

Microsoft OEM Briefing Windows Into The Future



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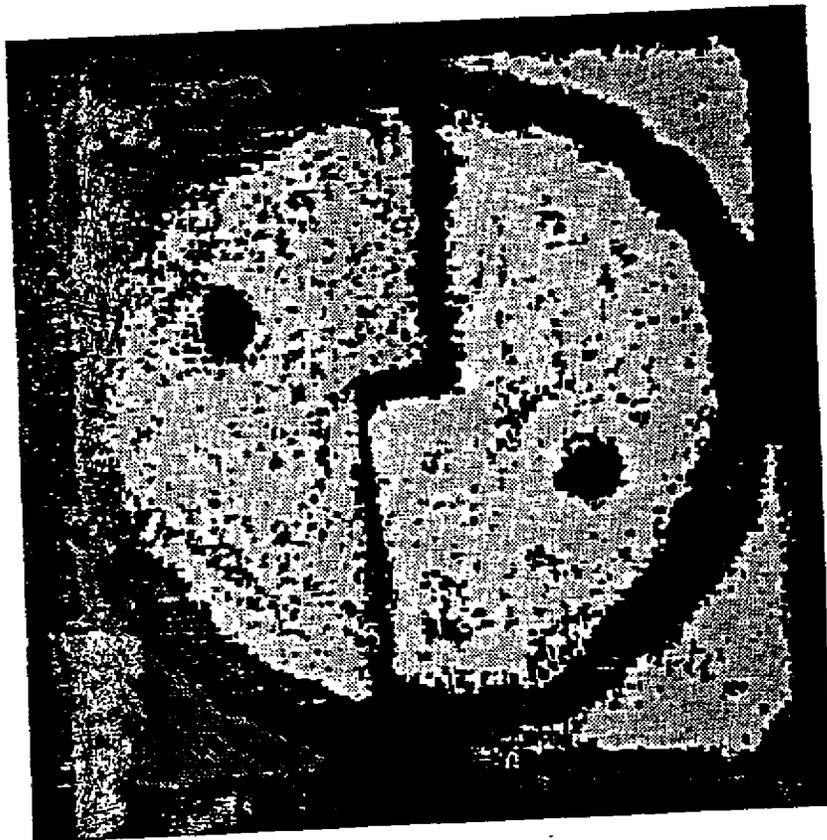
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Comes V. Microsoft

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Microsoft Systems Strategy



Paul A. Maritz
Senior Vice President
Microsoft Corporation

Agenda

- ◆ Overall objectives
- ◆ Windows™ market status
- ◆ Windows family overview
- ◆ Windows interoperability
- ◆ Windows and MS-DOS® futures
- ◆ Windows and system design

Microsoft Systems Goals

- ◆ Scale to meet broad range of customer needs and to meet broad range of hardware
- ◆ Worldwide products
- ◆ Protect customer investment
- ◆ Interoperate in a heterogeneous world
- ◆ Make it cheaper and easier to own and operate Windows-based systems
- ◆ Open the way to new functionality in a compatible way
- ◆ Continue to be an open platform for hardware and software vendors

Windows Market Status

Windows is now a true standard:

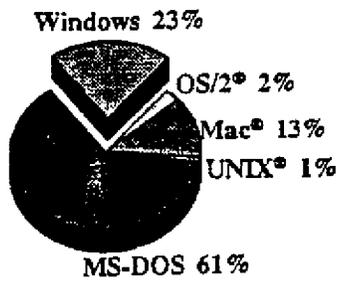


- ◆ More than a million new users per month
- ◆ 25 million copies of Windows 3.x sold
- ◆ 1000+ OEM licenses; 110+ preinstall
- ◆ 5000+ commercial Windows-based applications

Graphical Application Momentum

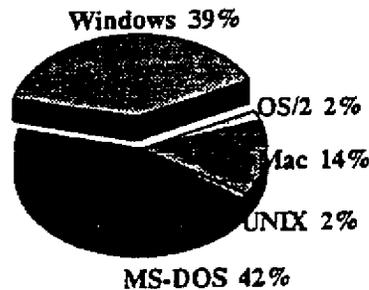
\$980 million

Jan. - Nov. 1991



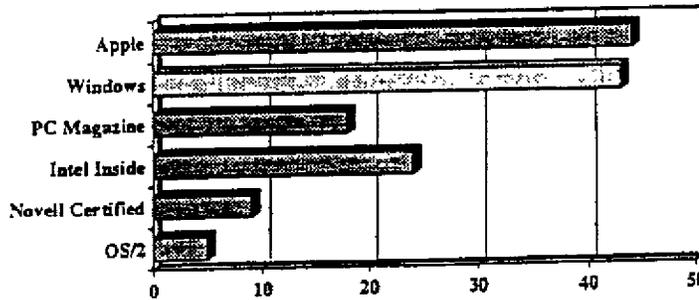
\$1.96 billion

Jan. - Nov. 1992



Source: Software Publishers Association

Product Displaying This Logo Is Easy To Use



Answers Research Logo Study - February 1993

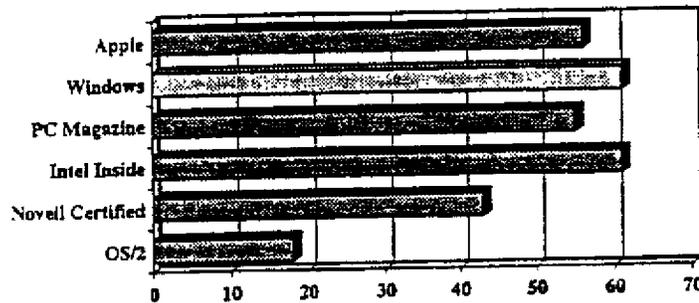
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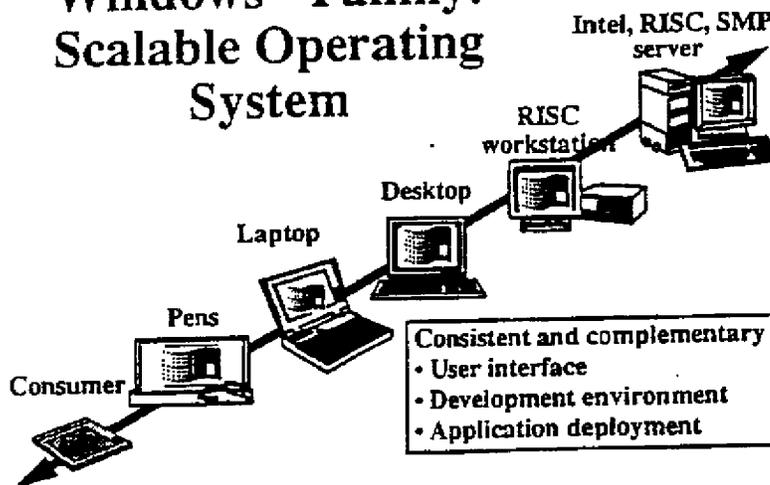
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Product Displaying This Logo Is A Safe Buy



Answers Research Logo Study - February 1993

Windows™ Family: Scalable Operating System



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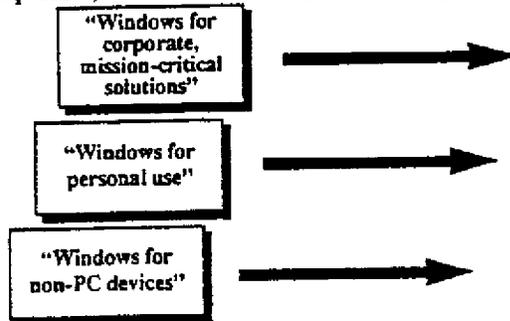
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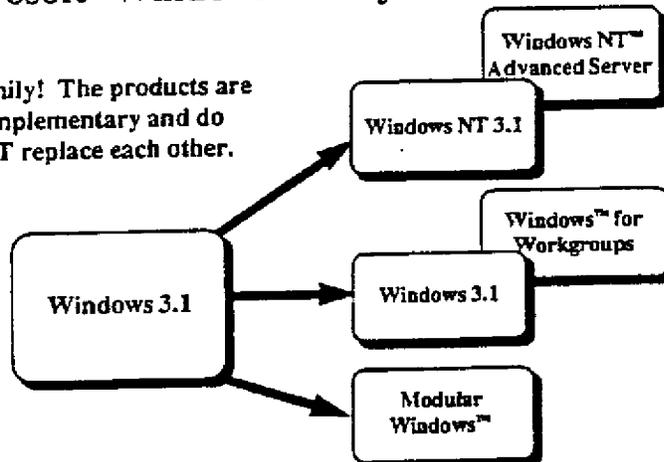
Windows Family Framework Summary

- ◆ Maintain now and in the future, a family of complementary Windows implementations to meet needs of the key customer segments
- ◆ Keep API, UI commonality (where appropriate)



Microsoft® Windows Family Products - 1993

A family! The products are complementary and do NOT replace each other.

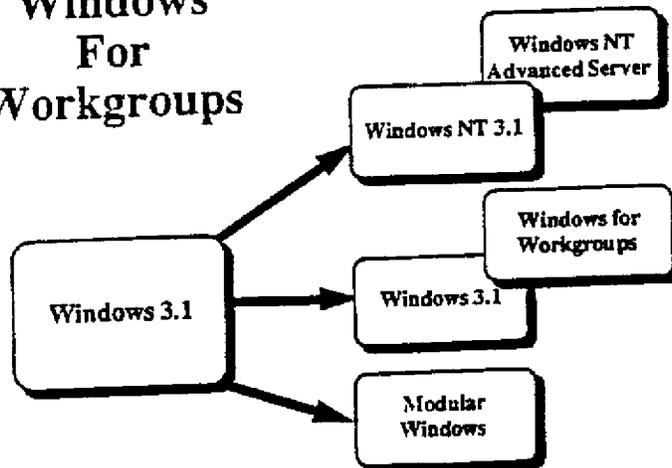


Microsoft Committed To Far East Markets

Release of Windows for the Far East

Windows 3.1	Q2 '93
Windows for Workgroups	Q3 '93
Windows NT 3.1 (Japan) - beta	Q2 '93
Windows NT 3.1 (Japan) - final	Q4 '93
Windows NT 3.1 (Taiwan, Korea)	Q2 '94
MS-DOS 6	Q4 '93

Windows For Workgroups

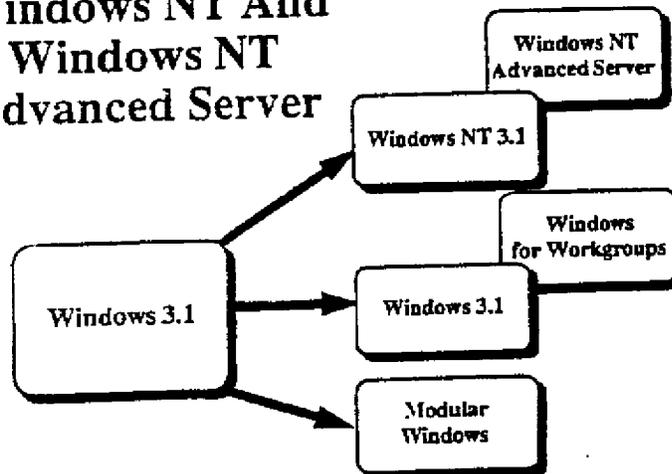


Windows For Workgroups *Makes it easier to work together*

- ◆ Basic networking built in to Windows
 - > File and printer sharing
 - > Email and scheduling
 - > Network DDE
- ◆ Ideal for small office
 - > Low cost
 - > No dedicated server or network operating system
- ◆ Integrates into existing networks



Windows NT And Windows NT Advanced Server



Windows NT

*The most powerful operating system platform
for client-server computing*

- ◆ Robust: protected, preemptive, recoverable
- ◆ Secure
- ◆ Scalable: symmetric multitasking
- ◆ Integrated networking
- ◆ Advanced I/O system
- ◆ Manageable
- ◆ Compatible with existing hardware and software (MS-DOS, Windows, OS/2, POSIX applications)

Windows NT 3.1

Windows NT 3.1



High-end desktop

- ◆ Superset of Windows and Windows for Workgroups 3.1
- ◆ Security and robustness
- ◆ 32-bit and preemptive multitasking
- ◆ Portability

Windows NT 3.1 Advanced Server



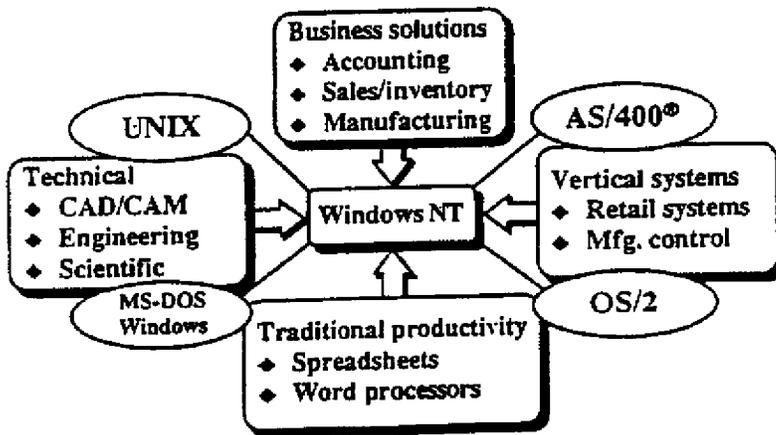
High-end server

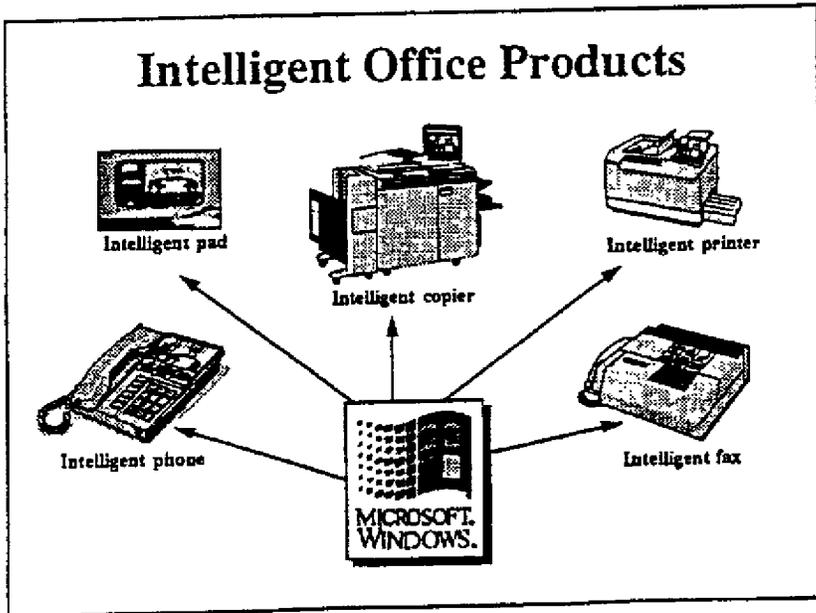
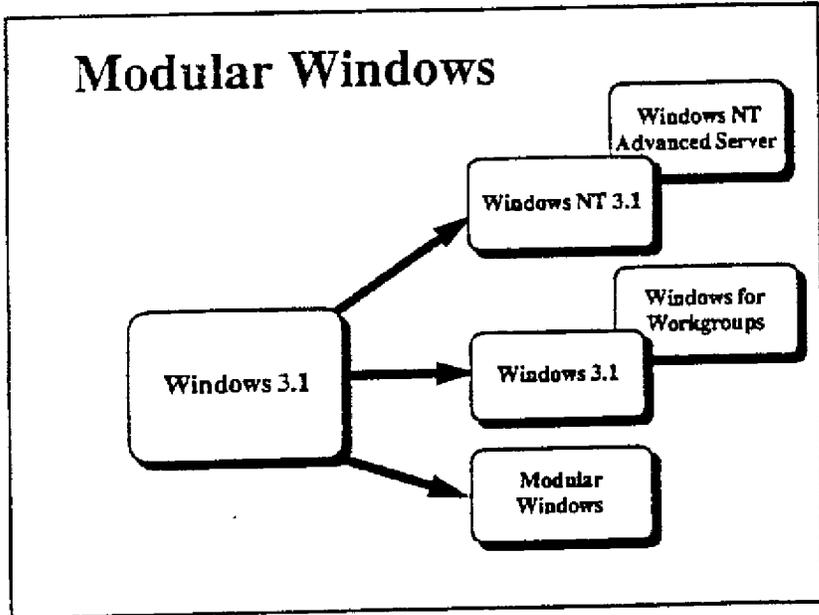
- ◆ Superset of Windows NT
- ◆ Centralized administration
- ◆ Advanced network security
- ◆ Remote access service
- ◆ Macintosh[®] client support

