

Microsoft Strategy
IEEE 1394
December, 1996

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Microsoft Corporation

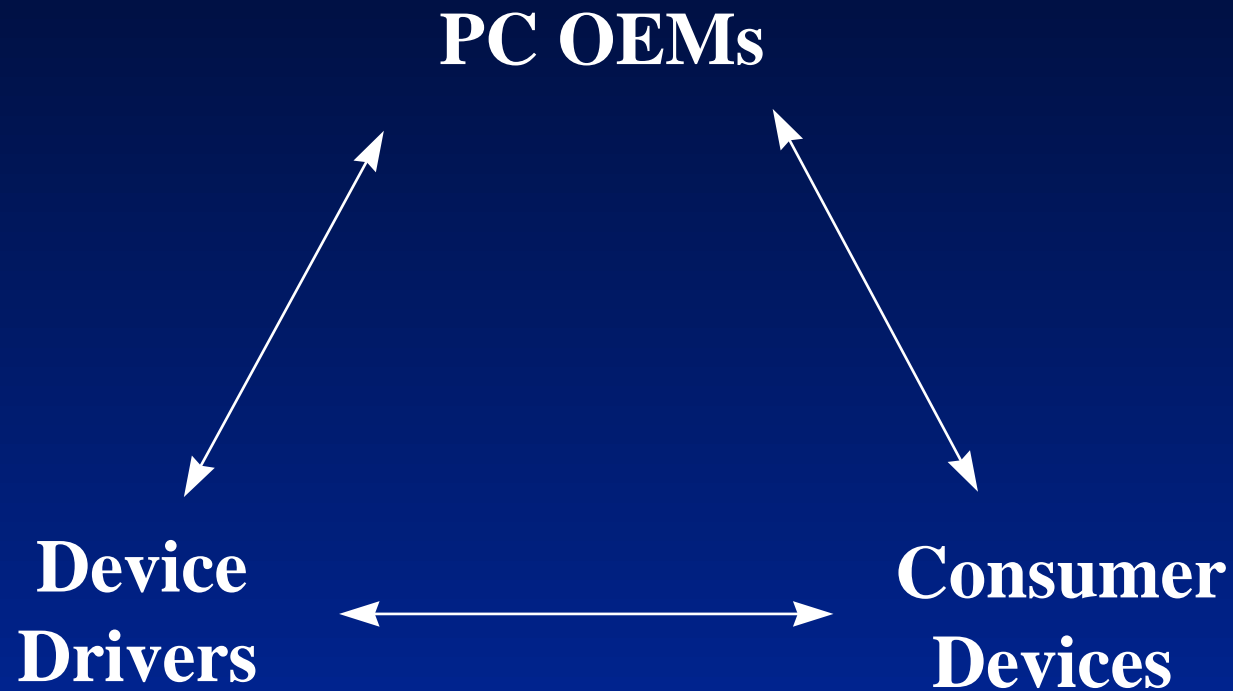


Agenda

- ◆ **PC Market Challenge for 1997**
- ◆ **1394 - PC Integration**
- ◆ **1997 Device Opportunities**

1997 Challenge

1394 PC Market



Role of PC

1394 consumer applications

- ◆ **Bus Management**
- ◆ **Auto setup and control for systems of devices**
- ◆ **Applications**
 - **DV editing**
 - **Video and Data conferencing**
 - **Information consumption**

Entertainment PC 97

- ◆ **New PC category & value proposition**
 - *Goal:* Establish feature & performance baseline for software developers
 - *Goal:* Help end-users identify which PCs support the ultimate PC-based entertainment
- ◆ **“Easily accessible” 1394 port required**
 - **Key applications:** DV cameras, digital audio/speakers

Household Penetration

Consumer Electronics Products

EIA Market Research: Jan 1995

TV	98%
VCR Decks	85%
Component Systems	53%
Color TV/Stereo	48%
Home CD Players	44%
Computer Printers	30%
Camcorder	20%
Home Security	17%
Laserdisc Players	2%

Market Opportunity

PCs and Consumer Electronics

- ◆ **Household penetration**
- ◆ **Modular (Sealed Case) PC systems**
- ◆ **New applications spanning systems of devices**
 - **Setup and control**
 - **Interaction**
 - **Information consumption**

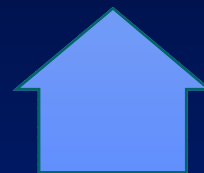
How critical is the PC to your application?

