RHED
PIXEL
A Visual Communications Company
Delivering Video to Mobile Audiences:
How to Create, Compress, and Deliver Video to iPhones, iPads, Droids and Blackberries

Purpose of Workshop

- Learn essential skills needed when compressing video for delivery via web or disc
- Help your video sound and look its best
- Learn techniques that produce compatible files
- Learn to use modern tools that shrink your files with no perceivable loss of quality
- Debunk common misconceptions and bad practices
Richard Harrington

- RHED Pixel (www.RHEDpixel.com)
- Adobe Certified Expert & Trainer
- Apple Certified Trainer
- Avid Master Editor
- Project Management Professional
- Teach courses on digital media production and web content
- Social media – rhedpixel
RHED Pixel
Mobile Video Experience
Mobile Video Experience

- Understanding Adobe Photoshop
- Final Cut Help
- Photoshop for Video
- Secrets of Style with Kim Foley
- Peachpit Press Author Tips
- Tech on the Road
- Google Web Toolkit
- Photoshop CS4 Sneak Peek
- Producing Video Podcasts
Mobile Video Experience

- OnMicrosoft
- OnNetworking
- OnOpenSource
- OnSecurity
- OnSoftware
- MacBreak Work
- Inside Mac (consulting)
- Photoshop User TV (consulting)
- MommyCast (production)
<table>
<thead>
<tr>
<th>Name</th>
<th>Time</th>
<th>Artist</th>
<th>Release Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rest of Everest Bonus Episode &quot;Savage Si...</td>
<td>22:25</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>11/11/07</td>
<td>Catching Up With Ben. The Rest of Everest returns this week with a new episode!</td>
</tr>
<tr>
<td>Rest of Everest Bonus Episode &quot;Savage Si...</td>
<td>21:36</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>11/14/07</td>
<td>Catching Up With Ben. The Rest of Everest returns this week with a new episode!</td>
</tr>
<tr>
<td>Rest of Everest Episode 061</td>
<td>32:55</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>9/26/07</td>
<td>One Door Closes, Another Opens. The last two days in Kathmandu were filled with adventures!</td>
</tr>
<tr>
<td>Rest of Everest Episode 059</td>
<td>20:54</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>9/19/07</td>
<td>Goodbye Everest. Goodbye Chomolungma. We all woke up early this morning...</td>
</tr>
<tr>
<td>Rest of Everest Episode 058</td>
<td>16:23</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>9/13/07</td>
<td>Getting Ready For Goodbye. This was the last afternoon and Ben and I had some serious discussions...</td>
</tr>
<tr>
<td>Rest of Everest Bonus Alan Arnette Introdu</td>
<td>18:41</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>9/13/07</td>
<td>Memories Are Everything. As promised here is an introduction video...</td>
</tr>
<tr>
<td>Rest of Everest Episode 057</td>
<td>18:07</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>8/30/07</td>
<td>Little Black Book. Later this morning after breakfast I headed back to the village...</td>
</tr>
<tr>
<td>Rest of Everest Episode 058</td>
<td>19:11</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>8/22/07</td>
<td>Let Them Have Cake! I spent the morning today doing what I should have been doing all along...</td>
</tr>
<tr>
<td>Rest of Everest Episode 055</td>
<td>17:56</td>
<td><a href="http://www.therestofeverest.com">www.therestofeverest.com</a></td>
<td>8/15/07</td>
<td>Off With Their Bows! This afternoon our camp was buzzing with activity...</td>
</tr>
</tbody>
</table>

The Evolution of Mobile Video
From Blogging to Podcasting
From Blogging to Podcasting

- Blogging refers to the writing of a text-based web log or journal entry.
- RSS coding made the syndication of these text entries possible.
- Users could now “subscribe” to weblogs.
- RSS code was updated with the possibility to enclose rich media files like audio MP3 files, video MP4.
From Blogging to Podcasting

- Podcasting is born.
- Term invented in August 2004.
- Podcasts are one of the fastest-growing media channels in history.
- While radio audience is declining, podcast circulation is consistently growing nearly 20% per month.
Podcasting Highlights

- In October 2005, Apple introduces video capable iPods and Front Row Media Center with full support for video podcasting.