Windows NT Status

- ◆ Beta 2 shipped in U.S. in March
- ◆ 50,000+ Windows NT SDKs
 - > Survey: 62% plan to deliver Windows NT applications
 - > 75 development tools available
- ◆ 15,000 beta test sites
- ◆ Strong corporate interest
- ◆ Final U.S. release expected by end of Q2 '93 - Japan in Q4 '93

ISVs Porting To Windows NT



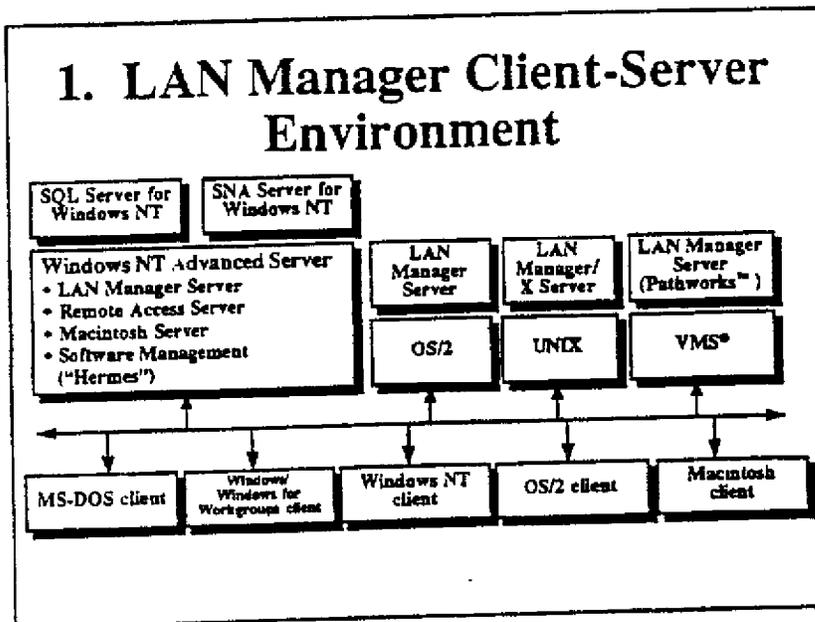


Modular Windows

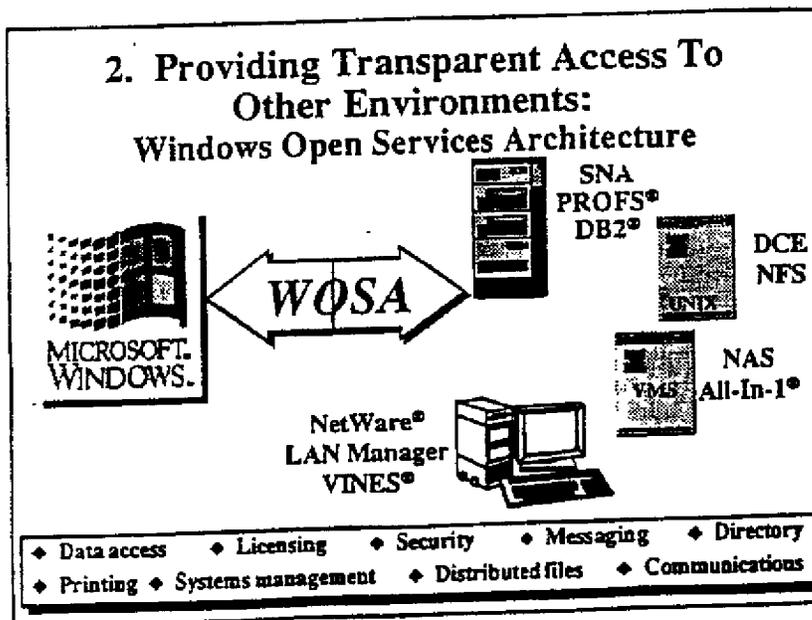
- ◆ Non-PC devices: CD players, hand-helds, office devices, etc.
- ◆ Subset of Windows function, different UI

Windows In A Heterogeneous Environment

1. LAN Manager Client-Server Environment



2. Providing Transparent Access To Other Environments: Windows Open Services Architecture



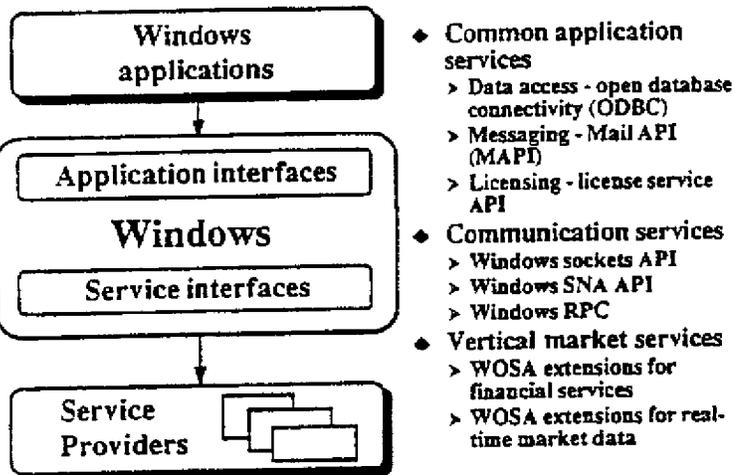
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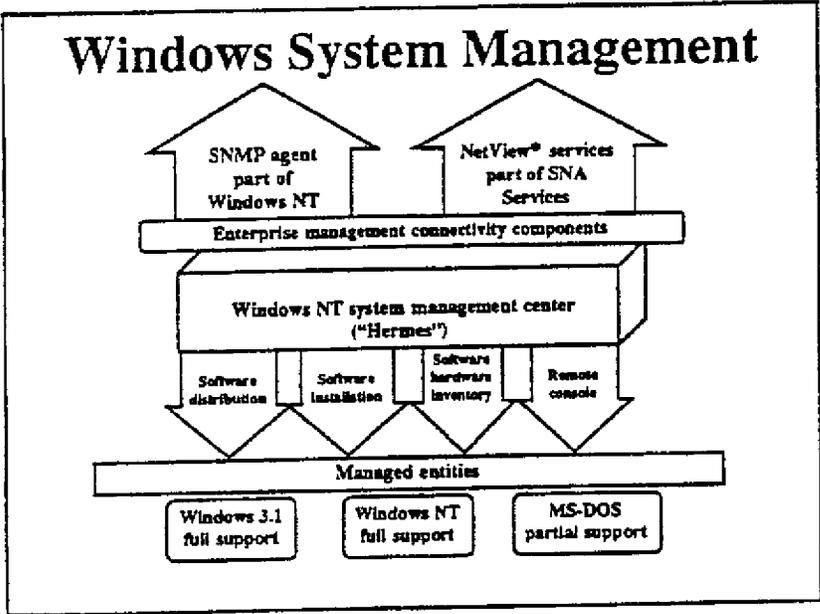
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Windows Open Services Architecture



Network And System Administration

- ◆ **Windows NT Advanced Server**
 - > Unified management of users and servers
- ◆ **Hermes: Windows system administration package**
 - > Available in late '93



Future Of Windows And MS-DOS

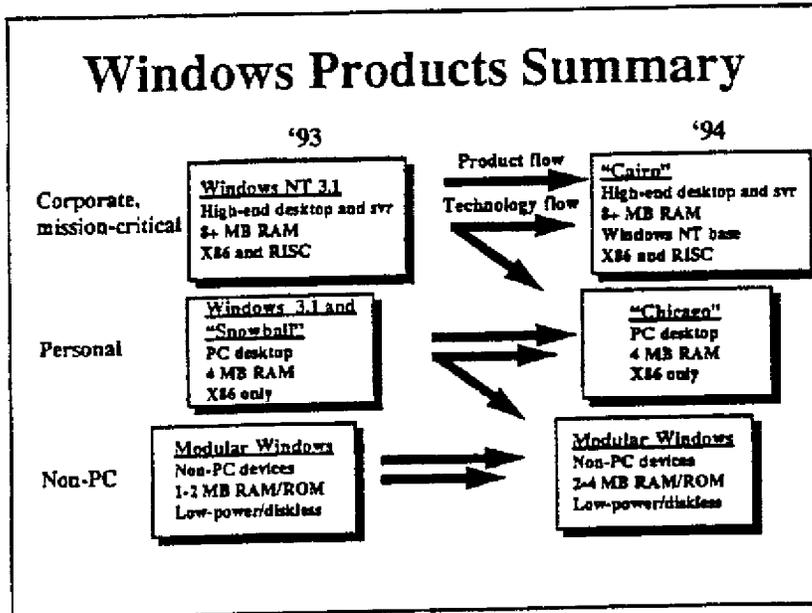
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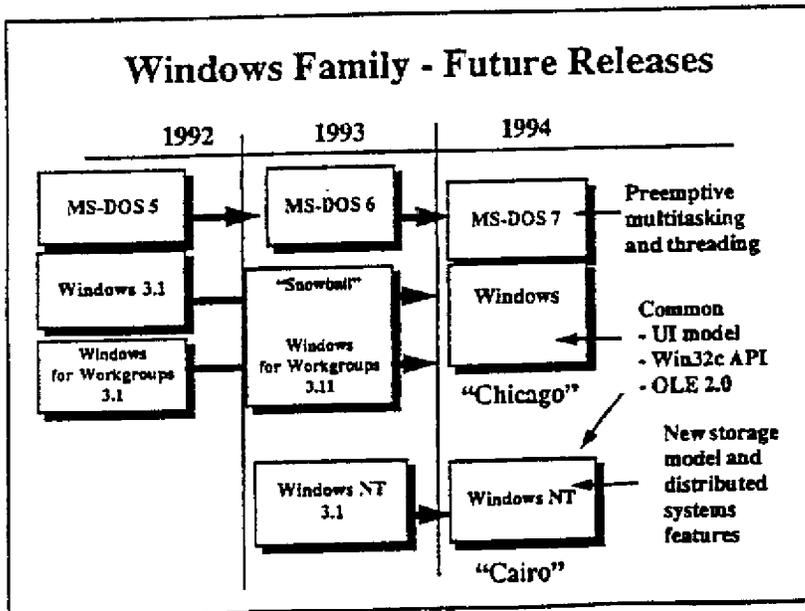
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Windows Products Summary



Windows Family - Future Releases



What Is "Snowball"?

- ◆ Successor to Windows for Workgroups 3.1
- ◆ Enhancement to Windows 3.1
 - New File Manager, Print Manager
 - Performance: VFAT, 32-bit SCSI drives
 - EFAX
 - RAS
- ◆ Fast, flexible network client
- ◆ Peer server
- ◆ Designed for OEM preinstallation
 - Network adapter may be added later

What Is "Chicago"?

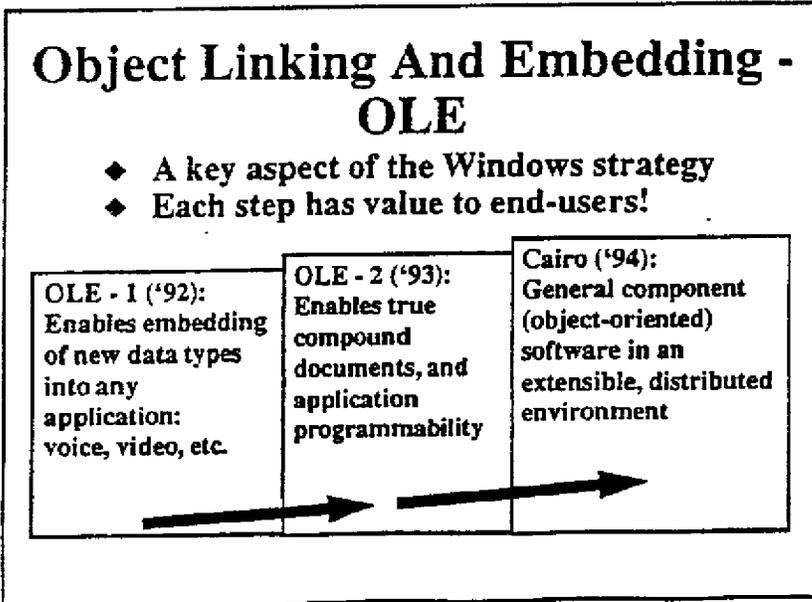
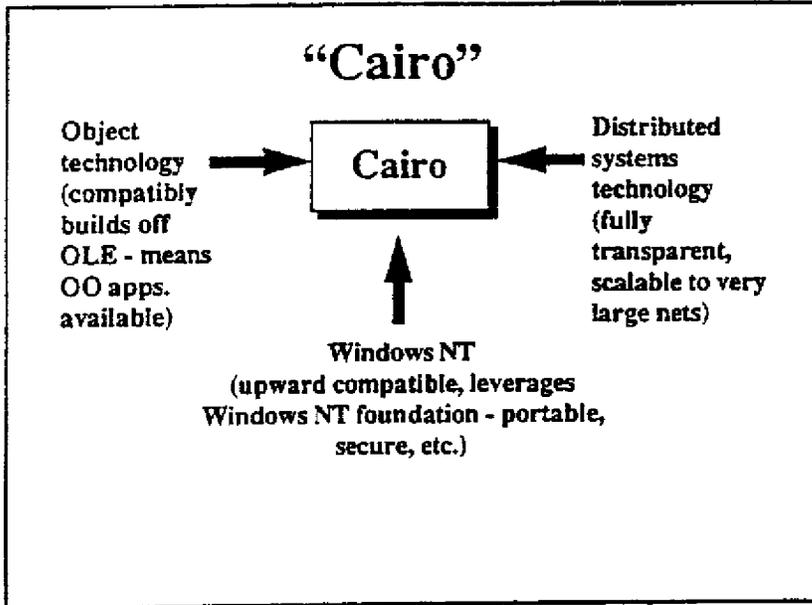
- ◆ Successor to Windows, Windows for Workgroups, "Snowball"
 - Targets installed base hardware - minimum 386SX/4 MB
 - Easy upgrade
- ◆ Focused on ease of use
 - New UI
 - "Plug and Play"
- ◆ Complete operating system: 32-bit internally and externally - will support large subset of Win32™ API

Future Of MS-DOS

- ◆ MS-DOS 6 released in U.S. - sales results very successful
- ◆ Asian MS-DOS 6 releases in Q3 and Q4 '93
- ◆ MS-DOS 7 will be based on technology from Chicago - 32-bit kernel, multiple VDMs

What Is "Cairo"?