SIPC Framework

Home
entertainment

SOHO
productivity

Corporate



Win32 API, ActiveX, DirectX

OnNow

Device
Bay

Media
drivers

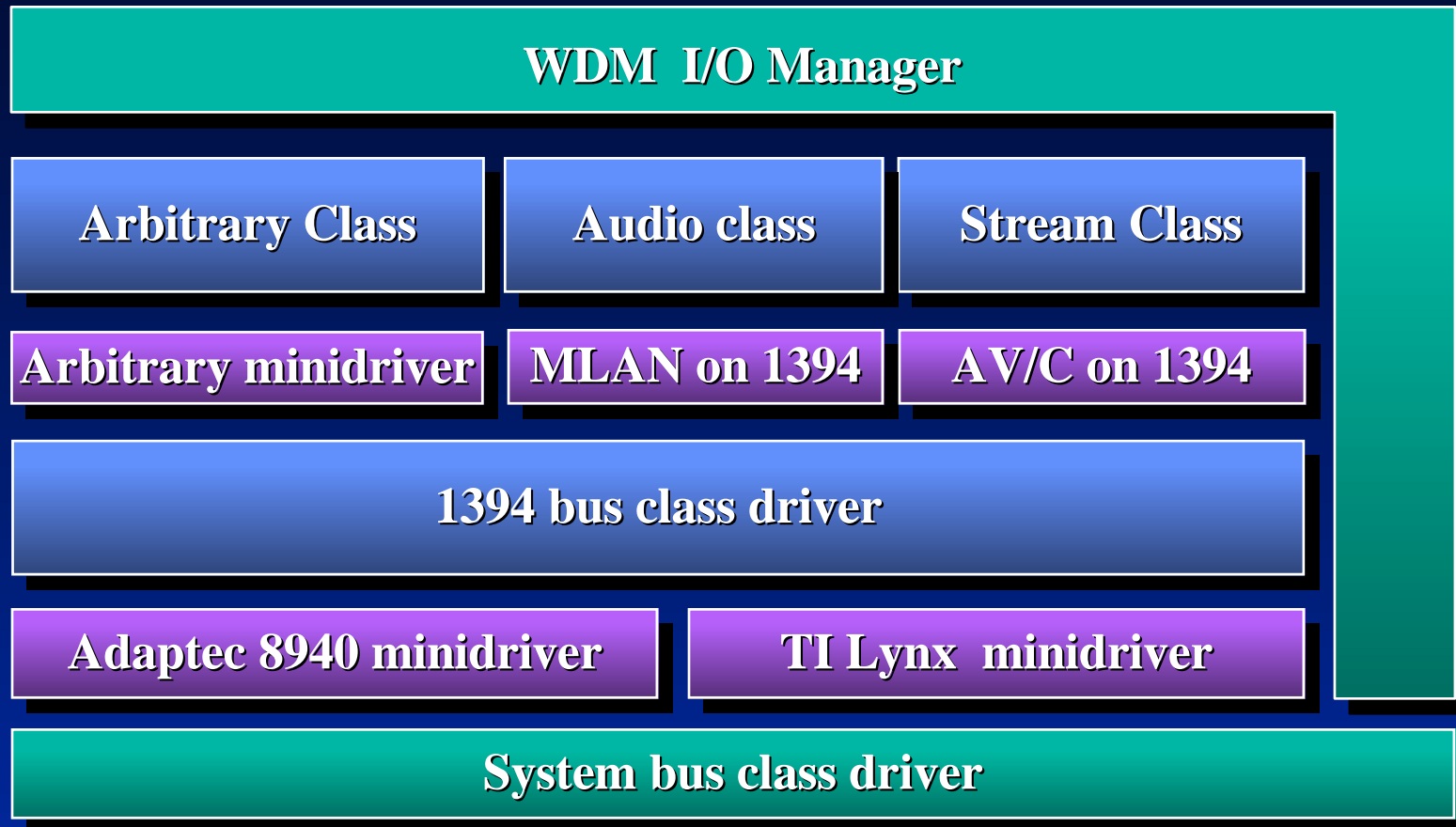
USB

1394

Win32 Driver Model (WDM)

