Microsoft **WinHEC** 2008
Advancing the Platform

Microsoft

Windows Logo Program for Network Media Devices

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Goals

- Understand Windows 7 media sharing technologies and features
- Clarify value in Windows 7 Logo program for Network Media Devices (NMD)
- Expedite development of devices that meet Windows 7 logo requirements

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Agenda

- Windows 7 media sharing features
- Windows 7 feature demonstration
- Windows 7 logo requirements for network media devices
- Featured Partners

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Windows 7 Uniquely Suited For Home Entertainment

content

Pictures
Music
Videos
Recorded TV

devices

Extenders for Media Center
Windows Home Server
Xbox 360
DLNA Media Servers,
Renderers, and
Controllers

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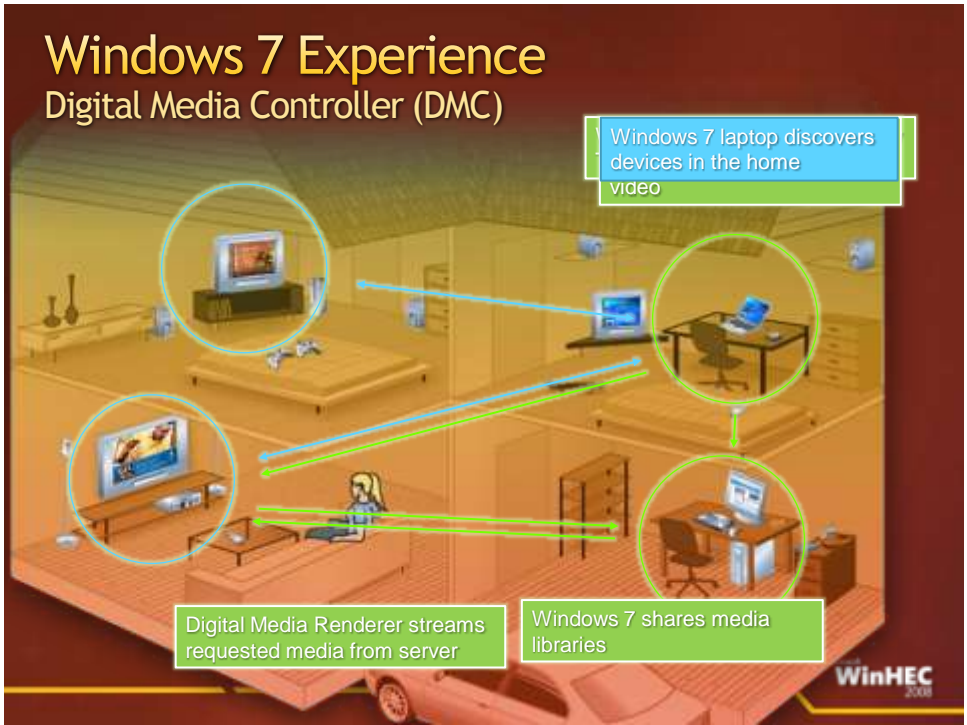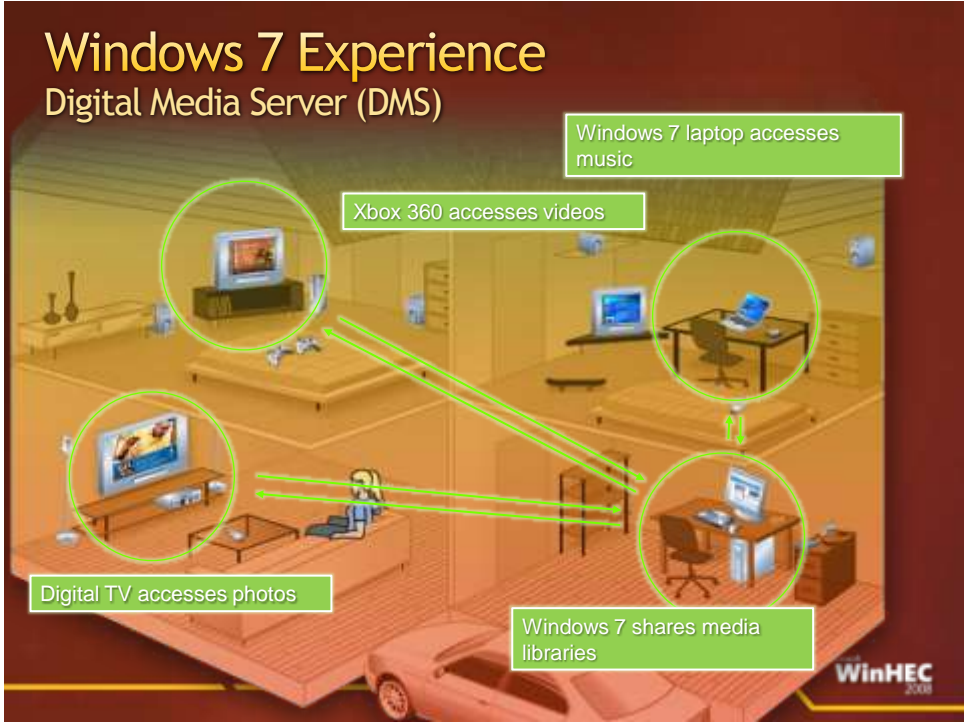

