to rewrite Chicago system components with an MS-DOS UI for MS-DOS 7.

We should also consider a "MS-DOS 7 for Windows" product. This is a MS-DOS add-on product for Windows users. For those who have read the companion document, this is the MS-DOS Companion product, perhaps combined with the "Maid" product described therein.

[1] If Chicago is called "Windows '95" or something similar as paulma has postulated , than this product might be called MS-DOS '95 rather than MS-DOS 7

[2] Richard Fade and I have discussed this recommendation and he supports it. He guesses that Windows will have 55% penetration on new PCs when Chicago ships. That implies an important market remaining that requires a strong and competitive MS-DOS 7

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Objectives

Lets assume the following objectives for MS-DOS 7:

1. Profit
2. Keep Novell and IBM off the desktop with their MS-DOS clones
3. Show a commitment to MS-DOS

The real importance of the third point is debatable but we have told everyone in the community that we are committed to and working on a version of MS-DOS past MS-DOS 6.2 and so to some small degree our credibility is at stake.

The Alternatives

While some of these could be done in combination, there are basically the following alternatives for MS-DOS 7:

1) **Chicago Neutered**
   Create a version of Chicago that essentially does almost everything that Chicago does except it would not run Windows applications. Unnecessary components easy to remove, such as OLE would also not be included. Exception would be applications that are necessary for system configuration (example, plug 'n' play). You would specifically not re-write any part of Chicago for ms-dos unless you absolutely have to.
2) **Chicago Neutered +**
   Build a stand-alone MS-DOS 7 product from Chicago technology. Key parts of Chicago tied to Windows (pnp, multi-tasking, etc.) would be re-written with an ms-dos ui and other ms-dos unique functionality might be added
3) **Chicago Add-on**
   MS-DOS 7 is an add-on product for Chicago
4) **Real Mode**
   Create MS-DOS 7 from the MS-DOS 6.2 code base
5) **No MS-DOS 7**

The Logic Behind recommending #1

- #3 and #5 are not possibilities because Japan needs one more at least one more stand-alone version of MS-DOS for competitive reasons and because Novell and IBM are material enough threats that we do not want to only have 6.2 to keep them off the desktop.
- # 4 is not recommended because it is inconsistent with Chicago and not as strong a product as #1 while taking more incremental effort

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- #2 is not a good choice because it is a lot more work than #1 and is not likely to garner a material amount of extra revenue. Plus this product will take longer than #1 and be harder to localize.

Chicago Neutered gives us the best combination of a strong, timely product that is easy to localize and requires the minimum amount or resources. It forces the MS-DOS and Chicago teams to work closely together to ensure excellent MS-DOS compatibility for Chicago and it also reinforces the ubiquitousness of Windows since MS-DOS contains Windows components.

Its main downfall is that the press will quickly realize that MS-DOS 7 is a version of Chicago. There will be some disappointment in our unwillingness to rewrite key components for MS-DOS. However, if priced properly and handled well with the press (we decided to give people the new technology rather than rewrite it and give them something less) it seems like a minor complaint given Chicago's strengths.

Appendix A summarizes some of the differences between Chicago Neutered and Chicago Neutered +.

Business Model

The key question to ask is who would buy a stand-alone MS-DOS 7? There seems to be two basic audiences:

- The hard core MS-DOS users who hates Windows
- The PC manufacturer who is too cheap to spring for a higher Windows royalty

Neither group is large. In fact, over 80% of MS-DOS 6 Upgrade customers in the US use Windows. In Europe, the number is believed to be higher. It is hard to imagine that there will be any material number of customers who do not use Windows and are active software buyers that would be interested in MS-DOS 7.

While it is difficult to forecast the MS-DOS 7 business, a reasonable business case for is below:

	Japan	US/Euro/Rest of World	Total
OEM Units	900	300	1,200
Upgrade Units	200	500	700
Total Units	1,100	800	1,900

	Japan	US/Euro/Rest of World
OEM Rev/Unit	$16	$16
Upgrade Rev/Units	$50	$40

	Japan	US/Euro/Rest of World	Total
Total Revenue OEM	$14.4M	$4.8M	$19.2M
Total Revenue Upgrade	$10.0M	$20.0M	$30.0M
Total Revenue	$24.4M	$24.8M	$49.2M

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But what about the business case for a MS-DOS add-on for Chicago?