- iPod supports downloadable video podcasts through iTunes RSS subscription and syncing features.

- iPhone expected to have over-the-air downloads with next software update.
A Brief History of RSS

- The RSS formats evolved from several earlier attempts at syndication.
- This work is thought to have begun in 1995 by Ramanathan V. Guha and others in Apple Computer’s Advanced Technology Group.
- This then evolved into the RDF Site Summary, which is the first version of RSS (RDF stands for Resource Definition File, which was an XML standard devoted to describing information resources.)
- This version became known as RSS 0.9 and was intended for use in the my.Netscape.com portal.
A Brief History of RSS

- The technology continued to evolve and in July of 1999, Dan Libby of Netscape produced a new version called RSS 0.91.

- The technology was renamed RSS, which stood for Rich Site Summary. The technology saw several early adopters as many web publishers wanted to make their content compatible with the dominant Netscape Navigator web browser.

- Support for RSS waned though as new Netscape Owner, AOL dropped support, all documentation and tools from the Netscape site.
A Brief History of RSS

- Two different development parties emerged to take up the RSS mantle and continue development (without the approval of Netscape).
- Both the RSS-DEV Working Group and Dave Winer continued to create tools and refine the RSS technology.
- These two groups worked competitively against each other producing different versions of RSS.
A Brief History of RSS

- In December 2000, Winer released RSS 0.92 which offered the enclosure element. The enclosure element allowed for the addition of audio and video files (and hence served as a spark for podcasting).

- In September 2002, Winer released a major new version of RSS. Appropriately named RSS 2.0, the format was re-dubbed Really Simple Syndication.
A Brief History of RSS

- The copyright for RSS was assigned to Harvard's Berkman Center for the Internet & Society in July of 2003.

- At the same time the RSS Advisory Board was launched to maintain and publish the specifications. The group is also charged with addressing questions and developing a community for RSS.

- The group continues to evolve the specification and address ambiguities in the technology that better enable web developers to deliver content.
Mobile Video Strategies
The Rise of New Workflows
Delivering Mobile Video

- Plan
- Produce
- Distribute
- Promote
- Monetize (optional)
## Top 10 Countries by Number of Internet Users

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Internet Users</th>
<th>Population %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>China</td>
<td>420,000,000</td>
<td>31.80%</td>
</tr>
<tr>
<td>2</td>
<td>United States</td>
<td>234,372,000</td>
<td>76.30%</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>95,979,000</td>
<td>75.50%</td>
</tr>
<tr>
<td>4</td>
<td>India</td>
<td>81,000,000</td>
<td>7.00%</td>
</tr>
<tr>
<td>5</td>
<td>Brazil</td>
<td>72,027,700</td>
<td>36.20%</td>
</tr>
<tr>
<td>6</td>
<td>Germany</td>
<td>61,973,100</td>
<td>75.30%</td>
</tr>
<tr>
<td>7</td>
<td>United Kingdom</td>
<td>46,683,900</td>
<td>76.40%</td>
</tr>
<tr>
<td>8</td>
<td>Russia</td>
<td>45,250,000</td>
<td>32.30%</td>
</tr>
<tr>
<td>9</td>
<td>France</td>
<td>43,100,134</td>
<td>69.30%</td>
</tr>
<tr>
<td>10</td>
<td>South Korea</td>
<td>37,475,800</td>
<td>77.30%</td>
</tr>
</tbody>
</table>
## Top 10 Countries by Percentage of Internet Users

