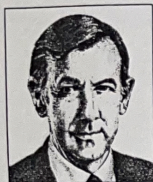**APPLIED INTELLIGENCE**

Lotus Bypassing DOS/Windows En Route to OS/2 PM

JAMES MARTIN

This is the fourth in a series on the strategic directions that Lotus Development Corp. is pursuing and the significance of those strategies to organizations that are planning for the 1990s.

Vendors of software for IBM PCs and compatibles are moving rapidly away from the familiar character-based DOS interface to the far more intuitive graphical user interface.

However, both users and software vendors are faced with a difficult choice in the move toward a graphical user interface.

As shown in the figure, two separate strategies for the graphical interface are becoming available. One strategy is based on a transition to OS/2 and the Presentation Manager, while the alternative strategy is based on DOS and Windows 3.0.

In its recent product releases, Lotus has committed to the OS/2 Presentation Manager strategy.

A central element of Lotus' strategy is to move customers from DOS to OS/2 and then from OS/2 to the Presentation Manager.

Lotus has committed a substantial number of software developers to projects involving OS/2 and Presentation Manager—a clear indication that its more important software will be developed for that platform.

The OS/2 Edge

The move to OS/2 allows new Lotus products to take advantage of the multitasking and data-exchange features of OS/2.

In contrast, Microsoft Corp. is pursuing a dual strategy aimed at providing separate graphical interfaces for both DOS and OS/2.

Microsoft strongly encourages both vendors and users to move as rapidly as possible to the OS/2 environment. However, for those users unwilling to make the transition to OS/2, Microsoft will provide a graphical version of DOS based on Windows 3.0.

DOS/Windows 3.0 will comply with IBM's specifications for Common User Access (CUA) and will have the same user interface as OS/2 Presentation Manager.

As shown in the figure, the DOS/Windows strategy provides a growth path that offers users an initial graphical interface under DOS, and then moves in simple steps to OS/2 with Windows 3.0 and finally to OS/2 with Presentation Manager.

The DOS market is at a critical juncture. By the end of the year, it is projected, more than 55 percent of the installed base will consist of machines based on the 286 microprocessor.

This percentage is even higher in most foreign countries because the purchase of PCs began much later than in the United States.

The implication of this percentage is that the platforms required to run OS/2 will soon make up the majority of the installed base.

Despite Lotus' plan for moving to OS/2, most organizations continue to include DOS in their near-term planning. It is evident that large numbers of users are not ready to make the transition to OS/2.
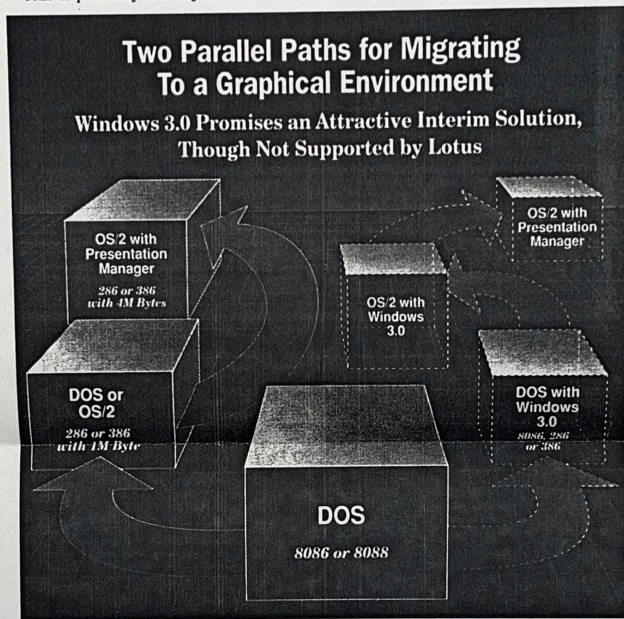
These users want a DOS-based, graphical, multitasking operating environment that will provide an easy transition to OS/2 in the future.

