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Operating Systems Direction Issues
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The central issue in the operating system directions today is the apparent divergence of IBM's operating system direction from Microsoft's direction. This creates a very uncertain application development environment. It is not clear today whether following IBM's systems direction is a profitable direction.

Our overall impression is that IBM has nearly completely lost control of the operating systems directions of its systems. Consequently, Microsoft now is in more control of IBM's destiny than ever.

A really interesting wrinkle is the work Microsoft is beginning on "RISC OS/2" -- a hardware architecture that is specifically designed to support OS/2. This is clearly designed to weaken MS's dependence on Intel's architectural direction. It cannot be particularly good for IBM, either.

OS/2 positioning differences

IBM is positioning OS/2 as a key client/workstation/personal system platform. Microsoft is attempting to reposition OS/2 as "Windows Plus" -- a platform to run Windows 3.0 applications that have specific very high end needs -- and as a highly portable alternative to Unix with its portable OS/2.

Microsoft continues to declare that OS/2 1.2 is a dead end that should not be the target of application development.

IBM and Microsoft have very different stories on printing and scalable fonts. The result of this difference is that from a practical point of view, applications developed for one company's OS/2 will not run on the other company's version.

The API of OS/2 2.0 (as received from both IBM and Microsoft) requires significant rearchitecture of applications software (memory management, IPC, file system, ...) in such a way that we expect that a whole new generation of applications development may need to be started. This new generation of applications will take some time to happen after it becomes possible to develop such applications (really the clock will start ticking around the first general availability date, because the system is so different that good tools and so forth will not be available.) Thus, we see a risk that customers will wait for OS/2 32-bit-exploitive applications, further slowing the acceptance of OS/2 on 286/386 platforms.

Though some of the API changes seem to be justified by support of 32-bit, many of the changes seem to be put in place to enable the beginning of a transition to "portable OS/2" only. Portable OS/2 seems to be an attempt by MS to attack the UNIX and Workstation market, and will also require a new generation of tools (compilers, linkers, debuggers), device support (printer and display drivers) and applications. We don't clearly understand the customer benefit of this upheaval.

More importantly, Microsoft seems to be driving OS/2 2.0's API and features in a direction that furthers their long-term desire to influence machine architectures, rather than establishing OS/2 as the prime application platform for the IBM PC enterprise computing world.

OS/2 2.0 is clearly much more demanding of memory and other systems resources (disk space) than OS/2 1.2. It thus clearly is going in the wrong direction.



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OS/2 2.0 as we see it is still in a very preliminary stage. The SDK received in Q1 from IBM is lacking in documentation, tools (compiler/debugger/performance analysis). We do not have anything like a functional specification, and our information on feature plans, etc. are inferred from reading API include files (source code) that happens to be included. We have no notion of whether or when network support will be available, and when (and which) printers, displays, etc. will be supported.

IBM, in not declaring support of DPML, has chosen to make OS/2 2.0 less clearly a "Better DOS than DOS" than Win 3.0, which supports a much richer class of DOS applications. This makes Win 3.0 much more attractive than OS/2 version 2.0.

In contrast, Microsoft is publicly declaring that its version of OS/2 will support DPML.

Finally, Microsoft is developing a hardware platform called "RISC OS/2" in conjunction with systems vendors other than IBM (MIPS is one of them). This is clearly an attempt to turn OS/2 into a workstation competitor for Unix. The attempt to move aggressively away from Intel's architectural direction and control the hardware architecture is understandable; what we don't know is what this means for IBM. If we develop apps for OS/2 2.0, Microsoft is aiming at creating a high-end platform that will be source-portable for those applications. However, this may be in conflict with IBM's high end directions, which may either be Intel based, or may be RS/6000 and AIX based.

Windows Futures

Microsoft is clearly continuing to enhance Windows. We have evidence that Windows for the 386 will support 32-bit application development, and that network support is being promised for Windows to enhance its client role in a distributed systems environment.

Microsoft has provided a full set of Windows printer drivers, while support for printers in OS/2 is incredibly buggy and dramatically incomplete.

All of Microsoft's applications development is targeted at Windows 3.0 for first customer availability, and the "porthole" technique is recommended for ISV's to move those applications to OS/2. Applications thus developed are able to take no advantage of OS/2's advanced graphics capabilities.

Microsoft has already invested in dramatic improvements in key customer concerns such as installation/configuration, end-user integration/scripting languages (Toolbook), and Macintosh-like UI (the use of icons etc.)

Finally, Microsoft's multi-media direction is focussed on Windows.

DOS Futures

Microsoft is developing a DOS 5, with various features, including "viewers" and a GUI shell. Also included are ROMability and a decreased use of memory in the 640K low memory space, and VCPI support. We understand that Microsoft is preparing to take over full marketing and support responsibilities of this system in the 4th quarter, including doing all the device adaptation, customer service and support, etc. We have no information on IBM's plans in this direction, but there seems to be a significant risk of a parting of the ways between IBM and Microsoft.

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The most significant concern for IBM is that it may lose control of DOS directions, in the same way that it has lost control of OS/2 and Windows. We will need to decide how best to respond to this, because it may well be that there is a different DOS direction that IBM will take, which fragments our market.

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