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Internet Users</th>
<th>Population %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Iceland</td>
<td>285,700</td>
<td>93.2%</td>
</tr>
<tr>
<td>2</td>
<td>Norway</td>
<td>4,235,800</td>
<td>90.9%</td>
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<tr>
<td>3</td>
<td>Greenland</td>
<td>52,000</td>
<td>90.3%</td>
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<tr>
<td>4</td>
<td>Sweden</td>
<td>8,085,500</td>
<td>89.2%</td>
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<tr>
<td>5</td>
<td>Netherlands</td>
<td>14,304,600</td>
<td>85.6%</td>
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<tr>
<td>6</td>
<td>Denmark</td>
<td>4,629,600</td>
<td>84.2%</td>
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<tr>
<td>7</td>
<td>Finland</td>
<td>4,382,700</td>
<td>83.5%</td>
</tr>
<tr>
<td>8</td>
<td>New Zealand</td>
<td>3,500,000</td>
<td>83.1%</td>
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<tr>
<td>9</td>
<td>Australia</td>
<td>17,033,826</td>
<td>80.1%</td>
</tr>
<tr>
<td>10</td>
<td>Luxembourg</td>
<td>387,000</td>
<td>78.7%</td>
</tr>
</tbody>
</table>
The Five W’s for Refining a Show Concept

- **Who**—Who is going to watch the show? Who is going to host the show?

- **What**—What topics will the show cover? What genre or format will it use?

- **Where**—Where will the show be recorded? A studio? On location?

- **When**—When will the show come out? Daily? Weekly? Monthly?

- **Why**—Why would a viewer subscribe? Why would they come back?
% of Online Adults Who Say They Watch Each Type of Video

- Comedy or humorous videos: 31% (2007) to 50% (2009)
- News videos: 22% (2007) to 43% (2009)
- Educational videos: 22% (2007) to 38% (2009)
- Movies or TV Shows: 16% (2007) to 32% (2009)
- Political videos: 15% (2007) to 30% (2009)
- Animation or cartoons: 19% (2007) to 22% (2009)
- Commercials or advertisements: 13% (2007) to 15% (2009)
- Adult: 6% (2007) to 7% (2009)
- Other: 6% (2007) to 8% (2009)
Delivering Mobile Video

- **Production Frequency** – How often are you going to record new episodes?

- **Acquisition Size** – We typically acquire shows in 720p HD (a frame size of 1280x720) at 24 frames per second (the same as film).

- **Delivery Methods** – You need to consider your primary and secondary delivery methods.

- **Audience Capabilities** – You need to make some assumptions about your audience.
Questions to Ask

- Make-Up of Audience?
- Connection Speeds?
- Embedded into Page?
- Downloadable?
- Portable?
- Protected?
Analyze the Market

- Who is your competition?
- What makes your show different?
- What can you do better?
- Who do you want to attract?
- What weaknesses does your competition show?
- How can you take advantage of these?
Relevant Visuals

- Video based content should add to the broadcast by delivering information that cannot be relayed in an audio only format.
Develop for Portability

- Shooting and editing must be designed appropriately for intended purpose.
- Superior audio for small speakers, content designed for smaller window with lower frame rates.
Develop for Portability

- Content must be kept brief, engaging and to the point.
- If content is not intended to be viewed on a portable device, larger frame sizes can be used.
Leveraging Content

- Existing content must be evaluated for web delivery.
- Can also be used as B-roll for newly developed content.
- Existing content can be re-edited into an format for Podcast delivery.
Editing Advice
Editing Advice

- Seek resolution independent NLE
  - Flexibility with frame sizes
  - Flexibility with frame rates
- Synchronize frame rates early on
- Consider repurposing content
Editing Advice

- Exposure & Contrast
- Color Balance
- Audio Mix & Normalization
- Interlacing and when it is removed
- Run Time
- Shot Composition
What is Podcasting?
What is Podcasting?
Podcasting is distributing highly targeted, syndicated programs (shows) over the Internet in an audio or video format that interested audiences can subscribe to.
Not All Web Video is Podcasting

