

OS/2: Microsoft's View

Steve Ballmer

**Vice President, Systems Software
Microsoft Corporation**

- Introduce myself
- Thank IBM
- Joke about dinner hitting the hay
- Bring out the presenter
- Market position, key improvements

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Plaintiff's Exhibit
8112
Comes V. Microsoft

OS/2 Success Factors

- o Momentum: Critical mass of binary compatible installations
- o Microsoft and IBM commitment to the product
- o Technical strength

OS/2 the successor to DOS in bus.
DOS + OS/2 > 85%
In 91 OS/2 > DOS

To understand we need.

- ~~momentum~~ technical strength (new apps)
- ~~common~~ momentum
- commitment

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OS/2: Technical Strength

- o Pre-emptively scheduled kernel supporting multiple concurrent tasks and multiple threads of execution *servers, sophisticated workstation, more apps that don't break*
- o Advanced memory management and inter-process communication facilities *bigger apps, more complex, richer interaction between apps*
- o Extensible system services via use of dynamic link libraries *subsystems, reusable pieces, value added*
- o Integrated graphical user interface *next generation, depend on it, lower barrier*
- o Advanced networking support *horizontal*

Workgroup apps
- Notes / Office
- E1, E2, E3 demo

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OS/2 Momentum

DOS thrived due to Microsoft, IBM and third party industry support

- o OEM support

- o DOS - 118
- o OS/2 - 55

*same bankrupt
and growing*

- o ISVs

- o DOS - 2320
- o OS/2 - 200 (companies with OS/2 products announced)

*7 1/2 years
220 Million*

This includes the industry leading ISVs:

Aldus, Ashton-Tate, Borland, Computer Associates, DCA, Digital Research, Informix, Lattice, Micrografx, Microrim, Novell, Oracle, Software Publishing, T/Maker, Versacad, Word Perfect

OS/2 momentum is better than DOS at year one

The successor.

*Q1
big by Q4*

F4U's.

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OS/2 Momentum: Role of Microsoft Windows

- o The OS/2 user interface is the most popular graphical user interface in the world today *CUA on DOS*
- o The compatibility of the user interface across Windows and OS/2 makes it possible to develop common DOS and OS/2 based applications *eases fear of transition* *large bridge*
- o Largest base of graphical applications is portable (and being ported to) *example*
OS/2

OS/2 will feed off Windows

success

Q&A

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Microsoft and IBM Commitment

- o Identical OS/2 version 1.1 products — well tested & released
- o Open architecture:
 - o Programmatic interface
 - o Device drivers
 - o Fonts
 - o Data interchange protocols— no binary links
— explain.
— most other
- o Refinement
 - o Speed
 - o Size
 - o Useability| People like speed
Explain size
- o Enhancement
 - o New features
 - o Hardware support| Here we go

Key:

People make investments. Want to know they have committed partners

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The future for OS/2

- o Filesystem improvements
- o Support of 386 processor
- o Imaging model
- o Networking
- o Object oriented enhancements
- o Multi-processor support

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Filesystem Improvements

- o Performance improvements:

- o file access
- o smart caching

} No need to be
proprietary to be
great

- o Media access improvements:

- o larger disk volumes
- o standardised access to different media types (e.g. CD ROM)
- o long filenames and extended file attributes (e.g. 'author name', 'revision date')



Browsing
ISU'S

- o Both are important initially for network server and later for object oriented systems

Key

Usability ↑

Filesystem is most popular

for networking

Better database with EA's

Will go distributed

Database/Filesystem will be key

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Unix ports no new app types
0:32 Support of 386 Processor

- o Full binary compatibility: all existing OS/2 applications will run unchanged
- o API enhancements:
 - o Access to 32-bit linear address space
- o System enhancements:
 - o Demand paged virtual memory
- o End user enhancements
 - o Multiple DOS sessions

>>
highlight

Benefits 286 apps

collected this year

Portable API

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Imaging Model

- o OS/2 today has an open architecture for fonts and rendering. This encourages third parties to provide products for specialised applications:
 - o High quality phototypesetting
 - o Image capture
- o OS/2 today has a very high quality "graphics engine", comparable to or better than any other product. The graphics services are available to all application programmers.

There is a need to provide higher level tools for creation and manipulation of graphics objects.

- o OS/2 today has the best screen imaging model and can support printed output in various ways: Postscript, HP PCL, other raster and vector devices such as dot matrix printers, plotters and film recorders.

Some applications (e.g. desktop publishing) benefit from a single image model for both screen and printer.

Printer manufacturers will build Presentation Manager printers which support this.

Future

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Not used
Bitmaps
Collect
Return
merge
Portion
Integrated
w/OS
does not
interact
new
constructs

Clipping
Font algorithms

Networking

- o MS OS/2 LAN Manager version 1.0 now shipping
 - o High performance network server *Compsel*
 - o Shared file access across network
 - o Suitable for client/server applications allowing distributed processing
- o Interoperable with IBM LAN Server version 1.0
- o Planned enhancements: *RPC go through case*

LAN API

Named pipes

LAN APIs

- o Name service *? Explain*
 - o Security services *& Explain*
 - o Additional RPC and program to program communication support *CPIC & RPC compilers*
 - o Improvement of transport efficiency *Netbeni & others.*
- Pinball*

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Object Oriented Enhancements

Problem statement:

Today's applications do not offer the consistency and flexibility needed to increase end user productivity.

Application development is becoming increasingly more difficult as the computing environment becomes more complex.

Requirements statement:

Provide an environment in which users can control multiple applications, combine applications and interchange a wide range of information between them.

Provide an environment wherein applications can act as extensions of the OS and provide future portability by virtue of this extensibility.

Key

Supporting an object oriented system:

Support for objects in development tools (methods, classes,....) C#

Support for objects in the user interface (direct manipulation, "drag and drop") - Factory

Support for application images and data files as objects within the filesystem and across the network - Sample

- Load
- OOPS (build on filesystem)
- Control language
- Protocols

- Visual objects
- CUI

Summary:

Providing a true object oriented system is a large and complex problem which impacts all aspects of systems software.

OS/2 and its associated tools is a great platform on which to build this.

Will take time but is evolutionary.

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Builds off object oriented messaging model of PM.

Multi-processor Support

- o Need to provide for both general and special purpose solutions:
- o General purpose scalable solution utilising one to N similar processors:
 - o Same operation on N processors as on one processor, albeit with different performance *larger*
 - o Hardware manufacturer has a flexible choice of product configurations
- o Special purpose
 - o Co-processor dedicated to specific function (e.g. filesystem support)
- o Multi-processor systems are initially important for use as high performance network servers

Explain numerics or other coprocessor

File/Database service

- File system / Database
- Driver (Net, Disk)
- Server
- Cache

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Virtual
Co-processor
Design
always
off-load

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Summary

- o OS/2 has early critical momentum
- o Planned enhancements will consistently improve end user and developer benefits
- o OS/2 is a great foundation for technology innovation

OS/2: The natural successor to DOS

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