Copyright and Legal Notices

© 2001 – 2012 International Digital Enterprise Alliance, Inc. All Rights Reserved.

PRISM® and nextPub® are registered trademarks of the International Digital Enterprise Alliance, Inc. (IDEAlliance).

This document may be downloaded and copied provided that the above copyright notice and this Notice are included on all such copies. This document itself may not be modified in any way, except as needed for the purpose of developing International Digital Enterprise Alliance, Inc. ("IDEAlliance") specifications. Use of the specification or standard set forth in this document shall not create for the user any rights in or to such specification or standard or this document, which rights are exclusively reserved to IDEAlliance or its licensors or contributors.

Use of this document and any specification or standard contained herein is voluntary. By making use of this document or any specification or standard contained herein, the user assumes all risks and waives all claims against IDEAlliance, its licensors and contributors. By making this document available, IDEAlliance is not providing any professional services or advice to any person or entity. Any person or entity utilizing this document or any specification or standard contained herein should rely upon the advice of a competent professional before using any such information.

NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE REGARDING THE ACCURACY, ADEQUACY, COMPLETENESS, LEGALITY, RELIABILITY OR USEFULNESS OF ANY INFORMATION CONTAINED IN THIS DOCUMENT OR IN ANY SPECIFICATION OR STANDARD OR OTHER PRODUCT MADE AVAILABLE BY IDEALLIANCE. THIS DOCUMENT AND THE INFORMATION CONTAINED HEREIN AND INCLUDED IN ANY SPECIFICATION OR STANDARD OR OTHER PRODUCT OR SERVICE OF IDEALLIANCE IS PROVIDED ON AN "AS IS" BASIS. IDEALLIANCE DISCLAIMS ALL WARRANTIES OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY ACTUAL OR ASSERTED WARRANTY OF NON-INFRINGEMENT OF PROPRIETARY RIGHTS, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL IDEALLIANCE, ITS LICENSEES, CONTRIBUTORS OR THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, REPRESENTATIVES, SUPPLIERS OR CONTENT OR SERVICE PROVIDERS BE LIABLE FOR DAMAGES OF ANY KIND, INCLUDING WITHOUT LIMITATION, DIRECT, INDIRECT, COMPENSATORY, SPECIAL, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION DAMAGES FROM DATA LOSS OR BUSINESS INTERRUPTION) EVEN IF MADE AWARE OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN AN ACTION UNDER CONTRACT, TORT OR ANY OTHER THEORY, ARISING OUT OF OR IN CONNECTION WITH THE USE, INABILITY TO USE OR PERFORMANCE OF THIS DOCUMENT, THE SPECIFICATION OR STANDARD CONTAINED HEREIN, OR ANY OTHER DOCUMENT OR SPECIFICATION OR STANDARD MADE AVAILABLE BY IDEALLIANCE.

Some states do not allow the disclaimer or limitation of damages, so the disclaimers set forth above apply to the maximum extent permitted under applicable law.

IDEAlliance takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed or implicated with respect to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available. IDEAlliance does not represent that it has made any effort to identify any such rights. Information on IDEAlliance’s procedures with respect to rights in IDEAlliance specifications can be found at the IDEAlliance website at www.idealliance.org. Copies of third-party claims of rights, assurances of licenses to be made available, or the result of an attempt made to obtain a general license or permission for the use of such proprietary rights by implementers or users of this specification, can be obtained from the President of IDEAlliance at patent-disclosure@idealliance.org.

IDEAlliance requests interested parties to disclose any copyrights, trademarks, service marks, patents, patent applications, or other proprietary or intellectual property rights which may cover technology that may be required to implement this specification. Please address the information to the President of IDEAlliance at patent-disclosure@idealliance.org
# Table of Contents