- In Order to be a Podcast...
  - Multiple Occurrences/Serialized
  - Able to Subscribe
  - Uses RSS Feed
  - Can be Joined/Left at End User’s Discretion
Uses for Technology

- Special interest radio & TV
- Software training
- Redistribute existing shows
- Distance learning
- Brand extension
- Public awareness
Like TiVo or a Magazine

- Subscribers can watch or listen at their convenience not just when program is broadcast.
- Audiences can select individual episodes to download without subscribing if they wish.
- Similar to purchasing a single magazine at a newsstand with the possibility of subscribing at a later date.
Key Podcasting Terms
Also called RSS readers, news readers

A software program that checks feeds you have subscribed to and displays the content

The most popular aggregator for podcasts is iTunes

Most web browsers have built in aggregators these days

Some “portal” websites do as well
Aggregators create a consolidated view of your feeds in a single browser or via application (iTunes).

Most standalone applications (iTunes) will download content to your computer’s hard drive which you can then view offline.

Web browser aggregators or portal websites require an active internet connection to display your chosen content.
iD3 Tags

- A system that allows users to store information, or metadata, about the piece of media
- Can be embedded within a file
RSS Technology

- RSS – real simple syndication
- A document written in XML
- Usually called a “feed”, and is used to publish frequently updated content
- Works for blog entries, news headlines and podcasts
- Feeds can be subscribed to using an aggregator or just viewed
The RSS Icon

- The RSS icon first appeared in the Mozilla Firefox web browser
- Microsoft then adopted it for use in Internet Explorer and Outlook
- The Opera web browser then followed along
- This made the orange square with white radio waves the industry standard
- Notably, Apple’s Safari browser does not follow suit
XML

- XML – Extensible Markup Language
- The programming language that creates RSS feeds through use of enclosure tags
- ID3 tags are also present in RSS, thus wrapping the media with metadata
Enclosure Tags

- Allow multimedia content to be attached to RSS feeds by providing URLs of their location.
- It was the creation of enclosure tags in 2001 that really fueled the birth of podcasting.
Who Uses Podcasts?
Who’s Podcasting?

- National Public Radio
- Public Broadcasting Service
- ABC – CBS – NBC
- BBC – CNN – Associated Press
- MTV – ESPN – VH1 – HGTV
- New York Times
- Wall Street Journal
- Washington Post
Who’s Podcasting?

- National Geographic
- Discovery Channel
- White House
- The Pentagon
- National Park Service
- US Treasury Department
- Political Candidates
Human
Podcasting relative to human interest and non-profit groups.

Technology
Podcasting relative to technology and other commercial groups.

www.PodcastingForACause.com
Subscribing to Podcasts

- User must have web access
- Broadband preferred, but not mandatory
- Available to Mac, Windows, and Linux users
- Ideally end-user will utilize an aggregator to capture feeds
- NOT required to be listed in iTunes
What is an Aggregator?

- Software that retrieves syndicated Web content that is supplied in the form of a web feed usually RSS.
- There are many “News Aggregators” that allow a user to build custom, personal “Newspapers.”
- Apple’s cross platform, free software “iTunes” is the leading aggregator for both audio and video podcasts.
What Does an Aggregator Do?

- Automates the process of checking for new user-defined content.
- Downloads new content when discovered.
- Sorts and indexes downloaded content.
Technology of Choice

- iTunes – 72%
- Web Browsers – 22%
  - Internet Explorer ~ 12%
  - Firefox ~ 4.5%
  - Windows Media Player Plugin – 3%
  - QuickTime Plugin – 2%
  - Safari – 1%
- Everything else – 6%
Podcast Consumption

Where do you most often listen to MP3s or other Digital Audio you have purchased?

