Memphis Plans

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Objectives for Memphis Release

- Advance Ease of Use and SIPC framework
- Support 1997 Hardware advances
  - OnNow, ACPI, USB, AGP, DVD, Updated drivers
- Provide retail WDM delivery vehicle
  - initial device classes: input, image, stream, audio, comm
- Provide ship vehicle for strategic internet components

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Objectives for Memphis Release

- Synchronize OEM & Retail products
  - corporate customers are frustrated by lack of standard Windows 95 base w/ new feature set
  - pushes OEMs to ship latest release
  - synched w/ OEM ship cycles
- Implement Win95 quality improvements
- Provide compelling end user upgrade
- Modest increase in Win95 OEM royalty
  - new retail identity, increased value

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Memphis Focus Group Results

- 12 groups, 3 cities, Win95 home & SOHO customers
- Generally satisfied with Win95, upgrade not as easy as would have liked
- Top stack-ranked features:
  - Code download manager
  - Hard disk space manager/cleanup
  - Quality improvements
  - Updated drivers & system components
  - Convenient, low-risk way to get current Internet
  - Did not want applets
- Would people buy it?
  - If Memphis = Quality improvements + OSR features + Internet + 1 or 2 additional features + LOW RISK
  - Nearly every participant would buy

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Memphis Assumptions/Risks

- Only upgrades Win95 gold & OSRs (not Win 3.x)
  - Simplifies setup, testing & beta
  - Only way to make retail release in June '97
  - Dramatically increases success rate and customer satisfaction
  - Most Win 3.1 machines will be >2 year old
  - Does not address 42 million Win95-capable Win3.1 systems
  - Issue: Tool for corporate customers to enable Win 3.1 upgrade?
- Must ship to OEMs in June timeframe
  - OEM customers & Intel have dependencies for Xmas 97
- NT5 ships after Memphis

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Memphis Product Overview

- Win32 Driver Model Core & Classes
- Digital Audio
- OnNow & ACPI
- DVD
- Latest Internet
- Performance
- New Utilities
- Windows 95 Quality & Supportability
- New/updated device drivers
- All the OSR2 features
  - e.g. FAT32, PC Card 32, etc.

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Win32 Driver Model (WDM)

- Core architecture evolution
- Binary-compatible drivers across Windows and Windows NT on x86
- Based on Windows NT I/O subsystem
- Driver structure simplifies development
  - Class/minidriver model
  - Reusable driver modules
  - Higher quality drivers
- Extensible to support new buses and device classes, e.g., USB, IEEE 1394

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WDM Components in Memphis

- WDM Core
  - NT kernel services, power management, WDM PnP, preemptable kernel mode threads
- USB Bus & Core
  - USB bus class, UHCI & OHCI host controller, hub driver, support for USB boot devices, composite devices support
- Human Input Device Class
  - HID class plus legacy support for joystick, mouse, keyboard, HID USB driver, HID parser, new accessibility devices
- Stream Class & Kernel Streaming (motion camera, MPEG)
- Still Image Class (Still camera & scanner)
- USB Communications Class
- WDM Audio

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OnNow

- Comprehensive architecture for power management
  - Addresses system hardware, add-in devices, drivers, operating system & applications
  - Move from proprietary implementations to open architecture
  - One solution for Memphis & NT5
- Applications become smarter about power management
- Power management policy in operating system
- OnNow built in to WDM; legacy compatibility
- ACPI for new hardware

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OnNow Components in Memphis

- Kernel CPU power management
- System policy
- Bus driver PM support for most buses
- Device class PM support for most device classes
- ACPI core driver
- ACPI p-code interpreter
- VxD interface
- SMB protocol & battery drivers
- Power policy UI

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System Utilities

- Code download manager
  - Objective: Update system software by analyzing user system, querying Internet database, installing new drivers & system components
  - Design:
    - HTML-based pages, OCX to inventory, query
    - MS database
    - IE connection/download
    - Signed code
- Disk space manager
  - Utility to help manage and free up space on hard disk by identifying files that can be deleted/backedup, caches to be flushed, etc.