- ◆ Successor to Windows NT (will run all Win16 and Win32 applications)
- ◆ Enables ease of use and new types of applications, for example:
 - Information access by query
 - Seamless view of network resources



**Windows And
System Design Issues**

Our Primary Challenge...

**Making it
Easier**

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Making It Easier: PCs With Microsoft Windows Ready-To-Run

- ◆ **Simplify purchase: logos on hardware and software for Windows**
- ◆ **Enable optimized PCs with Windows**
 - Special hardware and drivers
 - Customizable setup
 - Preinstallation of applications
- ◆ **Improve customer satisfaction**
 - First 15 minutes experience
 - Reduce support costs



Making It Easier

- ◆ **Improving usability (location of switches, connectors, etc.)**
- ◆ **Improved system feedback**
 - Windows™ Printing System
 - Extended capabilities port

“Plug And Play”

- ◆ An open initiative to develop standards for automatic hardware/software configuration
- ◆ An extensible framework to cover multiple bus standards, and multiple operating systems

Preparing For Plug And Play

- ◆ Autoconfiguration for Plug and Play ISA cards
 - Version 0.9 specification available now
- ◆ Participate in Plug and Play workshops and design reviews (Email: plugplay@microsoft.com)
- ◆ Windows™ Hardware Engineering Conferences
- ◆ Tell suppliers that you will require Plug and Play hardware and drivers

Windows Enables Increased Hardware Design Latitude

- ◆ VxDs for Windows 3.1
 - Virtual device drivers virtualize hardware, BIOS
- ◆ Windows NT HAL and drivers
 - Hardware abstraction layer virtualizes interrupts, DMA, bus architectures, timers and counters, MP startup code, etc.
 - Layered driver model maximizes design flexibility, minimizes cost of ECs
- ◆ Enables hardware innovation, differentiation, segmentation, value-add
- ◆ Release of Windows will continue this trend

Optimizing The Hardware-Software Fit

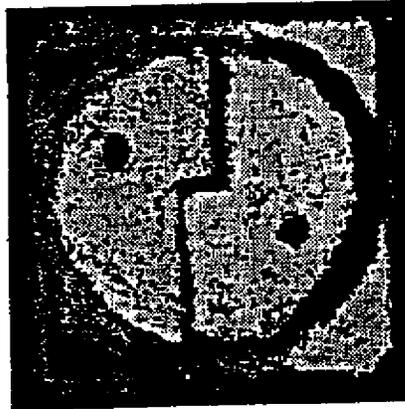
- ◆ Importance of great device drivers: DDks for Windows, Microsoft porting lab
- ◆ Optimize system performance of Windows applications with Systems Measurement Tool (SMT) for Windows
- ◆ Hardware Compatibility Tests (HCTs) for Windows and Windows NT
- ◆ Windows Hardware Engineering Conference (Sept./Oct. in Asia, Feb./Mar. in U.S.A.)
- ◆ Microsoft compatibility lab certification service
- ◆ Plug and Play support will be very important

Design For Manageability

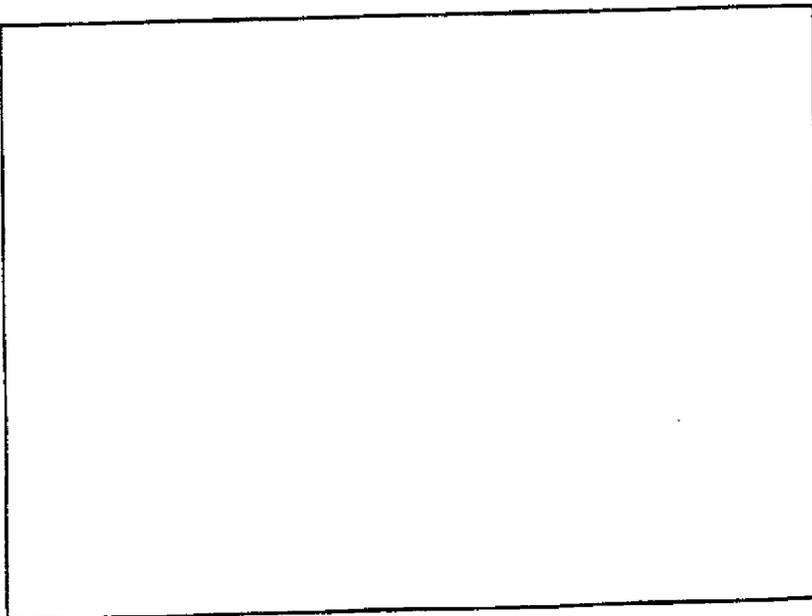
- ◆ Provide hardware solutions that:
 - Enable management of remote, distributed systems
 - Integrate well with the OS system management solutions
- ◆ Support DTMF for system management
- ◆ The hottest topic for MIS today

New Market Opportunities

- ◆ Windows for Workgroups: build PCs that are network-enabled/Snowball
- ◆ Windows NT
 - Corporate workstations
 - Server-class systems (more RAM, disk, better I/O, fault tolerance, MP support)
- ◆ Modular Windows: home, hand-held, office markets
- ◆ Portables: APM, Flash, Pen; Chicago release provides full complement of services for portables
- ◆ Important options: audio, video acceleration, tablets, CD-ROM, etc.



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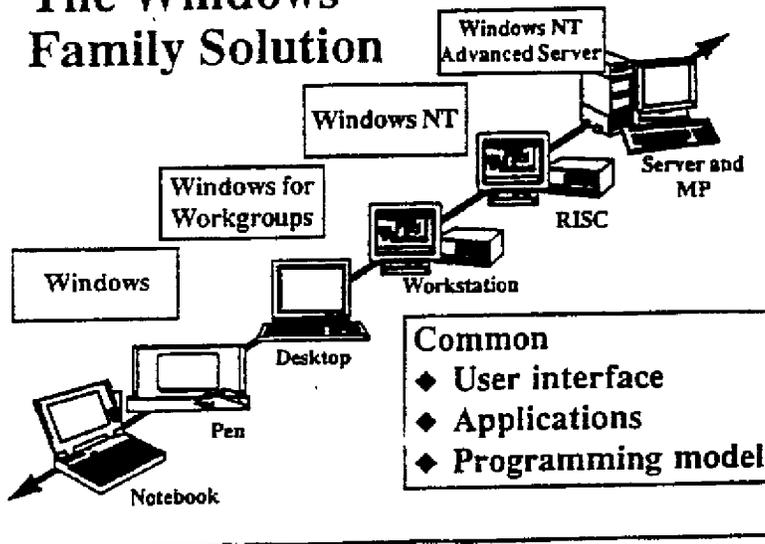
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Microsoft® Windows NT™ Overview



Carl Stork
Director
Windows Platform Definition
Microsoft Corporation

The Windows™ Family Solution



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Windows NT 3.1

"The most powerful operating system platform for client-server computing"

Features and power
of an advanced
operating system

+

The ease of use and
application support
of Windows

Windows NT Design Goals

- ◆ Powerful
- ◆ Reliable
- ◆ Open
- ◆ Easy to manage

- ◆ *Meet corporate, mission-critical computing needs*
- ◆ *Complement Windows/MS-DOS®*

Windows NT Design Overview

- ◆ Modular, microkernel-based architecture
- ◆ Excellent, scalable performance
 - > Fully 32-bit, multithreaded, multiprocessor system
- ◆ Robust, reliable system
 - > Fully protected, preemptive multitasking
- ◆ Portable - Intel® x86, MIPS, Alpha
- ◆ Comprehensive security model (C2)
- ◆ Built-in networking and peer server
- ◆ Support for Windows and MS-DOS applications
- ◆ OS/2® and POSIX subsystems
- ◆ High-performance, high-capacity I/O
- ◆ Easy, broad hardware support and adaptation

Windows NT File System (NTFS)

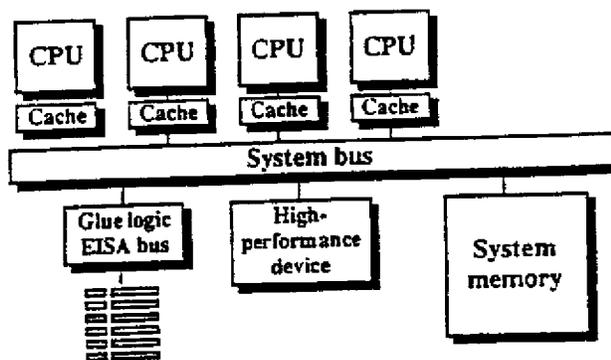
- ◆ Supports large disks and files; uses 64 bits for file sizes and offsets
- ◆ Crash recovery for large volumes takes seconds not minutes
- ◆ Unicode file names
- ◆ Files can have both long and 8.3 names
- ◆ Security - ACLs on files
- ◆ Extensible - can be enhanced without obsoleting volumes

Windows NT - SMP Features

- ◆ Multithreaded API for application
- ◆ SMP support integral to Windows NT design
 - > MP-safe microkernel
 - > Entire OS is multithreaded
 - > All threads (system and user) scheduled across all processors
- ◆ Device drivers MP-ready
- ◆ Tested on wide range of MP hardware from COMPAQ SYSTEMPRO® through NCR and Sequent® Symmetry®
- ◆ Designed for easy hardware adaptation

Windows NT Multiprocessing

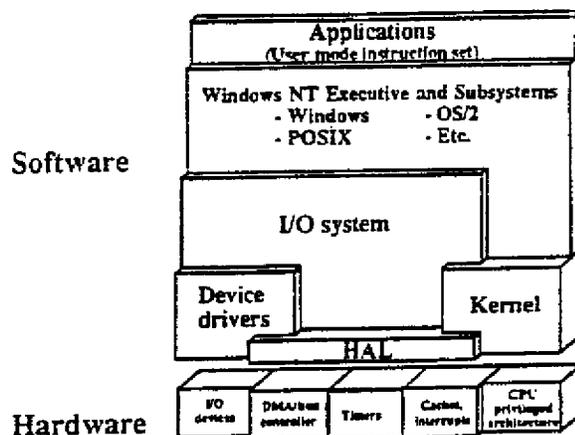
◆ Typical design



Hardware Abstraction Layer (HAL)

- ◆ Isolates Windows NT from specific hardware features
 - Allows shrink-wrapped OS on wide range of systems
- ◆ Provides uniform model for device drivers
- ◆ Loaded and bound by OS loader at boot time

Hardware Abstraction Layer (HAL)



Windows NT Products

Windows NT	Windows NT Advanced Server
<ul style="list-style-type: none">◆ High-end PCs<ul style="list-style-type: none">> Developers> Power users◆ Workstations<ul style="list-style-type: none">> Business (corporate)> Technical workstation	<ul style="list-style-type: none">◆ File and print server◆ Database server◆ Communications server◆ Messaging server◆ Business application server <p><i>Workgroup/department/ enterprise server</i></p>

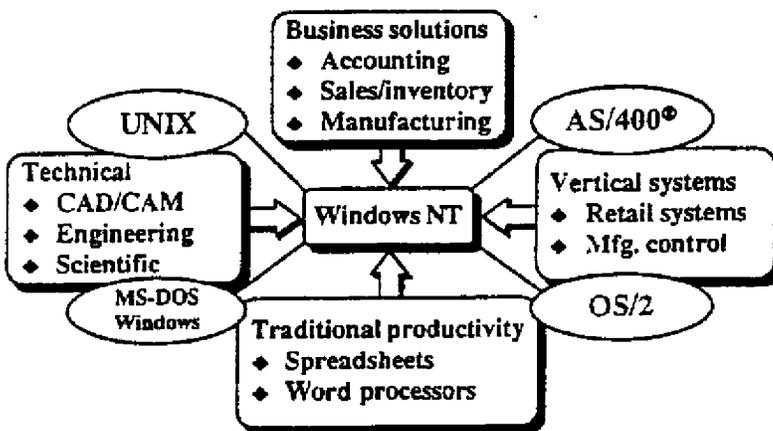
Windows NT Momentum Overview

- ◆ 50,000+ Windows NT SDKs sold worldwide in seven months
- ◆ 500+ applications committed in fall Win32™ catalog
- ◆ Wide availability of tools
 - > 70+ development tools already for sale
 - > Leading mainframe tool vendors (e.g., CA, D&B, Legent, TI, Knowledgeware) are porting to Windows NT
 - > Leading UNIX® tools and applications moving to Windows NT

Windows NT Momentum Overview

- ◆ SDK survey results
 - 62% plan to deliver applications within the next 12 months
 - Over 2000 retail applications
 - 3800 applications by/for corporate users
 - Over 2300 mission-critical applications by ISVs and "in-house"
 - 25% of the applications being ported from UNIX, VMS®, and MVS

ISVs Porting To Windows NT

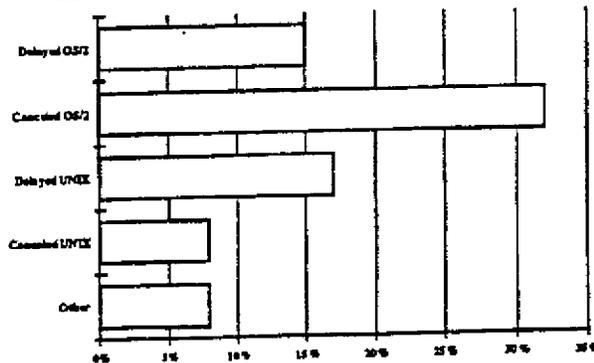


Windows NT Open Platform: Hardware

- ◆ Latest compatibility numbers
 - Intel/RISC: 864 uniprocessors, 21 multiprocessors, 6 R4000 systems
 - Peripheral devices: 649 printers, 49 SCSI adapters, 26 display adapters, 26 network adapters
- ◆ Layered device driver architecture
 - NDIS 3.0, SCSI miniport, video