Media Sharing In Windows 7
Guiding Principles

Just Works	Simple, intuitive, and easy to use
Enabling the Best Devices	Platform for Network Media Devices
My Media Anywhere	Access to your media on any device in the home
High Fidelity	Embrace media standards and implement with the highest quality

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Windows 7 Experience
Digital Media Server (DMS)

Windows 7 laptop accesses music

Xbox 360 accesses videos

Digital TV accesses photos

Windows 7 shares media libraries

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Windows 7 Experience
Digital Media Controller (DMC)

Windows 7 laptop discovers devices in the home video

Digital Media Renderer streams requested media from server

Windows 7 shares media libraries

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Windows 7 Experience
Digital Media Renderer (DMR)

- Cell Phone discovers devices in the home
- User browses server using cell phone
- Digital Media Renderer streams requested media from server
- Windows 7 shares media libraries

Windows 7 Experience
Transcoding

- Windows exposes native file format and transcoded formats
- From home theater, user chooses a video to play from
- Home theater chooses MPEG-2 RES element

<res MP4>
<res
<res
Windows transcodes from MP4 to MPEG-2

WMV
MP4
WMA
M4A

MPEG2
MP3
LPCM

demo

Windows 7
Sharing Features

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Digital Living
Network Alliance
Featured Speakers

Scott Smyers
Chair, DLNA
Sony Electronics, Inc.

Pat Griffis
Co-Chair, DLNA
Microsoft Corporation

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Introduction To DLNA

- Industry consortium
  - 250+ companies
  - Consumer Electronics
  - Computing Industry
  - Mobile Devices
  - Content distributors

- Goal: Establish an ecosystem of compatible products for networked media devices

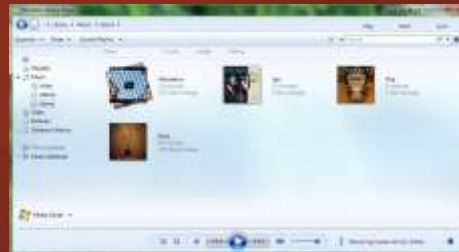- Develops standards-based specifications: "DLNA Guidelines"

Windows 7 Sharing Features
Digital Media Server

- Windows 7 adds DLNA 1.5 DMS support
- Device may access shared media libraries
  - Music, Pictures, Videos, and Recorded TV*

* Only unprotected content

Windows 7 Sharing Features
Digital Media Server

- Device experience enhancements:
  - Album art
  - Video and image thumbnails
  - Rich metadata
  - Search and Browse
  - Metadata update (ratings)
  - Transcode (format/bitrate), and multiple RES elements

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Windows 7 Sharing Features
Digital Media Player & Renderer

- Support for DLNA DMP and DMR
- Windows Media Player features
  - Browsing libraries on by default
  - Server is primary node in player library
  - Library queries exposed as pivots
  - Album art
  - Video and image thumbnails

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Windows 7 Sharing Features
Digital Media Player & Renderer