1 Introduction ......................................................................................................................................... 1  
   1.1 Methodology ...................................................................................................................................... 1  
   1.2 Scope .................................................................................................................................................. 1  
   1.3 What is Out of Scope? .......................................................................................................................... 1  
   1.4 Goal ..................................................................................................................................................... 1  
      1.4.1 Distribution Framework .................................................................................................................. 1  
      1.4.2 Key Decision Factors ................................................................................................................... 2  
2 Status ..................................................................................................................................................... 3  
   2.1 Document Status ................................................................................................................................. 3  
   2.2 Document Location .............................................................................................................................. 3  
   2.3 Version History ..................................................................................................................................... 3  
3 The Market ........................................................................................................................................... 5  
   3.1 Key Video Drivers ............................................................................................................................... 5  
   3.2 Sources for Video Content .................................................................................................................. 6  
      3.2.1 Professionally produced, hosted & managed: .............................................................................. 6  
      3.2.2 User Generated Content (UGC): ................................................................................................. 6  
4 Constraints - The Challenge ............................................................................................................... 7  
5 The Video Ecosystem .................................................................................................................................. 9  
6 Video Publishing Workflow .............................................................................................................. 11  
7 Video Standards ..................................................................................................................................... 13  
   7.1 Files & Formats ................................................................................................................................... 13  
      7.1.1 Video input types ......................................................................................................................... 13  
      7.1.2 Output containers ........................................................................................................................ 13  
      7.1.3 Video formats ............................................................................................................................ 13  
      7.1.4 Transport stream protocols ........................................................................................................ 13  
      7.1.5 Video sizes ................................................................................................................................... 13  
   7.2 Device Types ...................................................................................................................................... 13  
      7.2.1 Makes and models ....................................................................................................................... 14  
      7.2.2 Operating Systems ..................................................................................................................... 14  
      7.2.3 Device Attributes ....................................................................................................................... 14
1 Introduction

The IDEAlliance Enabling Video Enhancements Working Group was formed to develop specifications, strategies and best practices for publishers moving from a standard print production environment to new workflows that must address the creation, management and distribution of digital publications enhanced with video. One deliverable from that effort is this Guide to video distribution for tablet and mobile publications.

1.1 Methodology

The IDEAlliance EVE Working Group followed the following steps to develop this Guide.

1. Document the publishing workflow for video. This workflow shows how video that is used specifically to enhance a print publication is created, managed and delivered. This workflow has some similarities to a workflow where video is the sole, intended output of production, but it has many differences as well.

2. Identify areas of expense, inefficiency, and stress within the publishing video workflow and select a first guideline to define. In this case we have decided to focus specifically on video distribution across multiple mobile digital platforms including tablets and smart phones.

1.2 Scope

The focus for this document is to provide an overview of video enhancements for publishers and provide a methodology to best choose a strategy for multi-platform video distribution. For readers less familiar with the changing video marketplace and ecosystem, we’ve pulled together some information to quickly get you started.

1.3 What is Out of Scope?

This document does not focus on other phases of video production. So it does not include best practice guidelines for video creation, transport, management, pack

1.4 Goal

The primary goal is to enable readers to quickly get a sense of how you can decide upon a video distribution strategy based on both your required distribution framework and the key decision factors that will drive your strategy.

1.4.1 Distribution Framework

The distribution framework is made up of your brand touch points (e.g., print, events, digital editions and social media) as well as typical access vehicles (i.e., ways in which your audience will access your video content).
1.4.2 Key Decision Factors

The decision factors – cost, time to market, quality, and resources – are the key business tradeoffs that will determine your various options. Together, the distribution framework and set of decision factors will enable you to select the best video distribution solution for your organization.
2 Status

2.1 Document Status

The status of this document is:

<table>
<thead>
<tr>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Draft A</td>
<td>06/17/2013</td>
</tr>
<tr>
<td>Released for Public Comment</td>
<td></td>
</tr>
<tr>
<td>Final Specification</td>
<td>10/04/2012</td>
</tr>
</tbody>
</table>

2.2 Document Location

The location of this document is:


2.3 Version History

<table>
<thead>
<tr>
<th>Version Number</th>
<th>Release Date</th>
<th>Editor</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Draft A</td>
<td>June 17, 2013</td>
<td>Puterbaugh, Kennedy</td>
<td>Video Distribution for Enhanced Publications</td>
</tr>
</tbody>
</table>
3 The Market

Videos can currently be found in a wide variety of brand touch points, e.g., on their web sites, via Facebook, in digital editions and within mobile apps. See Figure 3.1.