1394 SW Architecture

WDM Device Drivers



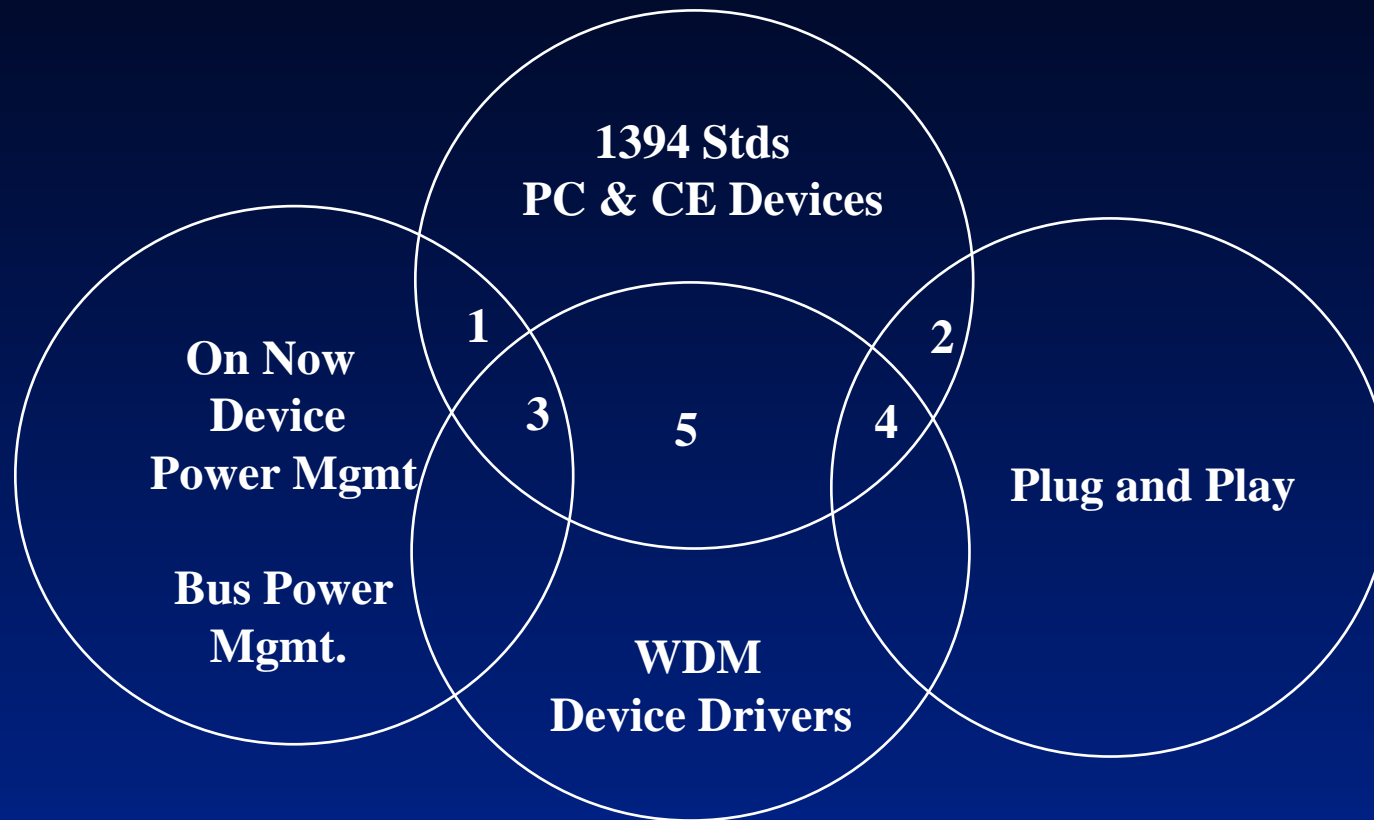
1394 - PC Integration

WDM - 1394 Interfaces

- ◆ Standard 1394 host connection hardware and software
 - Open Host Controller Interface (OHCI) and WDM Driver
 - PC Motherboard Integration
 - P1394.2 Versus 1394 / P1394a
- ◆ Isochronous streaming
- ◆ DV Codec
- ◆ Storage command protocol
 - DVD, Disk

Integrating PC and Consumer

WDM - 1394 Interfaces



1. Device and Bus Power Control Interfaces = 1394 Power Specs.
2. Device Detection, Dynamic config. , Ease of use = 1394 PnP Spec.
3. Device Power Class interface standards: PWR on/down controls, capabilities
4. Bus Class interface standards: Soft pwr switch, device removal
5. DeviceClass interface standards: AVC, DT Cam, MLAN, SBP-2

Expansion Interfaces

Sealed Case PC

<u>Traditional</u>	→	<u>1394 SIPC Components</u>
Storage		Device Bay
Monitor		PC/TV
Net card		External Adapter
Sound card		Component Audio
CD-ROM/VCR		DVD
Video Capture		SW Codec or Ext. Adapter

External Adapters

Expansion Interfaces



- ◆ **External 1394 Adapters are Plug and Play!**
- ◆ **Low cost**
 - Use cable power
- ◆ **Support legacy interfaces (e.g. Analog A/V)**
 - Migration for installed base equipment
- ◆ **Support future expansion interfaces**

Microsoft WDM/1394

Timeline

- ◆ **Driver Development Kit - Dec. 96**

- 1394 Bus Interface drivers

- Dev. and Test Environment

- ◆ **Compliance Tests**

- ◆ **WDM device Class drivers**

- Device minidrivers: DT Camera, AV/C, ...

- ◆ **OHCI minidriver**