- Windows Media Player features
  - Enhanced metadata
  - Search and browse
  - Enables device control of Windows Media Player
  - Improved codec support
- Windows Media Center features
  - Automatic discovery of DLNA DMS from PC and Extenders
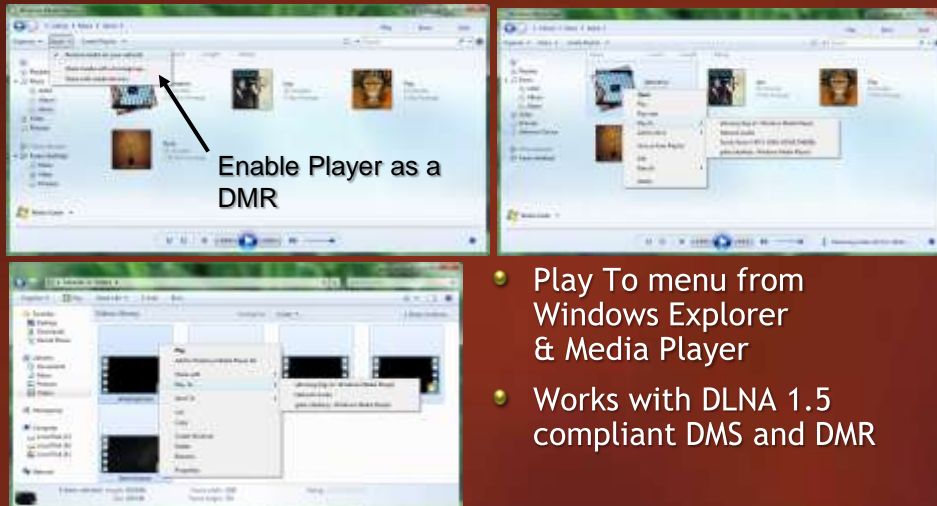
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Windows 7 Sharing Features
Digital Media Player & Renderer

Browsing a DMS

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Windows 7 Sharing Features
Digital Media Player & Renderer

Enable Player as a DMR

- Play To menu from Windows Explorer & Media Player
- Works with DLNA 1.5 compliant DMS and DMR

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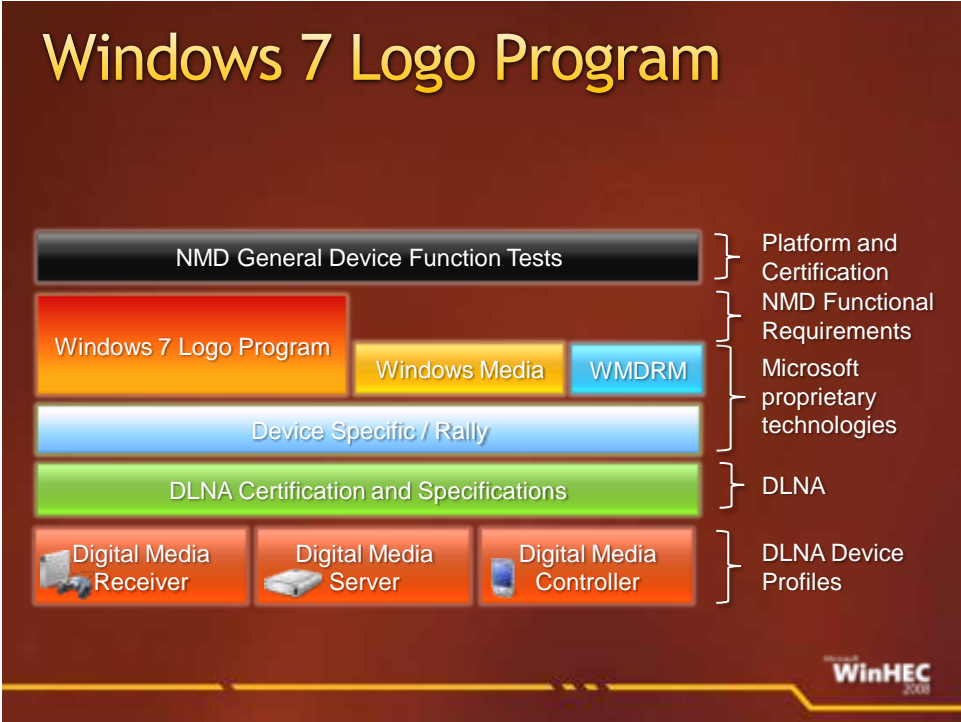
Windows 7 Sharing Features
Digital Media Controllers

- Windows 7 includes a DLNA compliant Digital Media Controller
- Windows Play To experience
  - Automatic device authorization through Play To context menu
  - Play To enabled for all media types:
    - Music, Pictures, Videos, Recorded TV*

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* Only unprotected content

Windows 7 Logo Program

NMD General Device Function Tests	Platform and Certification
	NMD Functional Requirements
Windows 7 Logo Program / Windows Media / WMDRM	Microsoft proprietary technologies
Device Specific / Rally	
DLNA Certification and Specifications	DLNA
Digital Media Receiver / Digital Media Server / Digital Media Controller	DLNA Device Profiles

