

The background of the image is a collage of various items: a magnifying glass with an Apple logo on its handle, a green pen holder with several pens, a globe, and a wooden desk. The text is overlaid on this background.

Worldwide

Developers

Conference



QuickTime on the Internet

Mike Dodd

QuickTime Engineering

Meriko Blink

QuickTime QA

QuickTime on the Internet

- **Deploying content on the Internet**
- **Creating content optimized for the Internet**
- **Integrating your application with Internet media**



QuickTime Plug-In 1.x

- **Movie playback in a Web browser**
- **QuickTime and QuickTime VR movies**



QuickTime Plug-In 1.x

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- **QuickTime and QuickTime VR movies**
- **Progressive Download**
 - Don't wait for entire movie to download
 - Users experience your content almost immediately



QuickTime Plug-In 1.x

- **Movie playback in a Web browser**
- **QuickTime and QuickTime VR movies**
- **Progressive Download**
 - Don't wait for entire movie to download
 - Users experience your content almost immediately
- **Shipped with Netscape Navigator 3.0**
- **Mac OS, Windows95/NT, Windows 3.1**



QuickTime 3.0 Internet Features

- **Low bit-rate video codecs**
 - H.263
- **Vector animation codec**
- **Video effects**
- **Data compression**
- **URL linking from any application**



QuickTime 3.0 Internet Features

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- **Data compression**
- **URL linking from any application**
- **Beyond 3.0**
 - Internet Data Handler



QuickTime Plug-In 2.0

- **Many new features**
 - Poster frame capability
 - Data-rate alternates



QuickTime Plug-In 2.0

- **Many new features**
 - Poster frame capability
 - Data-rate alternates
- Will ship with QuickTime 3.0



Playback in a Web Browser

- Plays all major media formats
 - QuickTime Movies
 - QuickTime VR Movies



Playback in a Web Browser

- **Plays all major media formats**
 - QuickTime Movies
 - QuickTime VR Movies
 - Uses QT Media Abstraction Layer for other media types
 - Sound (WAV/AU/AIFF)
 - MPEG
 - AVI
 - MIDI





Demo

Playback in a Web Browser

- Progressive download maximizes response
- Easy to embed:

```
<EMBED SRC="Doctor.mov"  
WIDTH=320 HEIGHT=240  
AUTOPLAY=TRUE>
```

- Other media types just as easy:

```
<EMBED SRC="Money.mpg "  
WIDTH=320 HEIGHT=240  
AUTOPLAY=TRUE>
```



Poster Frame

- **Initial download is only the poster frame**
 - Use vector codec for poster frame
- **Click to have the rest of the movie downloaded**





Demo

Poster Frame

- **More coherent presentation to the user**
 - Keeps the user on a single page
 - Don't keep jumping around on your site
- **Many possible uses**
 - Movie previews page
 - Sound movies
- **Easy to author:**
 - `<EMBED SRC="posterframe.mov"
WIDTH=520 HEIGHT=500
HREF="welcome.mov"
TARGET="myself">`



Alternate Data Rates

- Scalable content
- No longer forced to author to the lowest common denominator
- Uses QuickTime alternate tracks





Demo

Alternate Data Rates

- **Deliver the best content for the user**
- **Can mix track types**
 - High bandwidth: Video/Sound
 - Low bandwidth: Video/Music



Low-Bandwidth Media

- **Low-bit rate codecs**
 - H.263—conferencing standard
 - ClearVideo from Iterated Systems
- **Vector codec**
- **Sprites**
- **Effects**





Demo

Low-Bandwidth Media

- **Sprites**
 - High-quality graphics
 - Tween track controls sprites in very low bandwidth
 - Video
 - Position
 - Scaling



Low-Bandwidth Media

- **Sprites**
 - **Effects**
 - **Rippling Water**
 - **Clouds**
 - **Fire**



Low-Bandwidth Media

- **Sprites**
 - **Effects**
 - **Rippling Water**
 - **Clouds**
 - **Fire**
- **Vector codec**
 - **Good for animations**



Embedded URLs in Media

- Tracks can contain URLs
 - Sprite
 - 3D
 - Text



Embedded URLs in Media

- **Tracks can contain URLs**
 - Sprite
 - 3D
 - Text
- **Movie controller sends message on click**
 - Default behavior sends message to Internet Config
 - Or the Plug-in handles it
 - Or your application handles it





Demo

Responding to Movie Controller Message

```
Boolean mcActionFilter(short  
    action, long param)  
{  
    if (action ==  
        mcActionLinkToURL) {  
        Handle url = (Handle)params;  
        mySendURL(url);  
    }  
}
```



Reading URL from Media

```
Media med;  
ComponentInstance mh;  
Handle url;  
  
med = GetTrackMedia(trk);  
mh = GetMediaHandler(med);  
MediaGetURLLink(mh,  
                clickLocation, &url);
```





Demo

Embedded URLs in Text Tracks

- Hotspots per frame
- Can author using MediaPlayer

```
<http://quicktime.apple.com>  
T<textFrame>
```



Auto-URL Linking

- Send a URL automatically at a given time
- Simple extension of Embedded URLs in Text Tracks
- Good for slide shows

```
A<http://quicktime.apple.com>  
T<textFrame>
```





Demo

Putting Pieces Together

- **Problem:**
 - Want to play an interlude movie between two QuickTime VR movies



Putting Pieces Together

- **Problem:**

- Want to play an interlude movie between two QuickTime VR movies

- **Solution:**

- Use self-targeting to load second movie in place of the VR movie
- Use auto-URL and self-targeting in second movie to load the third movie



Interlude Between Movies

- Poster frame to load interlude

```
<EMBED SRC="space.mov"  
WIDTH=520 HEIGHT=500  
HREF="launch.mov"  
TARGET="myself">
```



Interlude Between Movies

- **Poster frame to load interlude**

```
<EMBED SRC="space.mov"  
WIDTH=520 HEIGHT=500  
HREF="launch.mov"  
TARGET="myself">
```

- **Auto-URL Linking from interlude to new QTVR**

```
A<moon.mov> T<myself>
```





Demo

Internet Data Handler

- **Content can be anywhere**
- **Play in any application**
- **Can be used for non-QuickTime data**





Demo

Internet Data Handler

- Internet content can play in any QuickTime-enabled application
- Alternate Data Rates work everywhere



Retrieving Internet Data

```
Handle GetInternetData (DataHandler dh,  
    Handle url) {  
    Handle data;  
    long size;  
  
    DataHSetDataRef(dh, dataRef);  
    size = DataHGetFileSize(dh);  
    data = NewHandle(size);  
    DataHGetData(dh, data, 0, 0, size);  
    return data;  
}
```



Summary

- **QuickTime is best solution for authoring**
 - Professional Video to CD-ROM to Web
- **Easily repurpose your existing content for the Internet**
- **Can work with QuickTime Internet content in all your favorite applications**
- **Plug-in automatically takes advantage of QuickTime advances**
 - New media types
 - New codecs



The background features a dark, textured surface with a glowing blue and purple sphere in the center. A white Apple logo is positioned at the top of the sphere. The text "Worldwide Developers Conference" is overlaid on the image. "Worldwide" and "Conference" are in a gold, serif font, while "Developers" is in a white, serif font inside a white rectangular box.

Worldwide

Developers

Conference