![Brand Touch Points](Image)

Figure 3.1 Brand Touch Points

According to Cisco, video will generate 66%+ of mobile traffic by 2017. Already, accessing video over the Internet has become mainstream, supported by comScores most recent data on the state of online video in the United States:
- 82 million Americans will watch 1.6 billion videos today
- 188 million will watch 265 videos per person per month

The drivers behind this data are a combination of easier and affordable access coupled with both better content and platforms for consuming content.

3.1 Key Video Drivers

Key drivers include:

Tablets
- Consumption outstrips smartphones by 2:1 to 6:1 margin;
- Over half consumption via Wi-Fi

Bandwidth
- More ubiquitous Wi-Fi and faster cellular networks, e.g., LTE

Content
- Live (MLB, NFL, NHL, NCAA)
- One Demand YouTube, Hulu, Vevo, Netflix, Facebook

Access Technologies, e.g., HTML5
- Pro: Major step forward
- Con: fragmentation due to WebKit implement on different OS versions
3.2 Sources for Video Content

Unlike the traditional publishing model, a majority of the content being consumed is user generated.

### 3.2.1 Professionally produced, hosted & managed:

104.4 billion views are professionally produced, hosted and managed:
- 17.9 percent over 2011
- 13.2 percent of these views were from smartphones & tablets

### 3.2.2 User Generated Content (UGC):

408.8 billion views were generated by the public, that is non-professional users.
- Up 21 percent year-over-year
- 22.2 percent of UGC views were from smartphones & tablets
4 CONSTRAINTS – THE CHALLENGE

The difficulty of trying to reach the consumer wherever they are on whatever device they happen to be using at time directly correlates to the number of options we currently have available to us. See Figure 4.

As such, standing between the brand and the consumer are a dizzying array of devices, technologies and networks:

- YouTube, Facebook, Websites
- HTML5, Flash, Native apps
- WiFi, 2.5G, 4G / LTE, Ethernet
- Devices and Operating Systems

Figure 4 Delivery Devices and Formats
5 The Video Ecosystem

Luma Partners publishes a number of ecosystem charts that can help the publisher to better understand evolving ecosystems and likely business outcomes. See Figure 5.

Currently, most print-oriented publishers have utilized partners that play in a relatively small subset of the overall video ecosystem. Namely, the constituent functionality currently being utilized by these publishers include:

- Content Delivery Networks
- Online Video Platforms
- Transcoding Tools & Services

Figure 5 Video Ecosystem
6 VIDEO PUBLISHING WORKFLOW

The overall workflow involved in creating and distributing video involves six key activities and stages:

- Create
- Transport
- Manage
- Package
- Distribute
- Measure

The video creation process typically involves the widest range of activities, including: storyboarding, video capture, i.e., the raw footage, editing (e.g., “cutting & splicing”), digitization / rendering and, exporting to files.

After the video is created it is then transported to the brand. This stage currently involves a disparate number of methods and techniques including, but not limited to, uploading videos via FTP, end-user cloud services such as YouSendIt, emailing or active “pull-based” solutions that are monitoring folders or feeds for new video content.

Before a video is distributed there are two additional types of activities in the workflow, the management and packaging of the video and associated data. The management process includes the storage (e.g., in a DAM), categorization and labeling of videos. Sometimes, this involves some transcoding of the video into format suitable to a given internal system. In some cases, a “mezzanine” format is designated that acts as the “golden copy” of a given video. Packaging typically involves adding tags to the video, associating them with video players, adding hooks.

As part of the distribution stage, videos are often transcoded based on target device and network profiles and / or are pushed out to distribution points such as CDNs and aggregation sites.

Finally, the last and often ongoing stage in the workflow is the measurement process. This includes capturing, aggregating and analyzing the usage data as well as generating reports based on the business goals associated with the video consumption.
7  VIDEO STANDARDS

There are a number of video standards that range from de facto standards that have become widely
adopted to standards that have been formally developed by a standards body.

