MusicPhotoVideo

Introduction

April 2005
About OSTA

- Incorporated in 1992 to promote the use of recordable optical technologies and products
  - Over 50 members including some of today’s largest PC, CE, software and media manufacturers

- OSTA past contributions to optical technology
  - Universal Disk Format (UDF)
    - Adopted as the file system for DVD, CD-R/RW
  - Uniform Packet Writing
    - Common form of packet writing for CD-R made compatible multi-session recording possible
  - Multiread
    - Assures readability of CD-R and CD-RW discs on CD-ROM, CD-RW and DVD drives
    - Universally implemented by drive manufacturers

- OSTA is open -- all companies active in the optical recording industry are invited to join
Digital Content Explosion: Digital photography takes off

- Digital camera sales exceed 35mm camera sales in 2003

- Archiving precious memories is a top consumer concern
  - 76% of consumers think of archiving on CD
  - Easy access and retrieval from archives is also important

- Consumers organize their photos into collections but there is no standard way to interchange photo collections from computer to CE devices

Interchange from PC to CE loses photos’ metadata and the notion of “collection”
**Camera Phone Market**

**Dramatic Rise in Market Share**

Immediate Capture, Catalog and Share

Keyboard allows for metadata entry

Phone to web

Phone to phone

Source: Infotrends' 11/04 Worldwide Consumer Digital Camera Forecast Summary
Digital Content Explosion: MP3 Everywhere

- PC is becoming the main storage device for music collections
  - Digitized personal collections
  - Online services
- Consumers want to play their music on multiple CE devices
  - Car stereos
  - Home stereo
  - DVD player
  - Portable jukeboxes

MP3 Player sales (all types – MU)
Personal Music in the Home

Personal CD Collection

Online Music Services

Tag, Clean, Organize & Burn

Play on CE devices

Interchange from PC to CE loses notion of “playlists” and most music metadata
Video Content Proliferation

- Consumers will soon exhaust the hard disk drive space on their PVRs
  - Desire to archive on optical discs
  - Next generation PVRs have DVD recorder
- New devices for video capture and playback are reaching consumers
  - Many Camera phones record video
  - Portable Media Players
Customers will want easy access to their archived TV content.
Digital Content Explosion:
Optical Storage transition from CD to DVD

- DVD burner sales take off in 2004
  - 10.7 MU of PC DVD burners
  - 40% of Home PCs ship with DVD recorder
  - <$100 for aftermarket drives (8X)

- <$1 per blank DVD disc (DVD-R)

- Consumer DVD recorders reaching mass market price
  - <$400 for brand name

Consumers will be storing more photos & music files on every disc
Today’s Experience

DVD-R/CD-R Playback on DVD Player

- Difficult to navigate
  - Truncated song names
  - Tree structure
  - No sorting
- Lengthy disc start-up
- No metadata
  - For photos: caption, date/time
  - For music: genre, duration, year, etc.

Unsatisfactory Consumer Experience
There is no *universal* way to represent collections of music, photo and video.
MPV™ (MusicPhotoVideo)

A media management solution for the interchange of media collections
MPV Overview

- MPV is a XML-based “control” file(s) listing all the assets and their associated metadata
- MPV is based on a series of “profiles” each addressing a technology or media type
- Independent of storage technology
  - can be used on optical storage, flash memory, HDD, home network, client/server Internet transactions, etc.
MPV Enabled Products

- Guarantees a consistent and easy navigation
- Rapid startup
  - Single file to be read from disc or transferred along home network
- Rich metadata available
MPV Architecture

- Core and Basic profiles define the assets and album (or collections)
- Device or data type specific data profiles are built upon the Core & Basic
- Guideline Specifications define a narrow interpretation of profiles to solve a particular problem
Ratified MPV Profiles

- Core and Basic profiles define assets and albums
- Presentation Profile for screen display
  - Foreground, background
  - Enables slideshows with background music and audio annotations
- Music Profile describes collections of music files and their associated metadata (artist, genre, year, online info, etc.)
- Broadcast TV for video content on PVRs
Interoperability Specification

- Specification designed for interoperability on consumer electronics devices
  - Limited processing power
  - Limited memory
  - Maximized consumer experience
- Limits use of profiles to ensure proper exchange and interoperability
- Available via click-through license
  - Use in products requires full license agreement (i.e., passing validation tests)
Interoperability Licensing and Certification Program