Corporate Interest Information Week, 2/15/93

Have you delayed or canceled plans for other systems because of Windows NT? Customer survey



Windows NT Is: Powerful

Get more work done

- ◆ Easy to use - it's Windows!
- ◆ Runs multiple applications at the same time
 - > Preemptive multitasking
- ◆ System is always available - responsive

Windows NT Is: Powerful

Scalable power

- ◆ Runs on 32-bit and 64-bit Intel and RISC hardware
- ◆ Symmetric multiprocessor support
- ◆ High-capacity (supports 4 GB RAM and over 17 million TB of storage)



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Windows NT Is: Powerful

Powerful integrated networking services

- ◆ **Integrated consistent access to heterogeneous environment**
 - > Built-in networking
 - > Access to UNIX, DEC®, HP®, SNA, NetWare®, VINES®, NFS, LAN Manager servers
- ◆ **Integrated Mail and Schedule+**

Windows NT Is: Reliable

Stays available

- ◆ **Keeps running if applications fail**
 - > Protected Application Subsystems (PASS)
 - > Complete memory protection
 - > Hardware isolation
- ◆ **Protects against hardware failure**
 - > UPS
 - > Fault-tolerant file system (NTFS)

Windows NT Is: Reliable

Get back in business

- ◆ **Fast recovery after hardware failure**
 - NTFS transaction tracking
- ◆ **Accurate recovery of data**
 - Integrated back-up
 - Advanced fault tolerance in Windows NT Advanced server
 - RAID 5
 - Disk mirroring and duplexing

Windows NT Is: Reliable

Secure from tampering

- ◆ **Protects against inadvertent or malicious tampering**
 - Government C2 certifiable
 - User-level security with mandatory logon
 - Every object in system is secure
 - Secure file system

Windows NT Is: Reliable

Easy to manage and service

- ◆ **Integrated system management services**
 - Configuration management
 - Performance management
 - Disk management
 - User management
 - Centralized administration with Windows NT Advanced Server

Windows NT Is: Open

Open platform

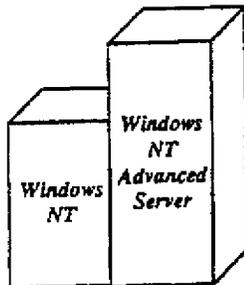
- ◆ **Open network support including:**
 - NetWare
 - Banyan® VINES
 - LAN Server
 - Pathworks™
 - SNA
- ◆ **Built-in standard protocols**
 - TCP/IP
 - NetBEUI
 - SNMP and NetView®

Windows NT Is: Open

Open platform

- ◆ Broad hardware support
 - Hundreds of platforms (desktops and servers)
- ◆ Wide variety of PC peripherals supported
- ◆ Device driver kits, HAL kits
- ◆ Broad ISV support
- ◆ Support for MS-DOS, Windows 3.1, Win32, OS/2 and POSIX applications

Windows NT Advanced Server



- ◆ Windows NT
- ◆ LAN Manager
 - Centralized administration
 - Advanced fault tolerance
- ◆ Advanced connectivity services
 - Remote Access Server + Services for Macintosh®

Windows NT Is: *Powerful*

	Windows NT	Windows NT Advanced Server
◆ Scalable	x	x
◆ Portable	x	x
◆ Huge capacity	x	x
◆ Security	x	x
◆ Integrated networking	x	x
◆ Local system management	x	x
◆ Distributed security model		x
◆ Remote Access Service		x
◆ Macintosh connectivity		x
◆ Central management		x

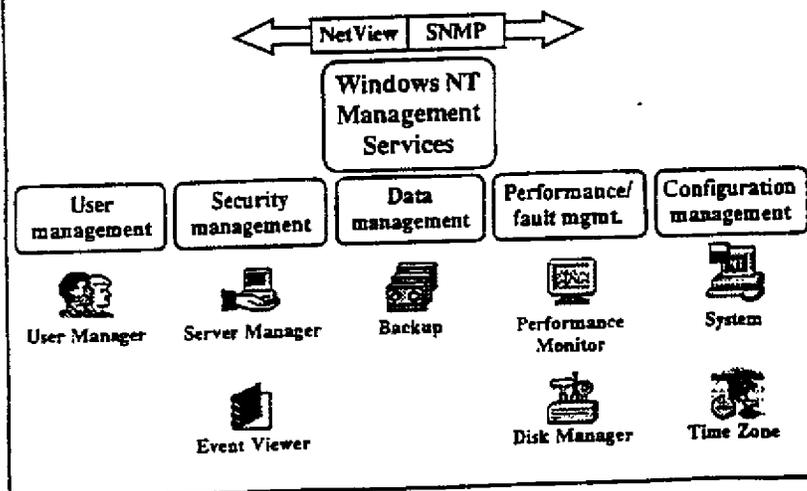
Windows NT Is: *Reliable*

	Windows NT	Windows NT Advanced Server
◆ Microkernel	x	x
◆ Protected memory	x	x
◆ Status management tools	x	x
◆ Secure	x	x
◆ Basic fault tolerance (UPS, NTFS)	x	x
◆ Mirroring		x
◆ Duplexing		x
◆ RAID 5		x
◆ Platform for powerful server applications		x

Windows NT Is: *Open*

	Windows NT	Windows NT Advanced Server
◆ Thousands of applications	x	x
◆ Hundreds of tools	x	x
◆ Hundreds of hardware platforms	x	x
◆ Major networks supported (Novell, IBM, Microsoft, Banyan, UNIX)	x	x
◆ Supports standards (TCP/IP, SNMP, NetView)	x	x
◆ Extensible	x	x

Windows NT 3.1 Built for manageability

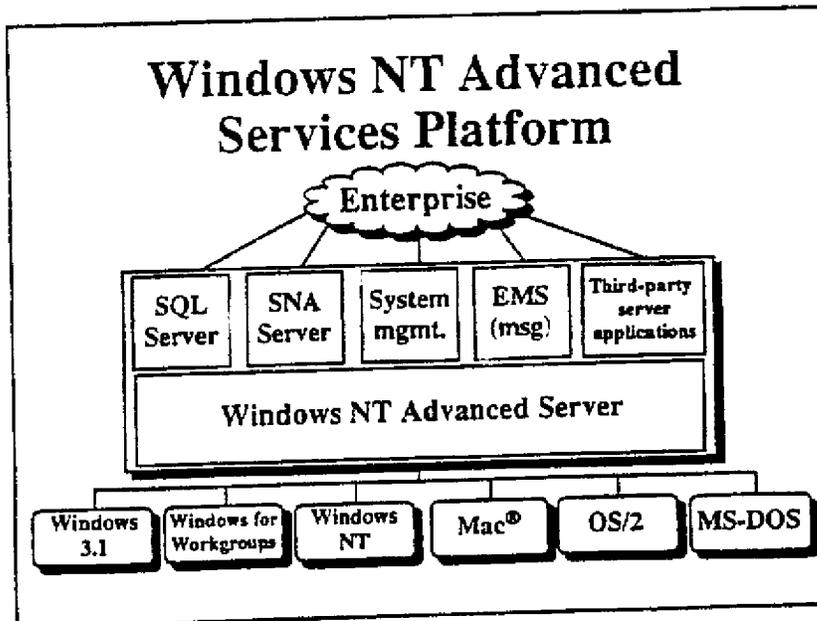


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Microsoft SQL Server For Windows NT

- ◆ Focus is on integration, performance and scalability
- ◆ 100% 32-bit and Win32
- ◆ Fully interoperable with SQL Server 4.2 for OS/2
- ◆ Compatible with latest Sybase versions
- ◆ Complete support for existing applications

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SQL Server For Windows NT

What's new at a glance

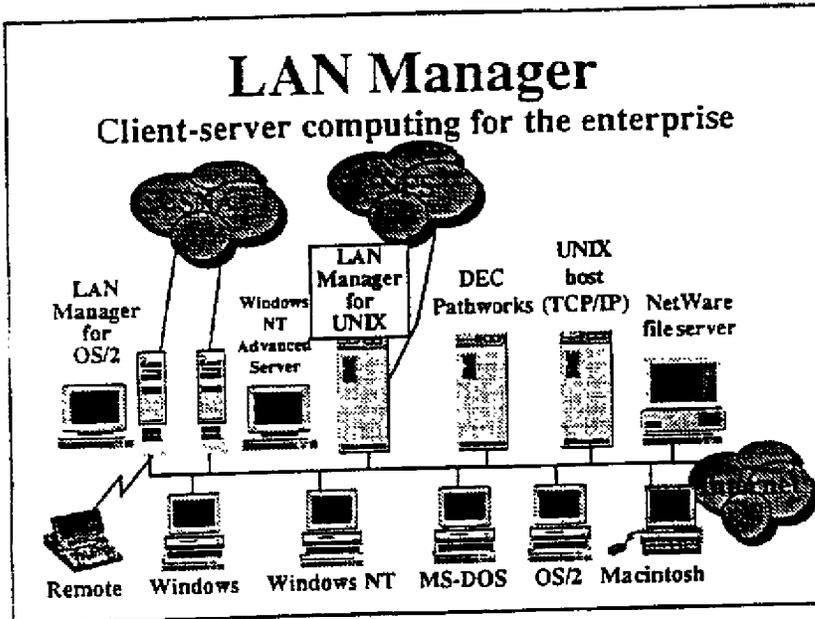
- ◆ Fully integrated with Windows NT
 - Performance Monitor
 - Event Logger
 - Control services
- ◆ Thread level multiprocessor support
- ◆ Configurable protocols
- ◆ UNIX interoperability
- ◆ Portable to RISC
- ◆ New 32-bit Windows administration tools

SNA Server For Windows NT Integration With SNA Systems

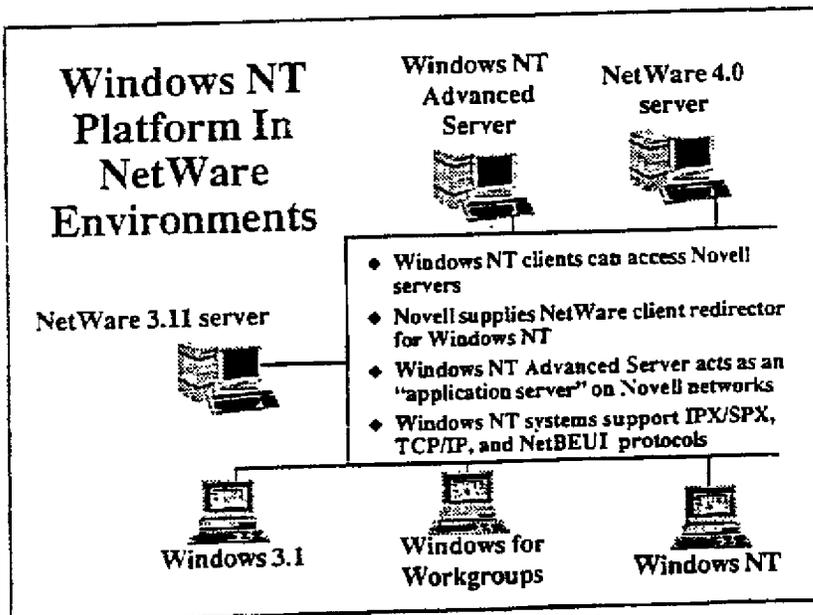
- ◆ Intelligent client-server SNA gateway
- ◆ Supports full set of SNA APIs (EHLLAPI, APPC) and applications
- ◆ Runs over standard connections (TR, SDLC, X.25, DFT)
- ◆ Load balancing and automatic link recovery
- ◆ Supports 3270, 5250, and other emulators from leading vendors

LAN Manager

Client-server computing for the enterprise



Windows NT Platform In NetWare Environments

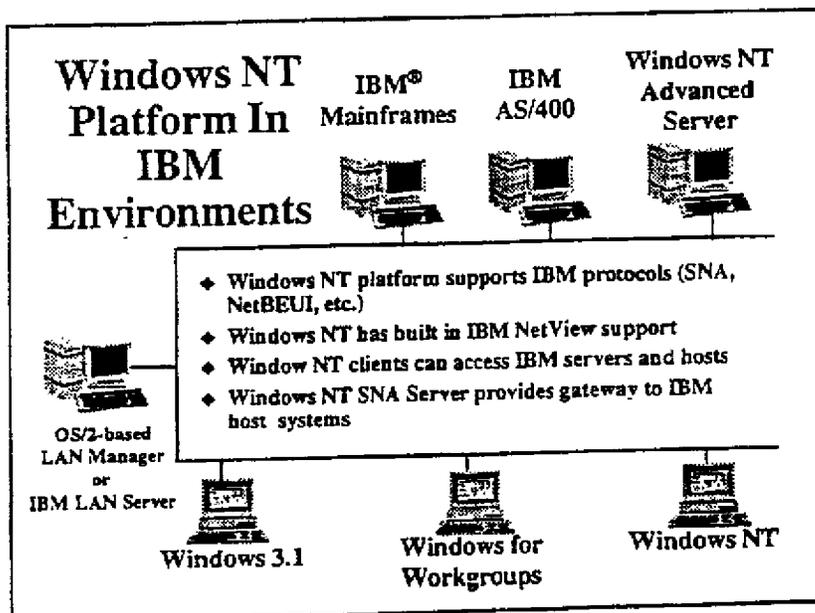
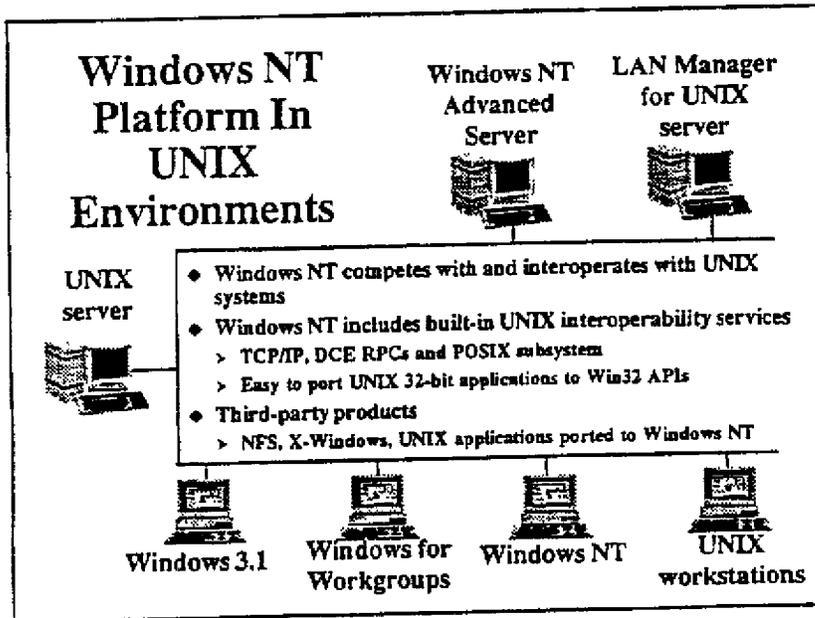