- Portable Player: 46%
- Computer: 54%
Compression
Video Podcast Compression

- Two choices for file types for iPod compatibility
  - MPEG-4
  - H.264
- Other formats used include
  - Flash Video
  - Windows Media
- NOT true podcasting
MPEG-4 Specs

- Frame size
  - 640 x 480 or 640 x 360
  - 320 x 240 or 320 x 180
- Up to 2.5 Mbps
- 30 frames per second
- Simple Profile
- Audio up to 160 kbps, 48 Khz, stereo
H.264 Specs

- Large Size - 640 x 480 or 640 x 360
  - Up to 1.5 Mbps
  - 30 frames per second
  - Audio up to 160 kbps, 48 Khz, stereo
- Small Size – 320 x 240 or 320 x 180
  - Up to 768 kbps
  - 30 frames per second
  - Audio up to 160 kbps, 48 Khz, stereo
Maximum video size supported by each

- iPhone 3G/3GS: 640x480
- iPod Touch & iPhone 4: 960x640
- iPad: 1024x768
- Apple TV: 1280x720
Audio Podcast Compression

- Two choices for file types for iPod compatibility
  - .m4a
  - .mp3
# Apple TV Video Specifications

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<th>Output</th>
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<td>640x480, 30fps</td>
<td>640x480, 30fps, 3mbps*</td>
</tr>
<tr>
<td>1280x720 24fps</td>
<td>1280x720, 24p 5mbps*</td>
</tr>
<tr>
<td>1280x720, 30fps</td>
<td>960x540, 30fps 4mbps*</td>
</tr>
<tr>
<td>1920x1080, 24fps</td>
<td>1280x720, 24fps 5mbps*</td>
</tr>
<tr>
<td>1920x1080, 30fps</td>
<td>960x540, 30fps 4mbps*</td>
</tr>
<tr>
<td>1080i up to 60fps</td>
<td>960x540, 30fps 4mbps*</td>
</tr>
</tbody>
</table>

* Represents an average bit rate.

If you want to create a single file that works on all iOS devices, then deliver a 640 x 480 (or 640 x 360) file and keep the data rate below 1.5 Mbps.
Compression Tools

**PC**
- QuickTime Pro
- Sorenson Squeeze
- Procoder
- discreet Cleaner
- Cinematize
- MPEG Streamclip
- Adobe Media Encoder
- Episode & Episode Pro

**Mac**
- QuickTime Pro
- Sorenson Squeeze
- Compressor
- Episode & Episode Pro
- Adobe Media Encoder
- Handbrake
- Cinematize
- MPEG Streamclip
More on Compression

Canvas Size & Pixel Aspect Ratio
Pixels in Detail

- Square vs. Non-Square
- Pixel Aspect Ratio
- Resizing Video
Square Pixels

Non-Square Pixels
(DV Aspect Ratio)
Broadcast Safe Colors
Creating the Feed
Podcast Maker Overview

- From Potion Factory
- Some overlap with previous tools
- Allows user to split hosting of web files from generation of XML page
- Tight integration with iTunes Podcast Directory
- Allows for preview of page and functionality
- Contains both authoring and publishing tools
The Podcast RSS Buddy Overview

- From www.tolley.info
- Tight integration with iTunes Podcast Directory
- Allows for preview of page and functionality
- Contains both authoring and publishing tools
Web Workflow

- Several Stand-Alone websites
- Browser-based technology
  - PodHoster
  - HipCast
  - Libsyn
  - Blip.tv
Submitting to iTunes

- You need to pay very close attention to the title, author, description, and keywords tags at the <channel> level of your podcast feed. This is the information that is indexed for searches. This is also the copy that becomes your “packaging” in the store.

- Make your title specific. Apple says, “A podcast entitled ‘Our Community Bulletin’ is too vague and will attract no subscribers, no matter how compelling the content.”

