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here it is. it is a first draft so please don't flame too much. thanks  
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## The MS-DOS Companion for Windows

The document outlines a vision for a Companion product for Windows.

### Situation

Projectable research shows that 82% of MS-DOS 6 Upgrader purchasers use Windows. If we conservatively assume that 85% of users will upgrade to Chicago and not MS-DOS 7, then the MS-DOS Upgrade will implode from being a \$500 million business over the product lifecycle to an \$80 million business. Furthermore, since MS-DOS 7 could be the end, that \$80 million might eventually become \$0.

### Big problems people have with Windows

Windows obviously has strong appeal to many users. For the purposes of this document, however, let us focus on why people have tried and rejected Windows, or why dissatisfied Windows users are that way. There is a large body of data that consistently points to several key reasons:

#### *A Windows system is slow*

"It takes forever to load both Windows and Windows apps"  
"The disk always seems to be thrashing"

#### *The interface is slow*

"With all those menus and dialogs, it takes too many steps to get something done"

#### *The interface is confusing*

"I'm lost - there's too much on the screen and too many choices"  
"I'm baffled - I press a key or click on something and everything disappears or changes"

#### *Windows and Windows apps take up too much space on the disk*

Note that all of these problems span both Windows and Windows applications.

### Vision 1- The MS-DOS Companion for Windows

Since the impetus for the Companion was the desire to perpetuate the MS-DOS brand name, one vision is "MS-DOS on Windows." We would position the product as "The comfort of MS-DOS plus the power of Windows" and include MS-DOS-like features. This vision has the strength of leveraging the MS-DOS name but the weakness of being constraining. People don't use MS-DOS for very much, and it is hard to dream up cool features beyond a Windows command-line. We could put in cool features that don't have anything to do with MS-DOS, but that would make it hard to communicate a clear product message.

### Vision 2 - The Windows Companion

Another possibility is not to brand the Companion as an MS-DOS product but rather as a Windows product. After all, "Windows" is also a good brand name. We would position the product as a Windows utility with two simple, compelling, universal benefits - more disk space and more speed - and price it at \$29 so that the press would recommend it as a "No Windows PC should be without it" product. This vision has the strength of being compelling and crystal clear, but the weakness of plunging us into the utilities market.

At \$29 we could start thinking about extremely broad distribution, but we would have to be disciplined about features and keep the entire product on one disk and under \$2 cogs.

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### Business Case

Here is a conservative guess at Companion revenues:

Chicago Channel	Annual Chicago Volume	Companion Penetration	Companion Volume	Companion Unit Revenue	Total Revenue
Upgrade	10,000,000	20%	2,000,000	\$27	\$54,000,000
OEM	18,000,000	10%	1,800,000	\$27	\$48,600,000
OEM	18,000,000	5%	900,000	\$2	\$1,800,000
Total			4,700,000		\$104,400,000.00

### Notes:

- Revenue estimates use a unit revenue of \$27, which assumes a street price of \$29.99
- Fontpak penetration was 50% for Win 3.1 Upgrade direct orders. We also know that 21% of all MS-DOS 6 Upgrade purchasers bought other software along with it
- The first OEM line is for estimating the number of Companions sold at retail to new PC buyers
- The second OEM line is for estimating Companion OEM royalties

### Strawman Features

This list is every reasonably compelling feature we thought of. It is a shopping list and not a product definition. The features can be mixed and matched between the two product visions. Here are our general recommendations:

- MS-DOS Companion: Windows command-line and whatever else we can reasonably put in and still be able to call the product "MS-DOS" and crisply communicate why someone would want it
- Windows Companion: Given a vision of "more space, more speed," it would contain The Broom, Mr. Speed, Background Maxcompress and possibly Aaron's Windows Diskfix. Even though Diskfix isn't more space or more speed, it is cool and will help ensure good reviews.

#### *More disk space: The Broom*

The broom would contain a number of heuristics designed to help users sweep unnecessary clutter off their disks. It would be a Windows app that could either be run by the user or run at some scheduled interval.

#### Application file house-cleaning

The broom would have an updatable database, much like a virus signature file, that would contain the following information about every file shipped with every major application and operating system:

- What software package the file belongs to
- What the file does in plain English
- Identifying characteristics (file name, size, date, first 50 bytes)

The broom would present the user with the following information (the "D" button stands for "Delete"):

The following files are all part of MS-DOS 6				
File	Size	Purpose	Last used	
 KEYB.COM	14.8K	Lets you configure your keyboard for languages other than English	Not since you installed the MS-DOS Companion	
 LABEL.EXE	9.3K	Creates, changes or deletes the volume label of a disk. You do also perform this task in the Windows File Manager.	Not since you installed the MS-DOS Companion	

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#### Last access date

For data files and application files the broom doesn't know about, present the user with a list of all files not accessed in the last X months.