It is reasonable to assume that there are a moderate number of Windows users who are comfortable and or like certain aspect of MS-DOS or who would enjoy better support for their ms-dos applications in Chicago. The latest data the windows group has is unfortunately May 1992 but it does show heavy usage of the command line by windows users.

	win 3.0 users	adv	int	novice
base	267	99	88	80
frequently	43%	64%	36%	25%
sometimes	20%	13%	24%	23%
seldom	33%	20%	34%	48%
never	4%	3%	6%	4%

Although, command line usage has and will go down over time (particularly without this product), we think this can be about as big as the MS-DOS 7 business (with higher upside).

Channel	Annual Windows Volume	Penetration	Volume	Unit Revenue	Total
Upgrade	6M	7.00%	420,000	$40	$16.8M
New PCs	25M	2.50%	625,000	$40	$25.M
OEM royalties	25M	1.00%	250,000	$2	$.5M
Total			1,295,000		$42.3M

The decision to do this product depends somewhat on the overall strategy for Chicago currently being discussed. regardless of the final strategy though we should consider this very seriously. Revenue potential is good because we have 13 years of usage and brand name building to leverage.

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Appendix 1 - Chicago Neutered vs. Chicago Neutered +.

Chicago neutered refers to Chicago base modified to disallow Windows apps while still allowing GUI system components (control panel, PNP, winhelp, etc.) and third party software for add-in hardware. Some components which are easy to drop are also excluded (OLE for example). In addition some of the cool components (example Explorer extensions) discussed for the MS-DOS 7 for Windows product (see next section) would probably be added if we do go ahead and do this product.

Specifics on how this would be implemented are not yet defined (a list of ideas is provided below). Estimated development estimate for this approach is 3 months of a program manager and a kernel level windows developer.

This approach offers several advantages:

The majority of the OS code is common with Chicago. This substantially reduces the development/test effort and the possibility of incompatibilities between the products.

Avoids writing major new components to be CUI (shell, task manager, master installer, setup, help). Writing these components would be especially difficult since they are being designed for Windows and still being modified in Chicago.

Powerful OS for MS-DOS applications

We get the benefits of plug and play, Vxd architecture, etc. in MS-DOS 7

We could run MS-DOS apps windowed and cut/paste between them.

Following are some ideas on how we might disable GUI applications while retaining the ability to run system components:

1. Have WinExec search a defined list of allowable GUI programs before completing an Exec. If the program isn't in the list, don't allow the Exec. One issue with this approach is that we would need a way to add names to the list so that programs for add-in hardware would work (perhaps they could be added via PNP configuration).
2. Let all .CPL files run (this would allow control panel components to be run)
3. Only let one (or some low number) GUI program run at a time.
4. Limit memory for GUI apps (e.g. enough for control panel components, but not enough for apps).
5. Remove or restrict some important API (e.g. limit number of classes, windows, etc.).
6. Limit number of entries in a listbox, limited edit controls. Remove certain classes.
7. Eliminate or restrict some DLL's (common dialogs, etc.).
8. No DDE/OLE

9. No Print Subsystem (or possibly there, but only for MS-DOS apps)
10. Disable all printing from GUI apps other than system components.
11. Limit number of Windows/Classes a GUI program may have.
12. Limit number of DLLs.
13. Limit number of fixUps, Exports, and Imports.
14. If possible, eliminate 32-bit subsystem (may not be possible due to shell and other components being 32-bit).

Chicago Neutered +

This is a modified version of base Chicago with character UI (CUI) components to replace all necessary Windows components in base Chicago. Neutered+ cannot run any GUI apps (unless Windows 3.1 is installed). This approach is complicated by the fact that the Chicago components are being designed/developed in parallel. A rough estimate is that this approach would require at least the current MS-DOS program management, test, and development teams from now until three months after Chicago ships. Very rough development estimates (don't include test and program management) for the work are listed below. There are certainly other issues that haven't occurred to us yet given our additional 6.2 focus.