- The <itunes:summary> tag allows you to describe the show in great detail. Apple suggests telling your audience about the “subject matter, media format, episode schedule, and other relevant info so that they know what they’ll be getting when they subscribe.” A good idea is to create a list of search terms you think a user would enter, then building these into your podcast description.
Submitting to iTunes

- Minimize your use of keywords. iTunes favors the summary tag over keywords. iTunes recommends instead that you use keywords for things like misspellings of names or titles. To prevent the abuse of keywords, iTunes ignores all but the first 12 keywords you’ve entered.

- Make sure you assign a valid iTunes category (you can browse iTunes for a list of categories). This makes it more likely the show will appear in its appropriate category and makes it easier for casual browsers to find your program.
Submitting the Feed to iTunes

Launch the iTunes application.
1. Click the iTunes Store icon in your sources list in the left column.
2. In the top navigation banner, in the iTunes Store box, click the Podcasts link to go to the Podcasts page.
3. In the Podcast Quick Links box in the upper right corner, click the Submit a Podcast link.
4. Follow the instructions on the Submit a Podcast page. You will need to have your podcast feed URL ready.
5. If you are not logged in, iTunes will prompt you to do so before accepting your submission.
6. If your RSS feed is valid and has all of the recommended iTunes tags, you will see a summary page after you submit your feed URL. If some of the required items are missing, iTunes will prompt you to fill them in.
Test & Optimize the Feed

- Use Feed Validator
  - http://www.feedvalidator.org/
- Use Feed Burner
  - http://www.feedburner.com/
Submit the Feed

- Podcast Alley – http://www.podcastalley.com/
- Zune Marketplace – http://www.zune.net
- Podcast Directory – http://www.podcastdirectory.com
- Podcast Alley – http://www.podcastalley.com
- Podcast.net – http://www.podcast.net
- Odeo.com – http://www.odeo.com/
- iPodder.org – http://www.ipodder.org/
- Podcast Pickle – http://www.podcastpickle.com/
- MeFeedia – http://www.mefeedia.com/
- digg – http://www.digg.com
Web Video Hosting
Web Video Hosting

- Several choices
- Bandwidth and total storage biggest factors to impact cost
- Weigh all factors
Popular hosts

- PodHoster
- Libsyn
- HipCast
- Blip.tv
- Slapcast
- YouTube
What is RHED Pixel?
What is RHED Pixel?

- Company founded in 1999
- 70% Full Service Clients
- 30% Support to Other Professionals
- Winner Ciné Award
- Offers variety of film, video, and multimedia services
- Recognized authority for video and multimedia industries
Services Offered

- Preproduction Planning
- Field Production
- Nonlinear Editing (SD & HD)
- Color Correction
- Motion Graphics
- Photo Restoration & Motion Control
- DVD & Blu-ray Authoring
- Podcast Distribution/Consultation
Resources

Things worth checking out
Have You Joined "From Still to Motion" Yet?
Saturday, November 21, 2009 Filed in: DSLR Video | Training Products | Resources

As a part of our new book "From Still to Motion - A photographer's guide to creating video with your DSLR" we’ve created a new Facebook page.

Over at Facebook you can connect with other users... exchange ideas... share resources!

Here's a sampling of recent stories.
Richard Harrington

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- Adobe Certified Expert & Trainer
- Apple Certified Trainer
- Avid Master Editor
- Project Management Professional
- Teach courses on digital media production and web content
CONNECT

703.531.1325 | Office
703.608.4852 | Cell
rich@rhedpixel.com
www.RHEDPixel.com
www.RHEDPixel.tv
CONNECT

twitter.com/rhedpixel
facebook.com/RichHarringtonStuff
facebook.com/Rich.Harrington
youtube.com/rhedpixeltv
RichardHarringtonBlog.com
linkedin.com/in/RichardHarrington
• Contract # GS-07F-0053V
  • 541–1 Advertising Services
  • 541–4B Video/Film Production
  • 541–5 Integrated Marketing Services

• Contract # GS-07F-0054V
  • 541–4E Commercial Photography
  • 541–4B Commercial Art and Graphic Design
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A Visual Communications Company