Windows 7 Logo Program
2009 Network Media Devices

DMR

LLTD
Wi-Fi supports 802.11a&g with N
DLNA 1.5 compliant
MSFT extensions
Wi-Fi supports WCN 2.0

DMS

LLTD
Wi-Fi supports 802.11a&g with N
DLNA 1.5 compliant
MSFT extensions
Wi-Fi supports WCN 2.0

DMC

DLNA 1.5 compliant
MSFT extensions
Wi-Fi supports WCN 2.0

2009 Logo Requirement
Common to all devices

- All devices must be DLNA 1.5 certified
- Guarantees a baseline experience

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2009 Logo Requirement
Common to all devices

- Wake On LAN (WoL) support
  - Devices must support WoL either by sending or responding to Magic Packets as appropriate
  - DMC must wake sleeping devices
  - DMS should wake within 20 seconds

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2009 Logo Requirement
Common to all devices

- DMS must declare support for resume from low power
  - DDD of DMS that supports low power mode

```
<microsoft:X_magicPacketWakeSupported xmlns:microsoft="urn:schemas-microsoft-com:WMPNSS-1-0">
   1
</ microsoft:X_magicPacketWakeSupported>
```

  - DDD of DMS with no low power mode

```
<microsoft:X_magicPacketWakeSupported xmlns:microsoft="urn:schemas-microsoft-com:WMPNSS-1-0">
   0
</ microsoft:X_magicPacketWakeSupported>
```

2009 Logo Requirement
Common to all devices

- Device needs to declare support for waking a sleeping DMS via Magic Packet
- Applies to DMC and DMR with MSCP

```
<microsoft:X_magicPacketSendSupported xmlns:microsoft="urn:schemas-microsoft-com:WMPNSS-1-0">
   1
</ microsoft:X_magicPacketSendSupported>
```

2009 Logo Requirement
Common requirements to all DMS & DMR

- All devices must support Rally Technologies
  - Wi-Fi Protected Setup (WCN 2.0)
  - Link Layer Topology Discovery (LLTD)

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2009 Logo Requirement
Common requirements to all DMS & DMR

- UPnP device description document (DDD) must contain metadata that Windows uses for discovery and configuration

```
<device>
  <pnpx:X_compatibleId
  xmlns:pnpx="http://schemas.microsoft.com/windows/pnpx/2005/11">
    MS_DigitalMediaDeviceClass_V001
  </pnpx:X_compatibleId>
  <pnpx:X_deviceCategory
  xmlns:pnpx="http://schemas.microsoft.com/windows/pnpx/2005/11">
    MediaDevice.DMR
  </pnpx:X_deviceCategory>
</device>
```

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2009 Logo Requirement
Device installation experience

2009 Logo Requirement
Common requirements to all DMS & DMR

- All devices must allow the user to rename the device to a friendly name

- One common location to rename your device through windows

2009 Logo Requirement
Common requirements to all DMS & DMR

- All devices must support common metadata

Music metadata

2009 Logo Requirement
Common requirements to all DMS & DMR

- All devices must support basic transport support
- DLNA requires play and stop
- Windows Logo additionally requires pause and seek

2009 Logo Requirement
DMR only

- All DMRs must support volume control

2009 Logo Requirement
DMR only

- DMRs must use best supported RES element
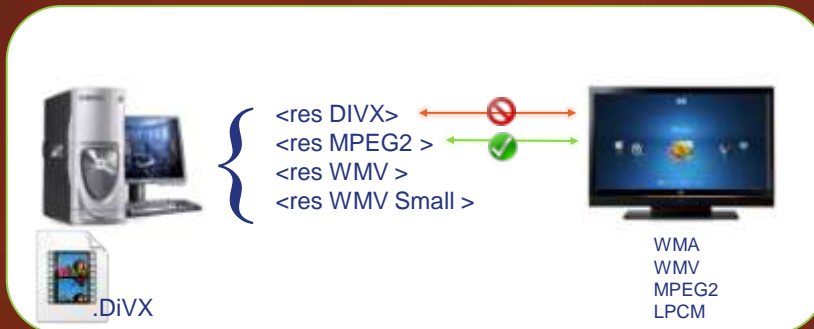
2009 Logo Requirement
DMR only

- DMRs should support WMDRM-ND

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2009 Logo Requirement
DMR only

- DMR must support metadata Update Object

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2009 Logo Requirement
DMS only