#### Other

There are any number of other heuristics for finding unnecessary files. We could also search for:

- Duplicate files
- \*.tmp files
- Duplicate functionality using the file database. Examples: Dosshell and Fileman, multiple Smartdrv/Himem/EMM386 in \DOS and \Windows, other caches like PCCACHE and NCACHE.
- Old unnecessary files in \DOS and \WINDOWS like VDISK
- IBM-specific files installed by QEMM, 386Max, Windows etc. on non-IBM systems
- Network-related files on non-networked systems. We would ask the user if they plan to be networked in the future ("Do you use this PC at home?" for example)

*Even more disk space: Background Maxcompress*  
Self-explanatory.

#### *More Speed: Mr. Speed*

The idea behind Mr. Speed is the assumption that Windows has baggage not needed by different classes of users. Therefore, if you sat a Windows developer in a room and let them make certain assumptions about a user's PC environment and usage patterns, then they could speed up Windows by some interesting amount. If we could get a 10% improvement, we might have a winner. Bens is skeptical that we could, but didn't dismiss the idea out of hand.

Mr. Speed would be installed as a VxD that sits and watches system usage over time. It could also query the user for certain information ("Do you plan to be networked?"). Here are some random ideas:

- Patching or copying over tweaked core Windows components that have reduced functionality but greater performance. For example, if you knew a user were not networked, maybe you could speed up the file system by removing the networking overhead.
- Adjusting the cache size for optimal performance
- Turning off Int28Critical (this idea and the next three come from the PC Tools for Win Advisor app)
- Setting NoEMMDriver=YES
- Reducing the TimerCriticalSection
- Enabling 32-bit disk access

Mr. Speed would also need an "override learn mode" switch to force it to make all optimization changes at once. Otherwise, reviewers couldn't benchmark its effect without using it for a long time.

#### *Super Windows command-line*

Different people have different styles. Some people love the Windows UI, some love the command-line. We also know from a survey from 4/92 that 62% of Win 3.0 users claim to use the C: prompt. Why not give them what they want?

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The screenshot shows a window titled "Command for Windows" with a toolbar containing buttons for "dir", "copy", "del", "cd", "ren", and "move". The command prompt shows the following output:

```

C:\>dir

Volume in drive C is RICHARD
Volume Serial Number is 6073-60ED
Directory of C:\

<table border="1">
| File Name | Attributes | Size | Creation Date | Time |
| --- | --- | --- | --- | --- |
| WINDOWS | <DIR> |  | 09-30-92 | 7:24p |
| WINWORD | <DIR> |  | 09-30-92 | 7:55p |
| EXCEL | <DIR> |  | 09-30-92 | 8:28p |
| COMMAND | COM | 52,925 | 02-09-93 | 6:00a |
| CONFIG | SYS | 402 | 05-13-93 | 9:32p |
| AUTOEXEC | BAT | 277 | 05-19-93 | 8:35a |
| 3 file(s) | | 53604 bytes |  | |
|  | | 6078464 bytes free |  | |


```

C:\>_

```


```

One goal of Wincom is to have press people and command-line users say "Incredibly cool! This is what we've wanted for the last 12 years!" Features could include:

Mouse-capable file management

Beyond the button bar for command MS-DOS commands, Wincom would be mouse-capable and mimic Fileman behavior:

- A button would act on any selected file or directory
- Double-clicking a file would start the associated application
- Double-clicking a directory would change directories
- Files could be moved by a drag-drop into a directory

Command-completion dialog boxes

Typing CD, DEL, COPY, XCOPY, FORMAT, UNDELETE, REN or MOVE without arguments would bring up a command-completion dialog box similar to the dialog boxes for those commands in Fileman, except that they would provide all the same options as the command-line switches.

In general, external commands such as XCOPY, ATTRIB, FORMAT and CHKDSK would not work properly in Wincom since can only run inside a DOS box. They would require some rewriting simply to be able to work in their existing TTY modes under Wincom.