Tasks	Rough Development Estimate (person-months)
Plug and Play:	~6
Explorer components to access/edit configuration, Configuration manager, & Master Installer	
Control Panel:	~4
Ports, mouse, Device contention, Virtual Memory, Task Priority	
Setup/Backup (it is 100% GUI in Chicago)	~12
Help viewer (or convert winhelp files to quickhelp)	~1
Shell/Task Manager	~4
Program Manager and PIF editor	~4
Registry Editor	~2

Appendix 2 - Broad Feature spec for MS-DOS 7 for Windows

Message: The comfort of MS-DOS plus the power of Windows.

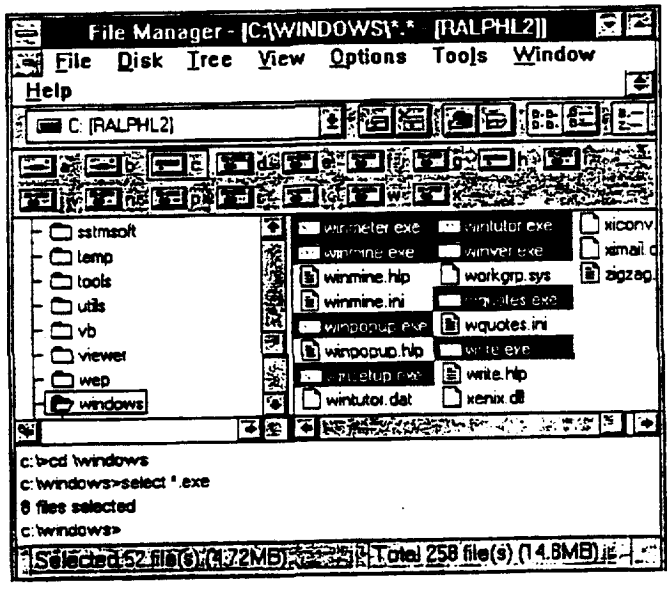
MS-DOS 7 for Windows would be for anyone who uses MS-DOS apps with Windows or just likes MS-DOS. It is essentially the same product described as the MS-DOS Companion in the companion product add-on strategy document circulated a month or so ago with the "Maid" functionality added.

Its feature set could include:

Super Windows command-line

The current thinking is to have a version of COMMAND.COM that ran as a Windows application and was merged with the Explorer. Users could run it split-screen with the Explorer, or full-screen and make the command-line their shell.

This command-line would combine the best of CUI and GUI. For example, "CD \" would both change directories at the command-line as well in the Explorer. Double-clicking on a file listed by DIR would start the associated application. "DIR *.TXT" could both list all *.TXT" files and highlight all *.TXT" files in the Explorer in the currently selected directory. You could even create new commands such as the "select" commands as shown below:



Users could tap into other strengths of Windows and, for example, change the fonts and colors of the command-line. A right-mouse click could bring up a list of the last N commands, and we could also provide unlimited scroll-back capabilities.

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VBA batch language extensions

Instead of adding scattered batch enhancements, as in MS-DOS 5 and 6, one possibility is simply to include the VBA interpreter and modify COMMAND.COM to allow the calling of VBA functions from batch files and support passing in of environment variables as parameters.

Maxcompress

An off-line utility to maxcompress a DoubleSpace drive, assuming we can solve the patent issues.

Screen Saver batch file execution

Allow the user to define a batch file to run when the screen saver turns on. We would provide pre-set batch files that ran Maxcompress, Scandisk and Defrag.

The Maid

The maid is utility designed to clean up hard disk clutter. It would be a bundle of heuristics that could, for example:

Put up a list of all files not accessed in the last 6 months

Delete all *.TMP and *.BAK files

Pare down Chicago to a minimal install, laptop install, home install, etc.

Remove all modem-based Chicago files on a system that doesn't have a modem

Duplicate files

Duplicate functionality, such as Smartdrv/Himem/EMM386 in \DOS and \Windows

You could get more aggressive and even try to build a database of files and what they do. This would help people know what files they could delete.