- DMS must not display album art as photos
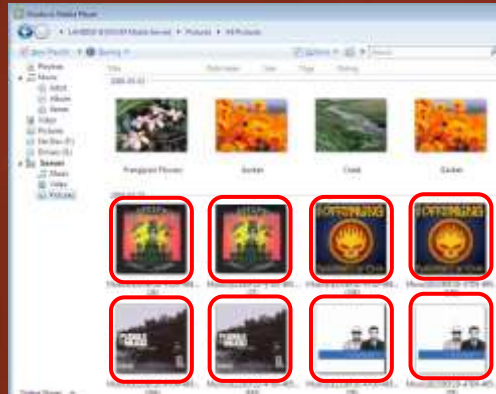
2009 Logo Requirement
DMS only

- DMS must provide album art when available

2009 Logo Requirement
DMS only

- DMR must provide video thumbnails when available
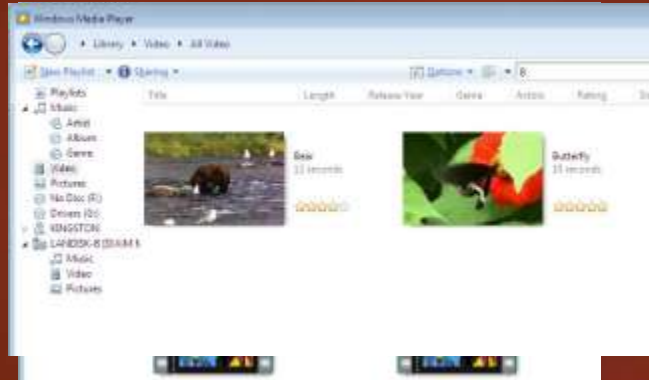
2009 Logo Requirement Overview

- Key Windows 7 Logo Program benefits
  - Windows transcode support saves you money
  - Moving towards "green" devices with WoL
  - Plenty of room for differentiation!
  - Decreased customer support
  - Best user experience

Our Commitment To You

- Windows 7 will seamlessly work with your DLNA compliant devices
- Windows 7 will make configuring your device straight forward and simple
- Windows 7 will make sharing content in the home painless
- Windows 7 will save you money by providing transcoding to standards

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Call To Action

- Create DLNA 1.5 compliant devices
- Investigate differentiating options
- If you are developing a DMP, make sure it is a certified DMR as well
- Deliver Windows 7 logo'd devices in 2009

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I-O DATA
DigiOn
Featured Partners

Yoshi Hirano   Hiro Someya
General Manager   Director of Marketing
I-O Data Device, Inc.   DigiOn, Inc.

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Product Line And Using Tools
Demonstrating devices

- DMR: AV-LS500W VPR Set Top Box
- DMS: LANDISK Home (HDL-4)
- Firmware: DigiOn DiXiM SDK new version

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DigiOn's DiXiM SDK New Package
Supporting Windows 7 Logo Requirement

- Quality Proven Home Network SDK
- Newly Featured Windows 7 Logo Req'ts
- Available on Nov. 28th, 2008
- DMR/DMS Testing Device – Option Available
- Additional information : www.digion.com

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Additional Resources

Web Resources:
- Windows Hardware Developer Central
  - http://www.microsoft.com/whdc
- Whitepapers:
  - Design Guidelines and Considerations for Building Windows Certified Network Media Devices: http://go.microsoft.com/fwlink/?LinkId=131088
  - Connected Digital Picture Frames: Analysis and Specifications http://go.microsoft.com/fwlink/?LinkId=131089
- Other Resources:
  - "Building a Network Device Compatible with Microsoft Windows Media Player 11": http://go.microsoft.com/fwlink/?LinkId=87957
  - UPnP MediaServer Media Controller and MediaRenderer-related specifications: http://www.upnp.org/standardizeddcps/mediaserver.asp
  - Windows Logo Requirements: http://www.microsoft.com/whdc/winlogo/default.mspx
  - DLNA Information: http://www.dlna.org

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Additional Resources

- Related Technical Sessions
  - *Building Digital Picture Frames using Microsoft Technologies*
  - *Unifying the Wireless and Network Device Installation Experience in Windows 7*
- Related Chalk Talks on Friday
  - *Chalk Talk: Windows Connect Now for Wireless Devices*
  - *Windows 7 Logo Program and Design Considerations for Network Infrastructure Devices*
- Contact Info: NMDInfo@Microsoft.com

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