- MPV-IS is a self-testing, self-certifying program
- **ValidateMPV!™** Validation Tool
  - Available from Software Architects, Inc.
  - Support for Windows, Linux and Mac
  - Command line interface
  - Automatically outputs a detailed report which refers to each MPV-IS requirement
  - Support for Windows, Mac and Linux
- One-time administrative licensing fee (no royalties)
  - $$ option 1 – one-time
  - $$ option 2 – per product
- Trademarks and Logo
  - Use is optional but highly encouraged

Price still to be set by OSTA board at June meeting
OSTA members are currently working on new profiles

• **Upcoming Profiles**
  - Portable storage for transfer of files (example: flash memory card) to PC (hard drive)
  - CE Playlists for enhanced playback of collections (multimedia slideshows, music playlists) on all devices
  - Digital Camera
New Interchange Enabled by MPV

Digital Camera

PC-less

Media Server

UPnP

Printer & Online Service

Wireless Media Adapter
# MPV Committee

<table>
<thead>
<tr>
<th>Sub-committee or WG</th>
<th>Leadership</th>
<th>Company</th>
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</thead>
<tbody>
<tr>
<td>MPV Committee Chair</td>
<td>Felix Nemirovsky</td>
<td>Chuba Consulting</td>
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<tr>
<td>MPV CORE Specifications</td>
<td>Pieter van Zee</td>
<td>HP</td>
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<tr>
<td>Camera WG</td>
<td>Kenji Ichimura</td>
<td>Olympus</td>
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<tr>
<td>Portable Storage WG</td>
<td>Po-Chieh Hung</td>
<td>Konica Minolta</td>
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<tr>
<td>Broadcast TV WG</td>
<td>Eric Shalkey</td>
<td>TV Guide On Screen</td>
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<tr>
<td>Interoperability WG</td>
<td>Youngyoon Kim</td>
<td>Samsung</td>
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<tr>
<td>Music WG</td>
<td>Raza Zaidi</td>
<td>Jadugar Consulting</td>
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<tr>
<td>Print WG</td>
<td>Fumio Nagasaka</td>
<td>Epson</td>
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MPV Adoption by Other Standards Bodies

- **PASS Initiative**
  - Picture Archiving and Sharing
  - An initiative by Kodak, Fuji and Konica/Minolta
  - Guarantees playback in DVD players of discs created by photo-finishing kiosks and services

- **CEA R6WG11 Audiobooks**
  - Advanced Metadata for books on CD
MPV™ Advantages

- Open
  - Developed in an open fashion by OSTA’s participating members

- Extensible
  - Extensible to new technology areas
    - Portable storage and CE playlist profiles coming soon

- Royalty-Free
  - No royalties from OSTA
    - Minimal one-time administrative logo licensing fee
## Expected MPV Products

<table>
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<tr>
<th>Photo/Video</th>
<th>Acquire</th>
<th>Manage</th>
<th>Share/Enjoy</th>
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<tbody>
<tr>
<td></td>
<td>Cameras</td>
<td>Camera Phones</td>
<td>TVs</td>
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<td></td>
<td>Scanners</td>
<td>Photo Management Softwares</td>
<td>Printers</td>
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<td></td>
<td>Disc Mastering software</td>
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<td>Online photo services</td>
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<tr>
<td>Music</td>
<td>Online music services</td>
<td>Music jukebox software</td>
<td>DVD Players</td>
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<td>Wireless Media Adapters</td>
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<td>Portable players</td>
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Developing for MPV

- **Free SDK**
  - ANSI C source code for basic reading and writing of MPV
  - Sample playback routing written in DHTML and Javascript (for IE6.0 only)
  - Expat XML parser

- **No additional hardware required**
  - MIPS requirements are comparable or even lower than standard JPEG playback
  - Small Memory footprint

- **Time to market** – short development time to add MPV to CE devices

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<th>Factor</th>
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<tr>
<td>Development time</td>
<td>2 weeks, Olympus Camera firmware</td>
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<tr>
<td>MIPS</td>
<td>58.1 (vs. 94.5 for JPEG CD), Samsung DVD Player – MPV Photo “Play Slideshow” routine</td>
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<tr>
<td>Memory Footprint</td>
<td>54KB (compressed), Samsung DVD Player – MPV Music and Photo including XML parser and formatter</td>
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Summary

- MPV provides a universal way to interchange collections of photos, video and music.
- MPV is easy to implement and being adopted by many of today’s leading PC and CE manufacturers.
- MPV is open, extensible and royalty-free from OSTA.

http://www.osta.org/mpv