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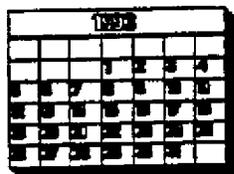
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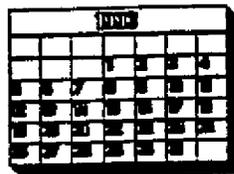
Windows NT And Windows NT Advanced Server Timetable

- ◆ Win32 SDK 7/92
 - ◆ Beta 1 10/92
 - ◆ Beta 2 3/93
 - ◆ Shipment Q2
- Ship "when it's great!" - target Q2*
- ◆ Japanese Q4 '93
 - ◆ Chinese, Korean Q2 '94

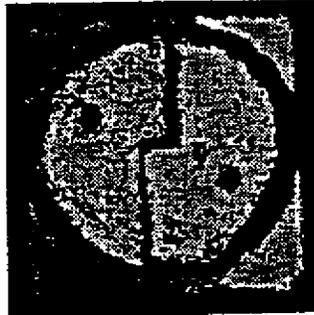


Windows NT Platform Timetable

- ◆ SQL Server SDK Q1
- ◆ SNA Server beta Q1
- ◆ Hermes beta Q2
- ◆ SQL Server ship Q3
- ◆ SNA Server ship Q3
- ◆ Hermes ship Q4



Future Of Windows™



Tim Breidigan
Product Manager
Personal Systems
Microsoft Corporation

Coming Attractions For Windows

- ◆ "Snowball"
- ◆ "Chicago"
- ◆ Plug and Play initiative
- ◆ Implications for OEMs

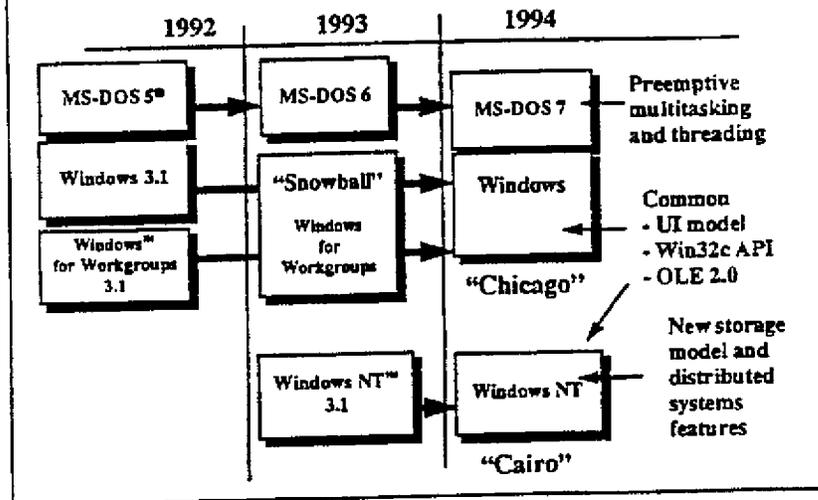
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Windows Family - Future Releases



Windows For Workgroups

- ◆ Basic networking built into Windows
 - File and printer sharing
 - Email and scheduling
 - Network DDE
- ◆ Ideal for small office
 - Low cost
 - No dedicated server or network operating system
- ◆ Integrates into existing networks



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Windows For Workgroups

Positive technical reviews

- ◆ NSTL highest "overall evaluation" rating among Windows peer-to-peer LAN OSs
- ◆ PC Magazine technical excellence
- ◆ PC/Computing MVP
- ◆ BYTE Award of Excellence
- ◆ Best of show at COMDEX '92

Next Release: "Snowball" (Windows for Workgroups 3.11)

- ◆ Natural upgrade to Windows
- ◆ Faster, easier, better, stand-alone Windows
- ◆ Improved network client
- ◆ Improved peer server

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Snowball

Faster, easier, better Windows

- ◆ New 32-bit file system, drivers
- ◆ Improved File Manager and Print Manager
- ◆ Schedule+, fax support, point-to-point serial communication
- ◆ Additional utilities

Snowball

Improved network client

- ◆ Windows 3.1 network client options
- ◆ 32-bit network access
 - > LAN Manager, Windows NT redirector
 - > IPX, NetBEUI transports
 - > Net card drivers
- ◆ TCP/IP, DLC support
 - > Real mode at ship, protect mode by year-end
- ◆ Remote Access Services

Snowball

Improved peer server

- ◆ **Choice of print and/or file sharing**
- ◆ **New administration and security options**
- ◆ **Small MS-DOS redirector and peer server**
- ◆ **IPX transport**
- ◆ **ODI net card drivers**

Snowball Demonstration

Snowball

Great choice for OEM preinstallation

- ◆ **Faster, easier, better Windows 3.1**
- ◆ **Improved network client**
- ◆ **Improved peer server**
- ◆ **Network adapter and software can be added by customer when ready**
- ◆ **Available Q3 '93**

Windows "Chicago"

- ◆ **Chicago overview**
- ◆ **Windows mobile services**
- ◆ **Plug and Play**

Chicago Mission

- ◆ For customers
 - Makes using PCs easy for everyone
- ◆ For the industry
 - A no-compromise standard for PCs

Chicago Overview

PC market situation

- ◆ PC use has proliferated
 - Standardized, cost-effective
 - But not most powerful or easiest
- ◆ PCs are still too hard to use
 - Poor hardware/software integration
 - Big learning curves, support burden
 - Limits new uses - CD-ROM, fax, email
- ◆ Potential for growth still high
 - Easier to use, better integrated products
 - Enable new uses, new customers

What Is "Chicago"?

- ◆ Successor to Windows, Windows for Workgroups, "Snowball"
 - > Targets installed base hardware - minimum 386SX/4 MB
 - > Easy upgrade
- ◆ Focused on ease of use
 - > New UI
 - > "Plug and Play"
- ◆ Complete operating system: 32-bit internally and externally - will support large subset of Win32™ API

Chicago Potential Impact

- ◆ For customers
 - > New users: no more mystery, broad appeal
 - > New uses: communications, network access, multimedia, pen... and more
- ◆ For the industry
 - > Increased growth
 - > Framework for hardware innovation
 - > A better way for the industry to work together

Chicago Benefits Summary

- ◆ Easy to use
- ◆ Plug and Play
- ◆ Modern operating system design
- ◆ Network and remote services
- ◆ Will be a compelling upgrade

Easy To Use

- ◆ Improved shell
 - Merged Program/File/Print Manager
 - Drag-and-drop feature of desktop objects
 - OLE 2.0 enabled
 - File Viewer technology
- ◆ Improved interface
 - Printing
 - MS-DOS-based applications

Plug And Play

- ◆ Easy hardware installation
 - Help user install current class of hardware
 - Automatically install new class of hardware
- ◆ Easy system configuration
 - Property sheets
 - Control Panel folder

Modern Operating System Design

- ◆ Integrated protect-mode kernel
 - Preemptive multitasking
 - Multithreading
- ◆ 32-bit components
 - Device drivers
 - File system with long file names
 - Communications
 - Networking
 - Printing
- ◆ 32-bit API

Network And Remote Services

- ◆ Chicago base
 - Universal network client
 - Built-in email and EFAX
- ◆ Chicago networking services
 - Windows-based and MS-DOS-based peer server
 - Post office and administrative utilities
- ◆ Chicago remote services
 - Remote network access, email
 - File synchronization

Compelling Upgrade

- ◆ Runs on mainstream PC platform
- ◆ Compatible with Windows-based and MS-DOS-based applications and drivers
- ◆ Safe, simple setup process

Chicago Demo

Windows Mobile Services: Trends And Issues

- ◆ Mobile: fastest growing hardware segment
- ◆ Apple rapidly gaining share
- ◆ Usage changing from desktop replacement to second machine

The Chicago Mobile Machine

- ◆ Great industrial design
- ◆ Tight software/hardware integration
- ◆ Easy-to-use, tightly integrated remote networking
- ◆ Explicitly recognize that user may have a desktop machine
- ◆ Complete APM implementation
- ◆ Convertible - integrated pen (desirable)

Range Of Hardware

Full-featured primary machine notebooks

- ◆ Characteristics
 - > Integrated pointing device
 - > Color
 - > Better industrial design
 - > Better docking

Companion machine (Optimized for portability)

- ◆ Characteristics
 - > 3.3V, < 3 pounds
 - > Great display
 - > Keyboard and pen
 - > Grid approach
 - > Dauphin approach
 - > 486
 - > 4 MB DRAM
 - > PCMCIA
 - > Minimal storage (Use ROM)

Remote Network Access

- ◆ Server and client integrated into Chicago
- ◆ WOSA architecture: MAPI, ODBC, etc.
- ◆ IPX and NetBEUI
- ◆ Peer-to-peer capability
- ◆ ARA as the target
- ◆ Node and OS passthru security (MIS control)

Chicago Mobile Software

- ◆ Remote Network Access
- ◆ Terminal, Fax, Mail, Schedule+
- ◆ File synchronization
- ◆ Deferred I/O: printing, fax, email
- ◆ Pens
- ◆ Power management

Pens

- ◆ **User model**
 - Enhanced gesture set
 - Ink
- ◆ **System support for non-pen apps.**
 - Transparent ink OLE object
 - Lens
- ◆ **Recognition**
 - Substantially enhanced print
 - Kanji
 - Working on cursive

Plug And Play Problem

- ◆ **Customers can't install hardware**
 - Must know IRQ, port, base I/O, DMA, etc.
 - Even experts fail
- ◆ **No technical framework today**
 - Hardware can't resolve conflicts
 - Software has no idea what's in the system
- ◆ **Need framework for integrating hardware and software, today and tomorrow**

Plug And Play

Results of problem

- ◆ **Difficult configuration => high support costs**
 - **OEMs, ISVs**
 - **Corporations**
- ◆ **User frustration, dissatisfaction => lost sales**
 - **80% of PC owners would like a CD-ROM*, but only 10% feel capable of installing themselves**
- ◆ **Limits industry growth**

* Source: Microsoft survey

Plug And Play

- ◆ **An open initiative to develop standards for automatic hardware/software configuration**
- ◆ **An extensible framework to cover multiple bus standards, and multiple operating systems**

Plug And Play

Solution framework

- ◆ **Objectives**
 - **Install and configure new devices automatically**
 - **Dynamically change configuration**
 - **Be OS- and hardware-independent**
- ◆ **Requirements**
 - **Compatibility with installed base**
 - **Inexpensive for OEMs, IHVs**

Plug And Play Requirements

- ◆ **Be able to identify all hardware components in the system**
- ◆ **Get resource requirements and assign resources (program device if necessary)**
- ◆ **Locate, load, and unload drivers**
- ◆ **All devices software programmable**
- ◆ **Backward compatibility**
- ◆ **Address new hardware (PCI, PCMCIA, etc.)**
- ◆ **Inexpensive implementation**

Plug And Play Universe

- ◆ Traditional buses and devices (ISA, EISA, microchannel)
- ◆ Local buses (PCI, VL, etc.)
- ◆ PCMCIA
- ◆ SDSI
- ◆ Monitors
- ◆ Printers
- ◆ Input devices

Plug And Play Software Components

- ◆ Device enumeration
- ◆ Resource arbitration
- ◆ Configuration management
- ◆ Device drivers
- ◆ Dynamic events

Plug And Play

ISA specific proposal

- ◆ **Current ISA cards cannot be reliably identified**
- ◆ **Plug and Play ISA support requires hardware and software enhancement**
- ◆ **Proposal introduced at WinHEC**
- ◆ **We would like your feedback**
 - **Email plugplay@microsoft.com**

Preparing For Plug And Play

- ◆ **Autoconfiguration for Plug and Play ISA cards**
 - **Version 0.9 specification available now**
- ◆ **Participate in Plug and Play workshops and design reviews (e-mail: plugplay@microsoft.com)**
- ◆ **Windows™ Hardware Engineering Conferences**
- ◆ **Tell suppliers that you will require Plug and Play hardware and drivers**

Summary

Recommendations for OEMs

- ◆ Preinstall Snowball
- ◆ Optimize systems for Chicago
 - CD-ROM, fax modem, sound
 - Flat Frame buffer local bus video
 - ECP, 16550 UART
 - Removable media detection
 - Hot docking integration
- ◆ Use Plug and Play components
- ◆ Optimal mobile systems
 - Companion and full-feature

Windows™ Sound System



Blake Irving
Product Manager
Windows Sound System
Microsoft Corporation

Customer Research

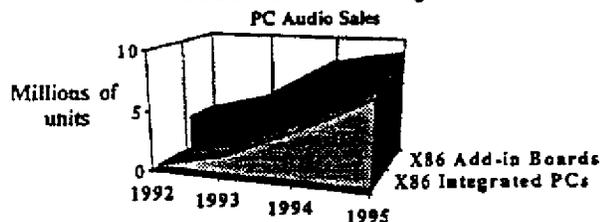
Windows Sound System

- ◆ "PC audio" perceived as a compelling technology by all business sectors
 - > Small business to "Fortune 500"
 - > Insurance to manufacturing
- ◆ Hardware technology perceived as stable and mature
 - > High quality available at low cost today
 - > Multitude of differentiated features

Customer Research Windows Sound System

- ◆ Customers believe a wide variety of hardware solutions are available
 - > New PCs with integrated audio
 - > Add-in cards for installed base of PCs
- ◆ Supported by mainstream graphical environments
 - > Windows™ 3.1, Mac®, UNIX®

PC Audio Momentum Windows Sound System



- ◆ These factors are fueling growth...
 - > Over 8 million audio boards projected in 1994
 - > Over 4 million integrated audio PCs projected in 1994
- ...but

Sources: Ineco, PC Week, Microsoft

Customer Requirements Windows Sound System

- ◆ **For mainstream use, customers have insisted that the industry deliver clear benefits**
 - **Must improve productivity**
 - **Must improve communication**
 - **Must integrate seamlessly**
 - **Must be easy to use**

Windows Sound System

- ◆ **A powerful compliment of software and hardware for Windows 3.1 users**

Integrates audio seamlessly into Windows

- **Voice annotation of documents and mail**
- **Audible proofing of spread sheets**
- **Voice command and control of Windows**
- **Improved management of audio data**
- **Increased enjoyment of the PC**

Receiving High Marks Windows Sound System

"An excellent combination... easy-to-use utilities makes working with sound painless...Working with sound has never been easier"

Windows Magazine, December 1992

"The Windows Sound System is bound to set new price performance standards for the industry and redefine the market for PC audio..."