COPY / XCOPY / DISKCOPY improvements

- XMS support
- Prompt for new disk when first disk full
- Overwrite protection, but offer to let user rename source or destination as an additional option besides "Overwrite" and "Cancel Copy"

Customization

- Display in any font, including proportional fonts
- Selectable C: prompts and a simple C: prompt editor (akin to an icon editor)
- Color control (display files in one color and directories in another; display .exe's in a special color, etc.)

Improved Error handling

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- Forgiving parser: Non-modifying commands, such as DIR or ATTRIB without arguments, would be parsed more forgivingly and executed automatically if entered as DOR or ATRIB. Modifying commands, like DEL, that were typed as DEK, would generate a "Click OK if you meant DEL" dialog
- Error wizards: The top 10 error messages would each be rewritten to fail gracefully and give the user a chance at corrective action. For example "Bad command or filename" would tell you which was bad - the command or the filename - and would generate "I couldn't find that command - Could you please retype?" dialog.

Background floppy usage (Is this already in Chicago?)

Just as Win Backup today gracefully writes to floppy disks in the background, any command that accesses the floppy (XCOPY foo.bar A:, FORMAT A:, etc.) should work in the background.

Batch enhancements

Include the big five or so batch commands (we could ask batch experts like Dan Gookin and Neil Rubenking what they would pick). Include the minimum set to support the menu builder applet (see below).

Menu wizard

A new Windows applet wizard, MENU, would let you define simple menus, and would generate the necessary batch file to implement the menu.

Mini-prompt

Either via a title bar button or two new commands - BIG and SMALL - Wincom could be shrunk to a small, always-in-front bottom-of-the-screen command assistant using a smaller font. [insert screen shot here]

Install as primary shell

As an installation option, users could replace Progman/Explorer and use Wincom as their primary shell.

Other cool stuff

- Unlimited scroll-back, including split-screen support so you could keep the C: on the bottom half, scroll to your hearts' content on the top half, and drag-drop or copy-paste between the two
- Right-mouse click brings up a box with the last 10 commands ala a right-mouse click Excel
- Complete cut-and-paste support
- Built in DOSKEY functionality
- UNDO - undoes your last command (delete one or a group of files, copy or copy overwrite, etc.)

Tips and tricks wizard

Give the user a selection of cool Chicago tips and tricks suggested by in-house people that the app would actually implement. Paul Somerson said that tips and tricks sell magazines; why not use them to sell software?

The repairman

Remove Aaron's magic diskfixer tool from Chicago and put it in the Companion

Configuration assistant

A Windows application designed to help anyone who helps users over the phone (PSS or corporate helpdesk types). We would need to do some research at PSS to see how much time this would actually save.

- CONFIG.SYS, SYSETM.INI and WIN.INI field editor. Should be designed to make over-the-phone configuration editing easy and fast. Instead of asking a user "Find the line that says FILES= and tell me what it says" the helper could simply say "Press ALT-F and tell me what it says"
- Syntax validator for CONFIG.SYS commands and common drivers like EMM386

Additional conventional memory management

VxDs make conventional memory management much less interesting; these features are low priority:

- 704K or 736K DOS boxes for text mode apps

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- Additional VxDs not in Chicago: UNDELETE, RAMDRIVE, etc.
- Load device drivers from the command-line plus a DOS PIF setting that allows a batch file to execute before an app equals local configuration control by app

*Pull MS-DOS features from Chicago*

Appendix A lists all of the MS-DOS improvements in Chicago. We could pull some and put them in the MS-DOS Companion. One suggestion has been to pull the automatic font scaling for DOS boxes. Another is Flexboot.

*Other ideas*

- Background defrag
- "Install as MS-DOS-only" - would delete all the Windows-specific files (applets, wallpaper, etc.)

**Future research**

In order to validate a product concept, we need to do further research:

- A keystroke recorder or instrumented MS-DOS would tell us a great deal about how people actually use MS-DOS. We could also approximate this research by videotaping people's screens.
- Run the idea by some key press people, such as Paul Somerson, Robin Raskin and Jeff Prorise
- Focus groups would help determine how appealing the features proposed above are as solutions to what we know are common problems
- Although some research has been done, more detailed activity-based research on "what I hate about Windows" could lead to additional feature ideas

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**Appendix A: Competitive products review**

In preparing this document we reviewed the following products:

Product	Description	Key Features	Interesting Features
Desqview/X	DOS app multitasker	Multitasking Windowed DOS app support	Scalable fonts in DOS boxes Macro recorder for DOS apps
Dashboard	Windows doodad	Quick launch icons	Tabs instead of buttons to change tasks
Xtree for Win	Win file manager	Windows file manager Command bar maker	None
Norton Utilities	MS-DOS tools	NDD Speedisk	Dupdisk - one pass, semi-full screen disk copier
NDW			
PC Tools (DOS)	Big bag of stuff	Backup AV Diskfix	Filefind - finds duplicate files
PC Tools (Win)	Big bag of stuff	Virtual desktops Windows file manager Slew of Windows utilities	Windows Diskfix Windows semi-background defrag System consultant - Win MSD plus tweaking suggestions Sync directories utility
Sidebar	Windows doodad	Windows command-line Quick launch icons	Split-screen command-line supports file drag-drop between screens
EDOS	Windows DOS box enhancements	704K and 736K DOS boxes Menu bar for Windowed DOS apps	Run Win apps from a DOS box command-line
WinCLI	Window command-line	Full Windows app Near-compatible C: prompt	Reverse scrolling
OS/2			

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**Appendix B: MS-DOS features in Chicago**

- Zero footprint: DoubleSpace VxD, Mouse VxD, VFAT and zero footprint Smartdrv, MSCDEX VxD
- Long file names (won't pass through to DOS apps unless they are updated)
- Toolbar for windowed DOS apps
- TrueType support in windowed DOS boxes, including automatic font scaling
- Cool switch for full screen DOS boxes
- DOSKEY scroll back support
- Files high, Lastdrive high
- Launch Win apps from the command-line
- 1024 cylinder support
- Last access date
- Better support for graphics mode DOS apps in windowed DOS boxes

**Other MS-DOS features that have been pulled from Chicago, or are under debate:**

- Johnhe's command-line find engine - out
- Ability to load device drivers from the command-line - out
- 255 char path - undecided
- 704K DOS boxes - out
- Flexboot multiple OSes - undecided
- A DOS PIF setting that allows a batch file to execute before an app (local configuration) - out

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### Appendix C - CompuServe Beta Forum Research

Andy Thomas has tabulated all of the responses to our posting asking for MS-DOS 7 suggestions on our beta forum. There is obviously a huge power-user bias in the sample. The top individual requests were:

Longer filenames	32
New file system	24
Get rid of 640k barrier	24
32-bit	22
Tape backup support	18
One-pass diskcopy	15
peer-to-peer networking	10
Pre-emptive multitasking	9
Enhanced batch language	9
Dialog box-style utilities	8
Longer path	7
Break 1024 cylinder barrier	7

I also read all the threads individually to get a qualitative feel, and not surprisingly the overwhelming request is for a "modern OS," i.e. a 32-bit, protect-mode OS. People aren't clear about exactly what they want when they say "32-bit protect mode," but I think most would be happy with just long file names and the end of conventional memory management.

But beyond specific feature requests, I wanted a sense of people's general areas of interest. Towards this end, I grouped all the requests into 7 categories. Note that people are extremely interested in an improved command-line and command set.

Category	#	Description	Examples
Architectural enhancements	11	Any suggestions to the effect of "I want a new OS"	Long file names, New file system, 32-bitness, multitasking, 1024 cylinders
Command environment	75	Suggestions related to activities performed from the C>, including command-line utilities	One-pass diskcopy, dialog box-style utilities, longer path, colors without ANSI.SYS, "use 4DOS"
Utilities	69	Suggested enhancements to existing utilities or new non-command-line utilities	Tape backup, improve the shell
Memory management	46	Suggestions specifically related to memory management	Break to 640K barrier, DPMI support
Other	18	Assorted random stuff	Security features
Networking	16	Self explanatory	Peer networking
DoubleSpace	16	Self explanatory	Better interoperability with Windows
Batch language	14	Self explanatory	"Improve it," return more errorlevels

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## Appendix D: Common MS-DOS activities

### *File and directory management*

Common activities such as listing files; changing directories or drives; creating, deleting and renaming directories; and copying, renaming and deleting files

### *Command-line environment and commands*

The environment in which people execute commands such as the prompt; screen colors; Doskey features like up-arrow, ESC and command-line editing; /? help; as well as the activity of executing common TTY commands such as FORMAT, XCOPY, or ATTRIB.

### *Program launching*

### *Conventional memory management*

### *Hard and floppy disk management*

Formatting floppy disks, defragmentation, disk repair, freeing disk space, backup, double space.

### *Batch programming*

### *Troubleshooting and configuration management*

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