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Memphis Components

- Performance
  - Gang page loading (Office), discard cache blocks, CPU cache-aligned move, scatter gather read-ahead, unlock TCP/IP, swap tuning
  - Expect significant Win32 app load time improvements
  - Overall Winstone improvements dependent on IE4 impact
- Win95 Quality & Supportability
  - Registry bug fixes, Registry backup, rollback
  - Online bug reports & fault data collection
  - System file audit & rollback
  - Dr. Watson

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Code Sharing: Deliverables to NT

- USB Bus class, hub, USB core
- NTPNP.DLL
- HID class driver
- Stream class driver & motion video class driver
- Still Image class driver
- WDM digital audio subsystem
- USB Communications class driver
- Code download manager harness
- ACPI P-code interpreter
- FAT32 -> NTFS Converter

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Code Sharing: Deliverables from NT Dev

- WDM CSA - kernel data streaming
- WDM DDK
- HID parser
- USB OHCI minidriver
- API for scanner & still camera
- SMB protocol & battery drivers
- Power configuration and policy applet for OnNow
- UI enhancements: drag/drop menus, etc.
- TCP/IP updates, DHCP enhancements
- Winsock 2.0
- OLE: DCOM/RPC
- FE Postscript
- Accessibility
- Unimodem Update

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Deliverables from IPTD

- IE4/Shell
  - Incl. Athena, NetMeeting, etc.
- DirectX 5
  - DirectDraw support for AGP
- ActiveMovie Filters for DVD
- DVD Player Applet
- OnNow power policy in display drivers and legacy audio drivers

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Timeline for June

Sep 25 '96	Detroit Final Beta (incl. WDM & USB)
Oct 29 '96	Detroit RTM
Dec 1 '96	Memphis Beta 1
Dec 31 '96	Memphis Code Complete
Feb 1 '97	Memphis Beta 2
April 1 '97	Memphis Beta 3
May 1 '97	Memphis RC1
June '97	Memphis RTM

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Risks/Issues:

- Code complete 12/31
- Beta cycle is tight
- ACPI hardware availability
- IE4 schedule
- DirectX 5 schedule
- Feature creep, requests to ship additional unplanned components, requests for additional unplanned "releases" (eg. Service packs, WDM for Win95 gold, HID class, etc.)
- Prioritizing home/consumer over corporate customer

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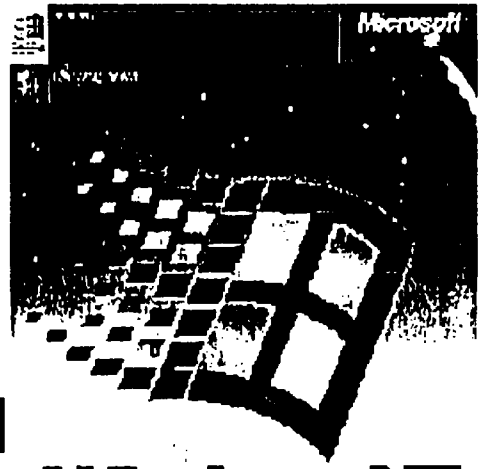
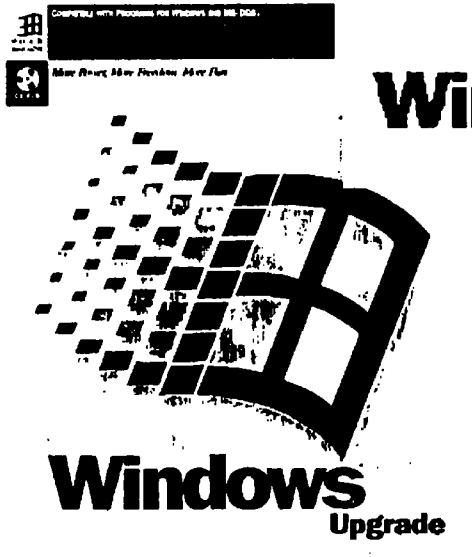
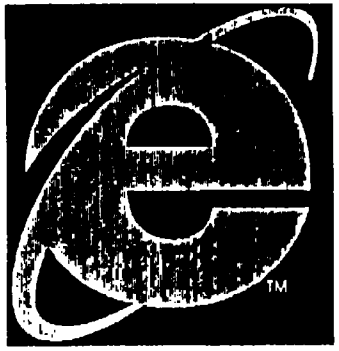
Microsoft Desktop Operating System & Internet Strategy







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