- ◆ **1394 compatibility workshop**

What PC software support is important for your products in 1997?

1394 Device Opportunities

PC Applications

- ◆ **What device or devices will drive early 1394 PC Market Demand???**
 - **User's require on all PCs**
 - **Easy to use**
 - **Consumer price points: \$200-600?**
 - **Extensible with new 1394 components**
 - **Business and Home use**

What is this device???

1394 PC Applications

- ◆ **DV / Image Editing:**
 - **PC/Camcorder /DVCR, Scanner/Printer, Storage**
 - **Edit existing VHS tapes**
 - **Audio dubbing**
- ◆ **Auto compile custom viewing guide: DSS**
- ◆ **Record/Playback movies: DSS/DVHS**
- ◆ **AV Home theatre setup and control**
- ◆ **Archive MM files off the internet: DVHS**

Integrating Consumer Electronics

Standard 1394 Device Interfaces

- ◆ **Standard device command protocols**
 - **AVC, Conferencing Camera 1.04, other...**
- ◆ **Plug and Play Design Reference**
 - **Consistent with IEEE 1394 standard**
- ◆ **Device Power Management - Draft .7**
 - **Ease of use for systems of devices**
- ◆ **Bus Power Management - Draft .9**
 - **Optional**

1394 References

- ◆ **Microsoft Web site:**
 - <http://www.microsoft.com/hwdev>
- ◆ **1394 TA Web site:**
 - <http://www.1394ta.org>
- ◆ **IEEE 1394 Internet reflector: 1394-sig@apple.com**
- ◆ **Send dev./business questions to: 1394@microsoft.com**

Request Memphis DDK

1394 WDM Beta Drivers

E-mail to: 1394@microsoft.com

beta ID (if known):

Name:

Company:

Address 1 (No. P. O. Box):

Phone Number:

Fax Number:

Internet ID:

Microsoft[®]