InfoWorld, November 30, 1992

"Puts high-quality business audio within reach of any Windows 3.1 user. It could even change the way you work...it isn't PC Sound as we know it."

PC Computing, December 1992

- ◆ PC/Computing MVP award nominee
- ◆ Windows Magazine "Top 100 Products"
- ◆ PC Magazine "Top 100 Products"

Windows Sound System

- ◆ Demonstration of capabilities
 - > Quick Recorder
 - > Voice annotating documents
 - > ProofReader
 - > Audible proofing of spreadsheets
 - > Voice Pilot
 - > Command and control of Windows 3.1
 - > Other Windows Sound System utilities
 - > Make audio enjoyable and manageable

Retail Product

Windows Sound System

- ◆ **Windows Sound System**
 - **ISA Sound Board**
 - **Microphone**
 - **Headphones**
 - **Windows Sound System software**
 - **Proofreader**
 - **Voice Pilot**
 - **Quick Recorder**
 - **All other Windows Sound System utilities**
 - **MS-DOS® games VXD for SoundBlaster™ compatibility**

OEM Products

Windows Sound System

- ◆ **Developers Assistance Kit (DAK)**
 - **"How to" guide for audio hardware**
 - **Available now and free of charge**
- ◆ **OEM Distribution Kit (ODK)**
 - **OEM software for DAK-compliant hardware***
 - **Available now with license**
- ◆ **MS-DOS Developers Kit**
 - **Game developers kit for Windows Sound System compatibility available now**
 - **Available now and free of charge**

*Also supports the ES488 Audio Drive

OEM Products

Windows Sound System

- ◆ **Hardware is available to OEMs from Microsoft**
 - **Windows Sound System ISA Board**
 - **Microphones**
 - **Headphones**
- ◆ **Special products for OEMs buying PCs or system boards with integrated audio**
 - **A "no board" package for small OEMs and assemblers**

Future Product Direction

Windows Sound System

- ◆ **Extensible software architecture for a myriad of hardware solutions**
 - **From lowest-cost 8-bit CODECs to high-end DSP-enabled solutions**
- ◆ **Improve on award winning features**
 - **Improve compression for communications**
 - **Further simplify user interface**
 - **Improve voice input and output capabilities**

Pointing Devices - Products Update



Karl Empey
Product Manager
Mouse Marketing
Microsoft Corporation

Introduction

- ◆ Market overview
- ◆ Future trends
- ◆ Microsoft's response to changing times
 - > New products
 - > Improved support
- ◆ Summary

Market Overview - A Hardware Perspective

- ◆ Mouse packaging is standard with almost all new major brand PCs
- ◆ Potential retail market shrinking
- ◆ Low cost - low-quality mice in abundance
- ◆ PC manufacturers finding it difficult to differentiate themselves from their competitors
- ◆ OEM suppliers developing new and innovative products
- ◆ Increasing awareness of office ergonomics. Users interact with three key elements:
 - > Mouse
 - > Keyboard
 - > Monitor

State Of The Mouse Market

- ◆ Moving to OEM
- ◆ Upgrade/replacement trends
- ◆ 17-18 million pointing devices sold annually
- ◆ 50 million installed
- ◆ Few technological changes
- ◆ Mouse is the standard pointing device

Future Trends

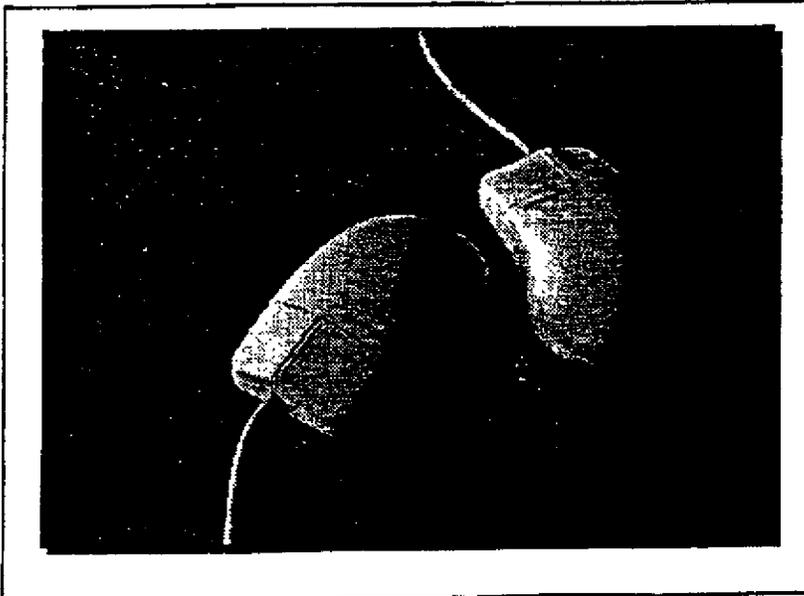
- ◆ PC manufacturers strive to keep costs low while adding new features - focusing on:
 - > Ergonomics
 - > Brand awareness
 - > Cost
 - > Innovative technology to differentiate themselves from competitors
- ◆ By offering with their systems a mouse which is highly successful in the retail market, OEMs add value to their own products

Microsoft's Response To Market Demands

- ◆ New products
- ◆ Improved service and distribution of OEM product

The Microsoft® Mouse Version 2.0!

"The ultimate Microsoft Windows™
pointing device offering the best in
comfort and accuracy while setting
the ergonomic standard for the
industry."



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Why A New Mouse?

- ◆ Improve ergonomics and comfort
- ◆ Increase software/hardware interaction efficiency
- ◆ Added value and differentiation for OEMs
- ◆ Reduce cost while increasing perceived quality

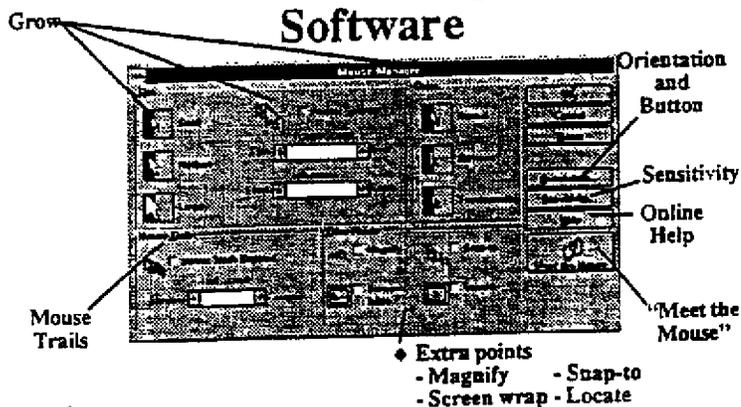
What Does Ergonomics Mean To The Customer?

- ◆ Comfortable in hand - "Just feels good"
- ◆ Safe from a repetitive stress stand point
- ◆ Organic shape looks modern and pleasing to the eye

Increased Efficiency

- ◆ Mouse designed to not only increase comfort and ease of use, but to maximize efficiency under the Windows environment
 - > Weight
 - > Optimum grip architecture
 - > Ball location
- ◆ Software designed to complement these features

New And Improved Features Gives A New Meaning To Mouse Software

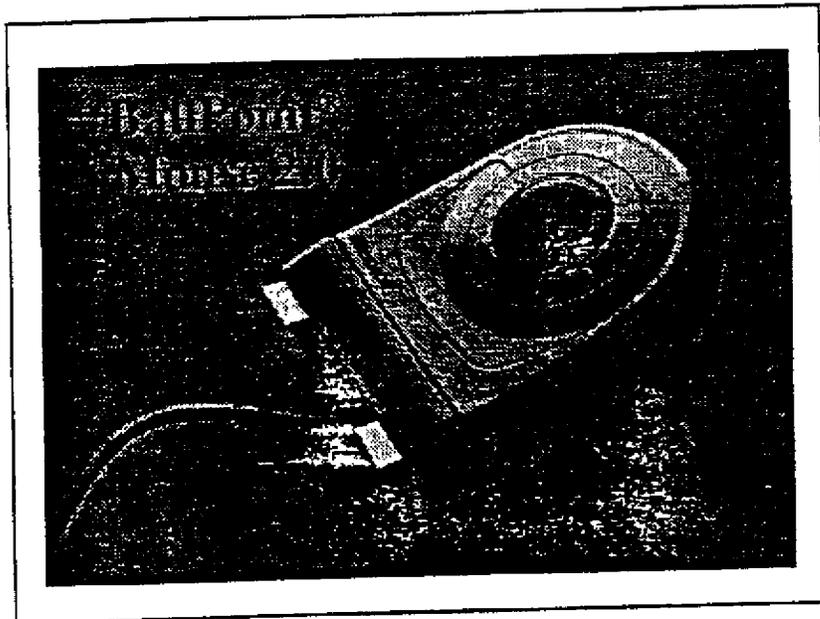


Highest Quality At Competitive Prices

- ◆ Microsoft adheres to the highest quality standards while striving for the lowest cost possible
- ◆ Develops products which target different segments of the market
 - > High-end, Mouse 2.0 April, '93
 - > Price-sensitive Q4 '93

Product Features

Feature	MS Mouse 2.0	Low-cost
PPI	400	3-400
I/O	Serial PS/2 Combi, bus	Serial PS/2
Shape	Mouse 2.0	Mouse 2.0
Color	White	Light grey
Finish	Gloss	Light texture
Logo	MS	MS
Software	9.0	9.0
Cable	7.5'	6'
Cable color	Green	Grey
Life	100 miles	100 miles



The Most Comfortable And Easy To Use Portable Pointing Device

- ◆ New ergonomic shape
- ◆ Many design improvements
- ◆ New attaching mechanism
- ◆ Available in September
(PS/2®, QuickPort™)

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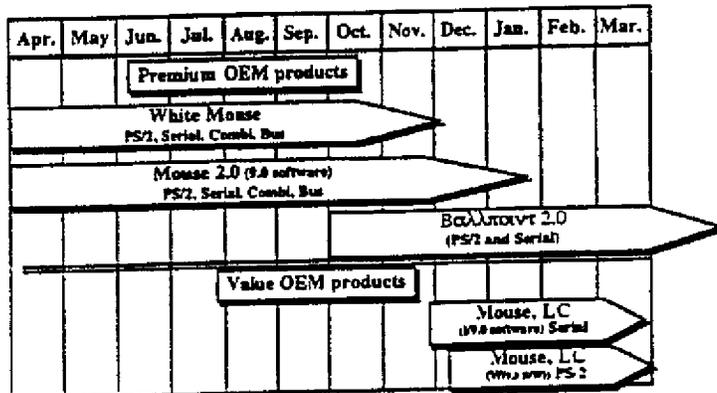
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Why A New Ballpoint Mouse?

- ◆ Integrated pointing devices do not currently satisfy heavy PC laptop users needs
- ◆ Meet ergonomic needs
- ◆ Design improvements

OEM Product Roadmap



Improved Customer Service And Support

- ◆ Increased involvement by local subsidiaries
- ◆ Improved communication between the hardware group and our customers

New Distribution Procedures

- ◆ For very high-volume manufacturers
 - Customers place orders to local sub. and mouse vendor drop ships to the customer
 - Customers place orders to local sub. and product is made available at the mouse vendor's site - commences July, 1993
- ◆ For medium to small OEM
 - Product made available to Microsoft's regional MED program - commences July, 1993

Summary

- ◆ Mouse software complements the hardware perfectly
- ◆ Quality mouse at affordable price making it the most attractive solution for OEM customers
- ◆ Renewed commitment to OEM customers through
 - Improved service and support for OEM customers
 - Increased flexibility, more options

Intel® PC Industry Perspective



Joachim Kempin
Vice President
OEM Sales
Microsoft Corporation

Topics

- ◆ Market observations
- ◆ Industry health factors
- ◆ User acceptance of Windows™
- ◆ Technology trends

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Market Observations

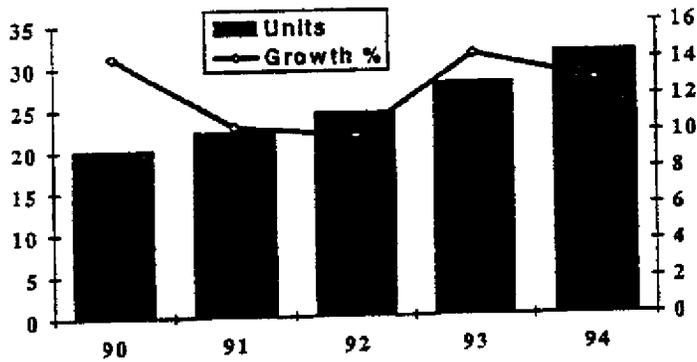
- ◆ Market size
- ◆ Small versus big
- ◆ Manufacturing trends

Market Observations

Source: Microsoft reports and research
Years: all in Microsoft fiscal year (July 1 to June 30)
Consumption: local country and own research

Worldwide Market Size

Units of Intel PCs (in millions of units)



Worldwide Processor Mix

	FY '93	FY '94
286/8086	4%	1%
386	46%	25%
486/Pentium	50%	74%

Consumption Analysis

	<u>FY '93</u>	<u>FY '94</u>	<u>Growth %</u>
Europe	9.62	10.60	10.2
Far East	3.80	4.20	10.5
Intercontinental	4.63	5.70	23.1
U.S.	9.85	11.00	11.7
Total	27.90	31.50	12.9

Small Versus Big

Big "6" (alphabetically):
AST
Compaq
Dell
Gateway 2000
IBM
Packard Bell

Small manufacturer: <30,000 units/year

Small Versus Big

	<u>FY '91</u>	<u>FY '92</u>	<u>FY '93</u>	<u>FY '94</u>	<u>Growth %</u>
Big "6"	4.9	6.1	9.5	13.0	37.0
All others	10.8	10.1	9.4	8.7	-8.0
Small manufacturers	6.5	8.2	9.1	9.8	9.0
TOTAL	22.2	24.4	27.9	31.5	12.9

Small Versus Big Percent of marketshare

	<u>FY '91</u>	<u>FY '92</u>	<u>FY '93</u>	<u>FY '94</u>
Big "6"	22	25	34	41
All others	49	42	34	28
Small manufacturers	29	43	32	31

PC Manufacturers By Area Sales (Millions of units)

	<u>FY '91</u>	<u>FY '92</u>	<u>FY '93</u>	<u>FY '94</u>	<u>Growth %</u>
Europe	4.3	4.6	5.1	5.8	14.8
Far East	6.9	6.1	5.3	5.6	4.7
Intercontinental	.5	1.2	1.9	2.1	10.9
U.S.*	10.6	12.5	15.6	18.0	15.4
Total	22.2	24.4	27.9	31.5	12.9

*IBM part of U.S.