This is precisely the objective of the

with respect to support for a DOS/Windows strategy.

In most large organizations, the decision to move to OS/2 won't be made by users; it will be made at the executive level. One of the best ways to bring users into the world of OS/2 is to provide a familiar application that allows them to learn the environment through their routine jobs.

Lotus intends to provide the vehicles to make this shift occur. For example, release 3.0 of its 1-2-3 spreadsheet package can be installed under DOS or under OS/2. Worksheets, macros and graphs will perform the same under either operating system.

Two Parallel Paths for Migrating To a Graphical Environment

Windows 3.0 Promises an Attractive Interim Solution, Though Not Supported by Lotus

OS/2 with Presentation Manager — *286 or 386 with 4M Bytes*

OS/2 with Presentation Manager

OS/2 with Windows 3.0

DOS or OS/2 — *286 or 386 with 1M Byte*

DOS with Windows 3.0 — *8086, 286 or 386*

DOS — *8086 or 8088*

John Avakian

Many users want a DOS-based, graphical, multitasking operating environment that will provide an easy transition to OS/2, which is the objective of the DOS/Windows strategy.

DOS/Windows strategy.

The advantages of the DOS/Windows approach include support for 8086, 286 and 386 machines; a graphical user interface; consistency with the look and feel of OS/2; multitasking; memory management; and support of conventional, extended or expanded memory.

Although the release of Windows 3.0 has been delayed until the first quarter of 1990, most vendors of OS/2 Presentation Manager products are porting their software to the Windows 3.0 environment.

Because of the advantages of this environment as a stepping-stone to OS/2, Lotus may have to alter its position

Moving from DOS to the Presentation Manager under OS/2 could require major changes—primarily in hardware. To adequately run OS/2 and applications, the user will need a 286-based or 386-based machine with at least 4M bytes of memory.

Once OS/2 is in place, 1-2-3 release 3.0 will run a little faster, networking will be more robust, the network won't be able to crash the system, and multitasking will be available.

Lotus originally intended to provide a character-based upgrade of 1-2-3 that would run on the large base of older 8088 and 8086 machines. The company, however, fundamentally shifted its

spreadsheet strategy when it moved from the assembler-based code of early 1-2-3 releases (release 1A and 2.01) to the C language. The move to C allowed Lotus to develop core product code that was essentially independent of the runtime environment.

Unfortunately for Lotus, the C strategy backfired in two respects.

First, the time required to rearchitect and then develop a new C-based spreadsheet exceeded Lotus' estimate. The project was more than a year late in getting to the market.

As Lotus struggled to get the new product out, developers were faced with their second challenge. The new C-based spreadsheet incorporated more functions and features than did its predecessor, and, as a result, it could not run on early-generation personal computers.

It eventually became obvious that Lotus would have to segment the hardware market and deliver its newer technology only to the newer-generation PCs.

Three-Pronged Approach

In all, Lotus developed a three-pronged strategy for its spreadsheet products, segmenting the market into three categories.

The older 8086 and 8088 machines with 640K bytes of conventional memory constitute the first group. Computers based on the 286 or 386 chip with 1M byte of memory constitute the next group, which is soon to become the largest one.

The third market segment will be made up of 286-based and 386-based machines with more than 3M bytes of RAM running under OS/2 and the Presentation Manager.

Protected-mode (DOS extension) technology from Rational Systems was selected as a solution for the memory requirements of release 3.0 of 1-2-3. This technology provides an unobtrusive means of accessing memory above 640K bytes under DOS (up to 16M bytes). Users will not have to make any special settings upon installation and should not even notice that they are operating in the protected mode.

One immediate benefit of this technology is relief from tight memory constraints when running 1-2-3 on a network.

Protected-mode technology allows the network and memory-resident software to run in the first 640K bytes, with 1-2-3 applications running in the remaining extended memory.

Next week I'll discuss the competitive issues over which the software wars of the 1990s will be fought and how Lotus is meeting these issues. ∎