PC Manufacturers By Area Percent market share

	<u>FY '91</u>	<u>FY '92</u>	<u>FY '93</u>	<u>FY '94</u>
Europe	19	19	18	18
Far East	31	25	19	18
Intercontinental	2	5	7	7
U.S.*	48	51	56	57

*IBM part of U.S.

Market Observations

Price of differential

Small
manufacturers

10-15%

Big "6"
brand names

Industry Health Factors

- ◆ Low overhead
- ◆ Outsourcing
- ◆ Unique distribution
- ◆ Value-added products

Industry Health Factors

- ◆ Low overhead
 - Administration
 - Executive pay
 - Research and Development (R&D)

Industry Health Factors

- ◆ Outsourcing
 - Design companies versus internal R&D.
 - In-house manufacturing versus "OEM"-ing
 - Buying components versus making your own

Industry Health Factors

- ◆ Unique distribution
 - Explore all avenues?
 - Understand country specific buying behavior
 - Fastest growing segment
 - Direct mail
 - Mass merchant/superstores
 - Price clubs

Industry Health Factors

- ◆ Value added products
 - Know trends/be first!
 - Some trends
 - CD-ROM-based PCs
 - MP servers
 - Smart notebooks/docking stations
 - High-end graphical workstations
 - Plug and Play PCs

User Acceptance Of Microsoft® Windows

- ◆ Windows penetration
- ◆ Windows software sales
- ◆ Windows logo success

Microsoft Windows PC Forecast (Millions of units)

	<u>FY '93</u>	<u>FY '94</u>	<u>Growth %</u>
PCs with Windows	14.0	20.0	43.3
<u>Penetration</u>	<u>50%</u>	<u>63%</u>	
Total PCs	27.9	31.5	12.9

Windows Software Sales In Europe

(Millions of dollars)

	<u>1991</u>	<u>1992</u>	<u>% Change</u>	<u>% Marketshare</u>
MS-DOS®	624	446	-29	35
Windows	323	700	117	56
MacIntosh®	85	103	20	8
OS/2®	12.8	14.2	11	1
Total	1050	1271	21	100

Windows Software Sales Growth By Country Between CY '91-'92

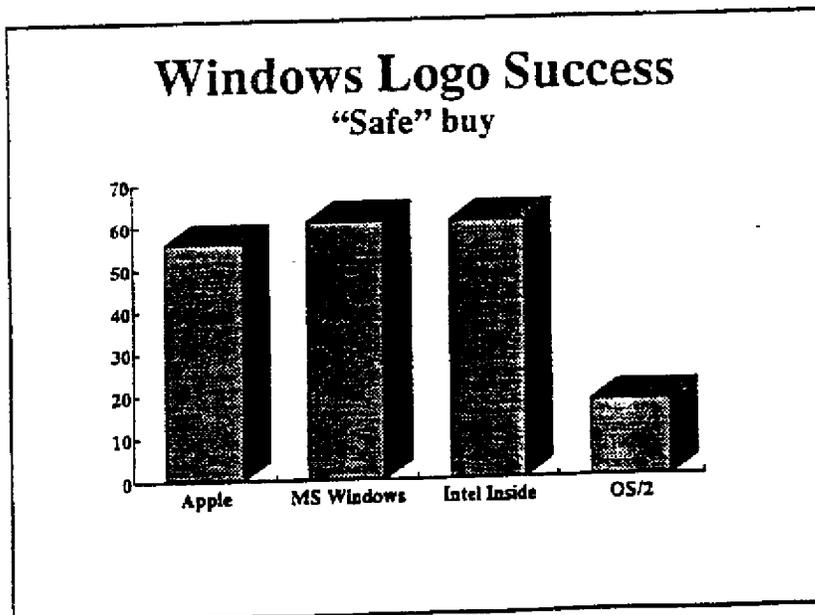
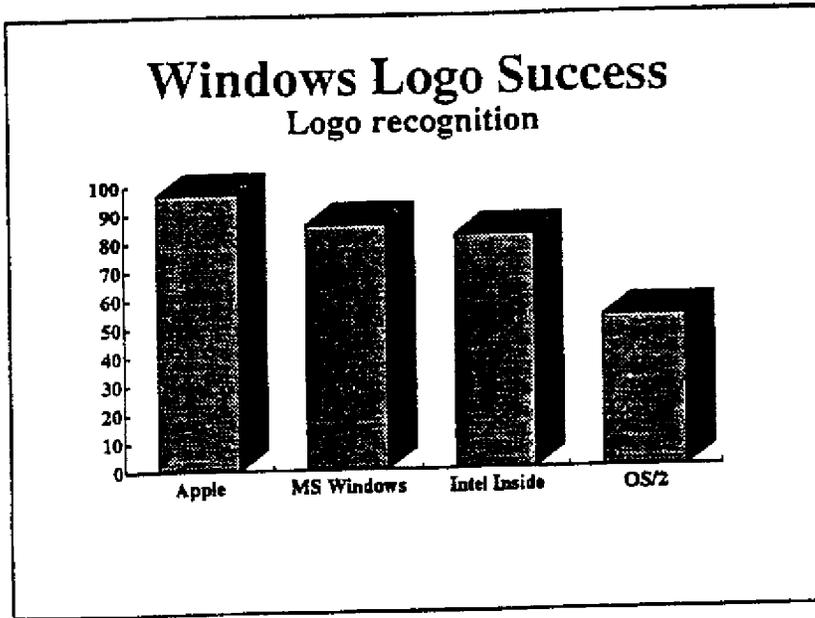
Germany	125%
France	63%
U.K.	170%
U.S.	95%

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Technology Trends

- ◆ Consumer PC - fastest growing segment
- ◆ Medium to small business is second
- ◆ Corporate market some saturation
- ◆ 20-30% of all PCs sold are replacing older PCs

Technology Trends

- ◆ Windows enables increased hardware design latitude
 - Virtual device drivers (hardware, BIOS)
 - Hardware abstraction layer of Windows NT™ (virtual interrupts, DMA, bus architectures, etc.)

Technology Trends

Next releases of Windows will continue this trend to meet our primary challenge: Making it easier

- ◆ Hardware innovation
- ◆ Differentiation
- ◆ Segmentation
- ◆ Value add

Consumer PCs

- ◆ Plug and Play
- ◆ CD-ROM
- ◆ Sound/entertainment
- ◆ Consumer applications

Business PCs

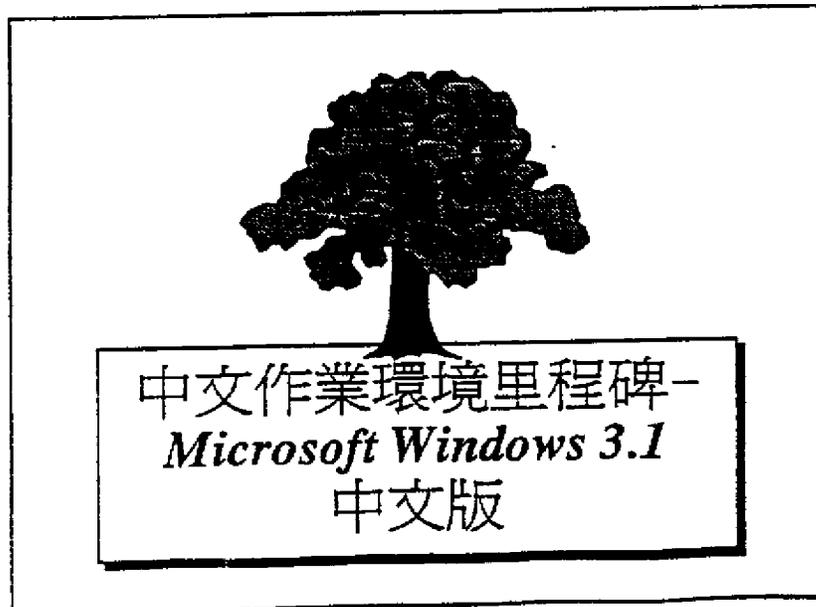
- ◆ High-end workstations
- ◆ Smart docking stations
- ◆ MP servers
- ◆ Office equipment integration

PC Industry Perspective

The more we both focus on the architecture of Windows, the more we win.



And why not tell the world
that we are focused?



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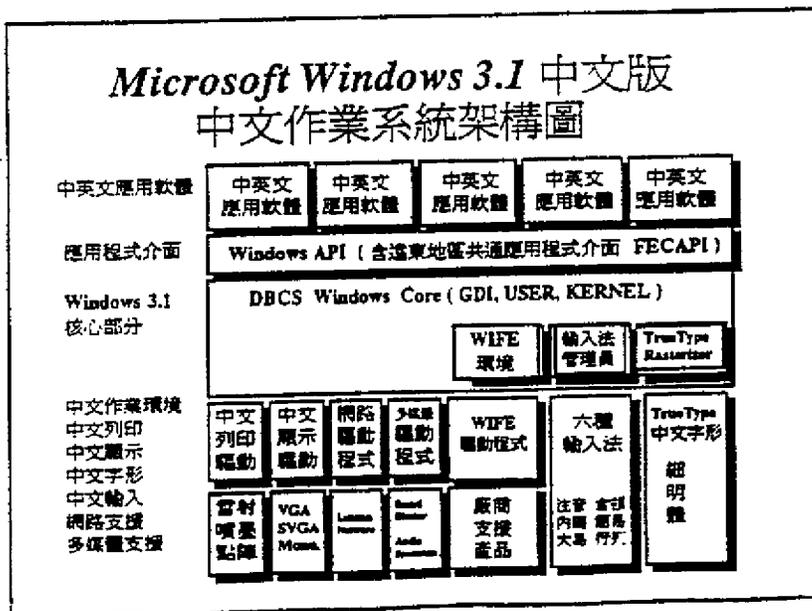
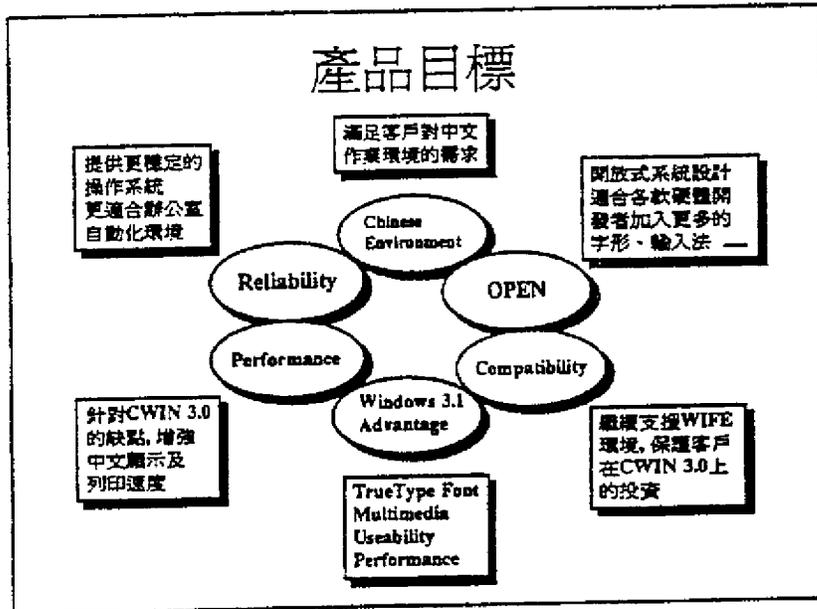
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Microsoft Windows 3.1 中文版

- ☞ 產品目標
- ☞ 產品特性
- ☞ 時程表

產品目標

- ☺ 開放的中文作業環境
- ☺ 增加中文顯示與列印速度
- ☺ 增強中文作業環境的支援
- ☺ 增強作業系統穩定性
- ☺ 承續 Windows 3.1 英文版的優點
- ☺ 維持 Windows 3.0 中文版相容性

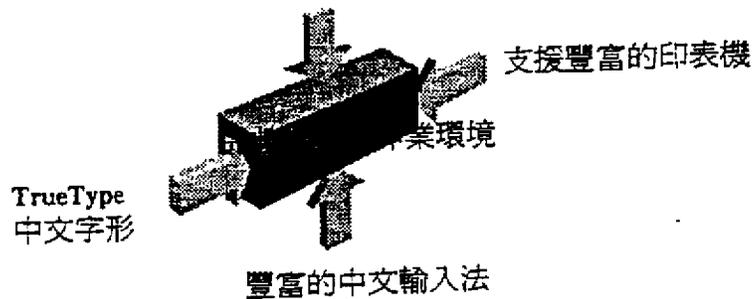


Microsoft Windows 3.1 中文版的開放性

- 開放的中文顯示介面
- 開放的中文列印介面
- 開放的中文字形環境
- 開放的中文輸入環境
- 開放的網路介面
- 開放的應用程式介面

完整的中文作業環境

支援最新的顯示卡



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支援最新的顯示卡

☐支援 Windows 3.1
英文版所支援的顯示驅動程式

☐VGA

☐SVGA

>新增驅動程式：ET 4000, Trident
8900C/8900CL, WD 90C31

☐Hercules

支援豐富的印表機

除了 Windows 3.1 英文版支援的印表機外

雷射印表機



HP: HP LaserJet 4L HP LaserJet IV
Canon: LBP III Plus LBP 8 Plus

噴墨式印表機



HP: HP DJ 500, HP DJ500C, HP DJ 550C
Canon: BJ 200

點矩陣印表機



EPSON: LQ-570C, LQ-550C, LQ-500C, LQ-2500C
LQ-1170C, LQ-1070C, LQ1040C, LQ1050C
LQ-1010C, LQ-1000C, LQ-1000C, EPL-7050C
NEC: P6200C, P6300 C, P9300C, CP6
CP7, P2200, P2 Plus, P5XL
P6, P7, P5200, P5300
P9XL, P3200, P3300, P6200
P6300, P9300
Panasonic: KX-P124C, KX-P1524C, KX-P1624C
KX-P1654C, KX-P2624C
Star: NX-2420CL, NX-2430, NX-2440, XB-2415, XB-2425
XB-2425HT, XT-15

豐富的中文輸入法

- 基本的四種輸入法：注音 倉頡 簡易 內碼
- 新增兩種輸入法：大易 行列
- 增加 **Soft Keyboard**，
可依需要變換注音，倉頡，簡易，內碼，大易
- 新增利用 **Soft Keyboard**輸入中文標點符號
- 開放式的中文輸入法管理架構，可隨時加入新的輸入法

TrueType 與 WIFE 中文字形

- 系統提供一套TrueType 細明體，共有13,092個可隨意放大縮小，並保持高品質的中文字形，另外有408個特殊符號供使用者選擇
- TrueType本身是開放的架構，客戶將可享受到更多來自於各個字形廠商優美的中文字集
- WIFE(Windows Intelligent Font Environment)
視窗開放字形環境下，客戶已經可以加掛自行購買的具備WIFE 驅動程式的中文字集，例如：華泰金蝶卡，文鼎字集，藏珠字集

TrueType 中文字形

- ⇒ 所視即所得 (WYSIWYG)
- ⇒ 開放架構 (Open Font File Specification)
- ⇒ Rasterizer in Windows GDI, Don't Need drivers anymore
- ⇒ Far East TrueType Extension

增加中文顯示與列印速度

- Windows 3.1 顯示驅動程式
- Smart Driver
- Write Cache
- TrueType Rasterizer
- DDI Support in GDI
- New Spooler in Windows 3.1
- Enhanced HIMEM
- DBCS enhancement for Font Cache

增強作業系統穩定性

- **Windows 3.1 Memory Management**
- **Longer and Bigger Beta Testing Program:**
 - 4 Months for Beta I, Beta II, and RC
 - 400 sites for Beta I
 - 500 sites for Beta II
- **Better Memory Leak than Windows 3.1 US version**

承續 Windows 3.1 英文版的優點

- **More Reliable**
- **Better Performance**
- **Support TrueType Font**
- **Built-in Multimedia support**
- **Better File Manager**
- **More User Friendly, e.g. Drag and Drop**

維持與 Windows 3.0
中文版的相容性

- WIFE Environment Support
- Support 秀宋體

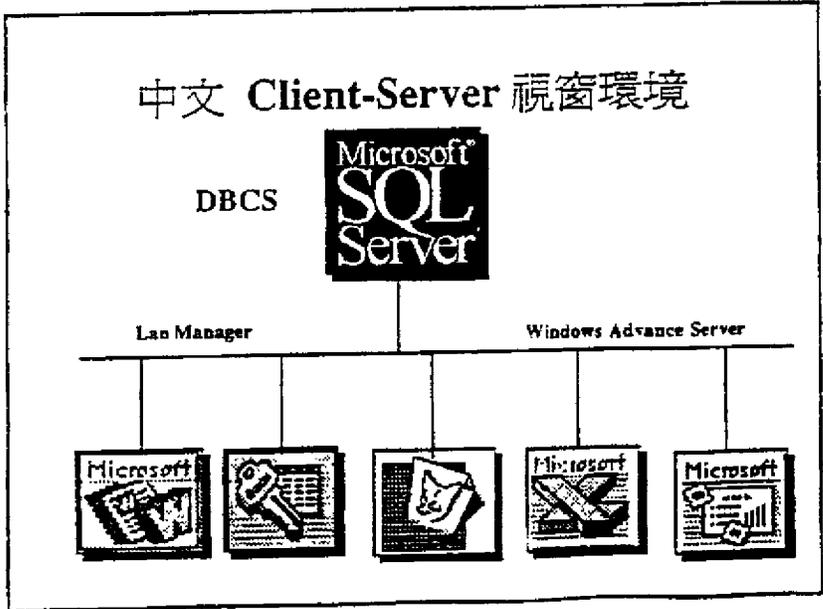
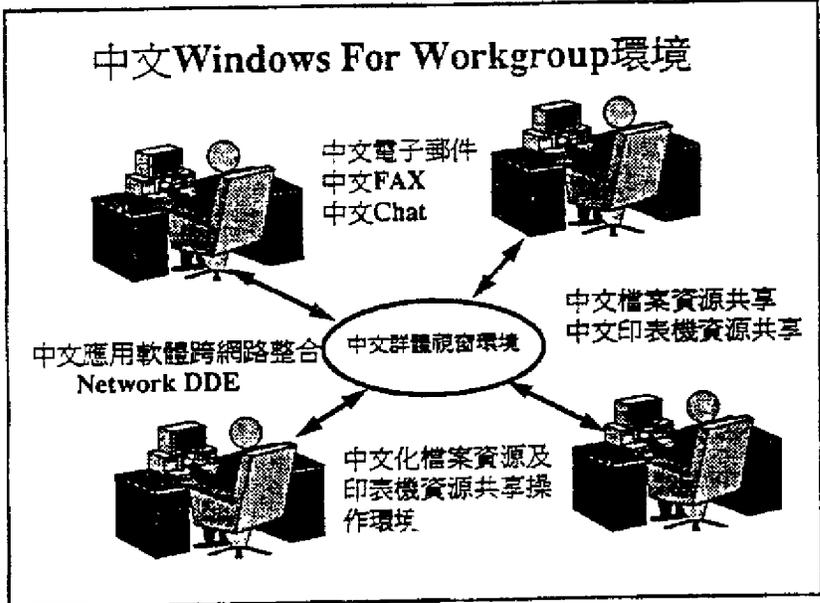
時程表

- RTM : 4/30
- Launch : 5/26
- OAK RTM : 5/15
- SDKE RTM : 5/15
- DDKE RTM : 5/15

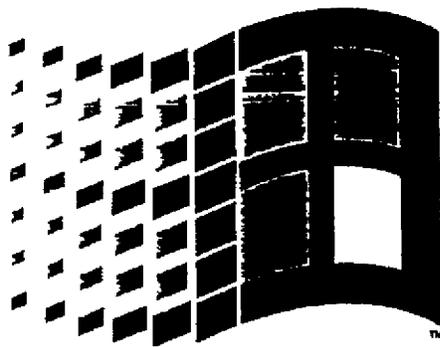
Demo

Microsoft 提供整體中文環境

- 本土化應用軟體，例如
視算表(Excel)，文書處理
(CWP)
- 中文 Group Computing
視窗環境
- 中文 Client-Server 視窗環境



Microsoft OEM Briefing Windows Into The Future



MICROSOFT[®]
WINDOWS[™]

Executive
Supplement

•1992•

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Microsoft Corporate Strategy

Steven A. Ballmer
Executive Vice President
Sales And Support
Microsoft Corporation,

Microsoft Corporate Strategy

Grow the market for
Windows™-based

Making It Easier

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Making It Easier To...

- ◆ Begin computing
- ◆ Use PCs
- ◆ Get help
- ◆ Work with other people
- ◆ Solve business problems
- ◆ Learn
- ◆ Take advantage of technology

Microsoft® Windows 3.1: A New User Every Five Seconds



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Our Partnership

Jointly acting to:

- ◆ Match Windows to the PC
- ◆ Optimize performance
- ◆ Make Windows-based computing easier
- ◆ Communicate to customers to grow the market and our respective shares



Components Of Perceived PC Value

1987	1992
1. Brand name	1. Performance
2. Compatibility	2. Features
3. Features	3. Price
4. Performance	4. Compatibility
5. Price	5. Brand name

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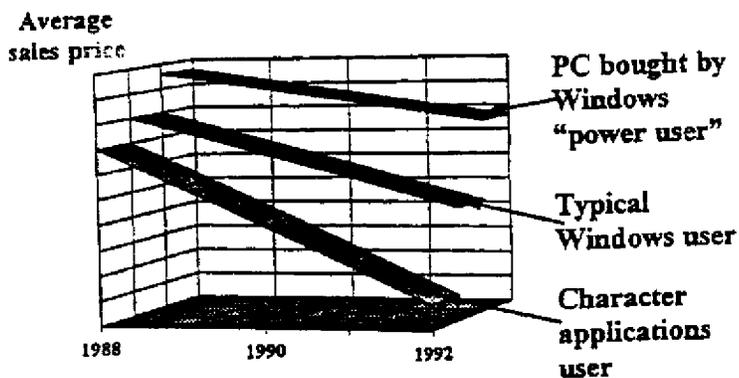
PC Hardware Costs Down And More Powerful Equipment

March 1991 *PC Week*
 386SX-20
 2 MB RAM
 60 MB hard disk
 \$4399

September 1992 *PC Week*
 486DX-33
 4 MB RAM
 120 MB hard disk
 \$2274

- ◆ Intel® P5
- ◆ MIPS RISC (R4000)
- ◆ DEC® Alpha

Average Purchase Price By User



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Windows: An Open Platform

- ◆ Hardware innovation
- ◆ Software innovation
- ◆ Network service innovation
- ◆ Open process for innovation



Making It Easier

To begin computing with Windows

- ◆ Evaluation
- ◆ Purchase
- ◆ The first 15 minutes

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Helping Users Get Started

- ◆ Windows logs for hardware and software
- ◆ Improved and customizable setup
- ◆ Windows Ready-to-Run program



Making It Easier

To use Windows-based PCs

- ◆ Usability Lab research
- ◆ Windows Style Guide
- ◆ OLE: object linking and embedding
- ◆ Great Microsoft applications
 - Wizards, Macro language, custom menus, toolbars...
- ◆ New technologies
 - New input devices, voice, audio, video
- ◆ *Information At Your Fingertips*

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Usability

- ◆ User interface consistency
- ◆ Optimizing common tasks
- ◆ High-quality learning tools
- ◆ Performance
- ◆ File compatibility with popular apps
- ◆ Transparent networking
- ◆ Minimal user-transition on upgrade

Making It Easier

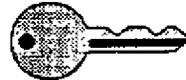
To get help...

- ◆ Microsoft Product Support Services
- ◆ Windows Resource Kits
- ◆ Windows Technical Workshops
- ◆ Electronic services
 - Online, CompuServe®, bulletin boards
- ◆ Microsoft Developer Network

Investment In Support

- ◆ One in five Microsoft employees involved in support
- ◆ 30,000 support responses/day
- ◆ Evaluating 24-hour support
- ◆ Education (MSU)
- ◆ Consulting (MCS)
- ◆ Helping customers support themselves

The Key To Offering Help



- ◆ Register the Windows user!
- ◆ Communicate with the Windows user
- ◆ Microsoft now offers registered user services to customers of OEMs
 - > Tips, techniques, information
 - > Upgrade, new product, add-on notification

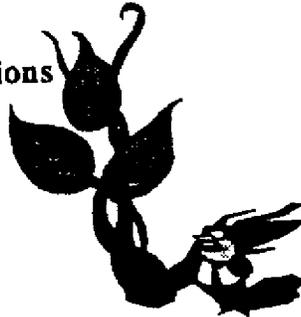
Making It Easier

To work with other people...

- ◆ Review, delegate, consolidate, route work, search...
- ◆ Communicate
- ◆ Schedule meetings and events

Raising Group Productivity

- ◆ Integrated networking
- ◆ Powerful system groupware facilities
- ◆ Workgroup applications: conferencing, workflow, distribution
- ◆ Multiplatform applications

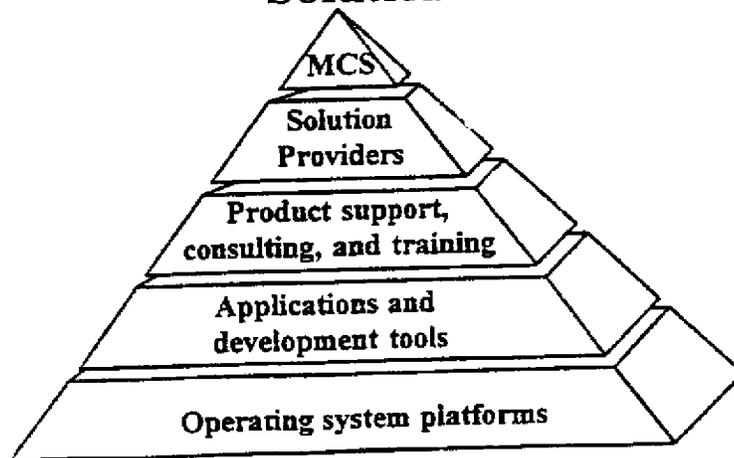


Making It Easier

To solve business problems...

- ◆ Demanding powerful and secure systems
- ◆ Requiring rich development and database tools
- ◆ Calling for intuitive productivity applications
- ◆ Involving changes in methods and processes

Building Windows-Based Solutions



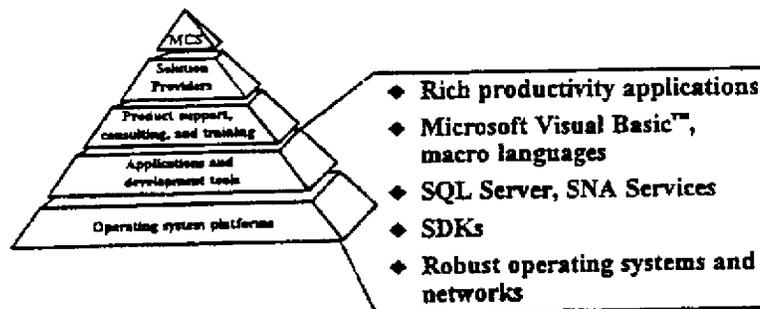
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Building Windows-Based Solutions



Making It Easier

To learn...

- ◆ Making the PC a great tool for interactive, multifaceted learning
 - Simpler, faster access to information
 - More intuitive, fun ways of learning
 - More engaging, vivid communication

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Learning With Windows

- ◆ Content-based applications
- ◆ Multimedia tutorials
- ◆ Published information
- ◆ Taking advantage of graphics, audio, video, CD-ROM



Making It Easier

To take advantage of technology...

- ◆ New hardware
 - Smaller form factors
 - New input methods
 - Video technology
 - New devices
- ◆ Software
 - Distributed systems and applications
 - New problem-solving tools
 - Objects

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Microsoft Strategy

Customer requirements

- ◆ Leverage investments
- ◆ Competitive advantage
- ◆ Integrated solutions
- ◆ Reduced administration costs
- ◆ Clear migration pathway to the future
- ◆ Take advantage of new technology

Technology requirements

- ◆ Scalability
- ◆ Networking/integration with existing environment
- ◆ Innovative applications
- ◆ Extensible to new technologies
- ◆ Audio, full motion video

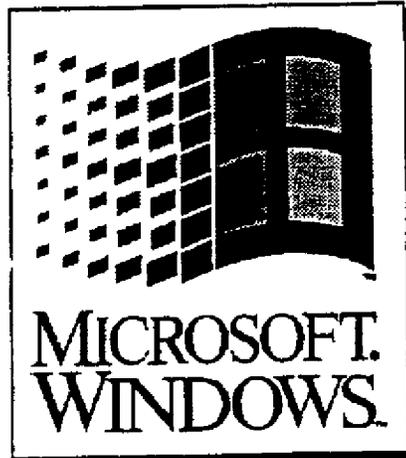


Helping Make It Easier...

- ◆ For users to get started
 - > Pre-install Windows and drivers
 - > Communicate with Windows logo
- ◆ To use Windows PCs
 - > Incorporate audio, CD-ROM, video
 - > Optimize Windows and your PCs
- ◆ To get help
 - > Offer Windows user registration

Helping Make It Easier...

- ◆ To work with other people
 - Integrate networking
- ◆ To solve business problems
 - Support Microsoft foundation and tools
 - Leverage *Windows* Open Services Architecture
- ◆ To learn
 - Offer targeted systems
- ◆ To take advantage of technology
 - Pursue opportunities enabled by Windows



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