Current video standards address different aspects of video distribution:

- Files and Formats (e.g., h.264)
- Delivery (e.g., Media RSS)
- Monetization (e.g., IAB VAST)
- Protection (e.g., W3C Encrypted Media Extensions)
- Presentation (e.g., HTML5)

7.1  Files & Formats

Standards related to files and formats typically deal with the levels of encoding / bit depth, bit rates,
formats, output containers and protocols.

Here are some common video file types and formats:

7.1.1  Video input types

3g; .avi; .flv; .mov; .mp3; .mp4; .mpg; .oms; .rawvideo; .wma; .wmv; .yuv; .wav; .m4v;

7.1.2  Output containers

3gp; wmv; mp4; m3u8;

7.1.3  Video formats

h.263; h.264; wmv; mp4;

7.1.4  Transport stream protocols

HTTP; HTTP Progressive; Adaptive Bitrate Streaming; MMS; RTSP;

7.1.5  Video sizes

qcif; givga; hvga; vga; xga; whvga; wvga; wxga;

7.2  Device Types

Specific mobile devices, operating systems and their various attributes drive a number of the files and
formats.
7.2.1 Makes and models

iphone 3, 3gs, 4, 4gs, 5, ipad, ipad2, ipad 3, etc.

Samsung galaxy

7.2.2 Operating Systems

iOS 3, 4.x, 5, etc.

7.2.3 Device Attributes

Screen size

Retina Display

Supported network capabilities (gprs, edge, 3g, 4g, lte)

Supported file formats (h.263, h.264, wmv, mp4)

Supported video containers (3gp, mp4, wmv)

Supported Protocols (Progressive HTTP, Hinted HTTP, RTSP, ABS, MMS)

7.3 Delivery

A standard originally developed by Yahoo! Called Media Really Simply Syndication (MRSS) is often used to distribute and syndicate video content to different outlets and brand touch points on the Internet. This is a form of RSS (i.e., a type of XML format) that is geared towards content that includes videos. See Figure 7.1

![RSS Code](image)

Figure 7.1 RSS Code

7.4 Monetization

The IAB has released a set of standards geared towards video advertising and monetization.
**Video Ad-Serving Template (VAST)** - a universal protocol for serving in-stream video ads, permitting ad servers to use a single ad response format across multiple compliant publishers / video players.

**Video Player-Ad Interface Definition** - a common communication protocol between ad units and video players that enables rich ad experiences and detailed event reporting back to advertisers.

**Video Multiple Ad Playlist (VMAP)** – a protocol that allows content owners to describe where ad breaks should be placed in their content when they do not control the video player or the content distribution outlet. See Figure 7.2.

![Diagram of VAST process](image)

**Figure 7.2 IAB Standards**

### 7.5 Protection

The goals for the W3C encrypted media extensions are:

- Support simple decryption without the need for DRM servers, etc.
- Support a wide range of media containers and codecs
- Stream reusability
- Support a wide range of use cases.
- Minimize additions to HTMLMediaElement
- Compatible with adaptive streaming.
- Flexibility & Usability

See Figure 7.3
While HTML5 does not directly specify a set of video standards, the various implementation are becoming a determining factor in both adoption and the evolving video distribution landscape.

The de facto HTML5 standard includes MP4 container using the H.264 video format combined with either AAC or MP3 for audio.

To get a sense of the problems associated with HTML5 video implementations, here are a few examples of which formats work in which environments:

### 7.6.1 MP4

Plays in Safari, Chrome & IE9 (Windows 7)

Plays natively on most devices (iOS, Android)

### 7.6.2 H.264

Provides better quality

### 7.6.3 WebM

VP8 video codec

### 7.6.4 Vorbis audio

Based on Matroska media container
Firefox, Chrome, Opera

**7.6.5 Ogg + Theora with Vorbis Audio**

Firefox, Chrome, Opera
In order to properly frame the video distribution problem, you need to consider the brand touch points and the consumer access vehicles. A brand touch point is a destination in which someone can engage with your brand. The access vehicle is the manner in which they access the brand touch point.

<table>
<thead>
<tr>
<th>Brand Touch Points</th>
<th>Access Vehicles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook Page</td>
<td>Smartphone: browser</td>
</tr>
<tr>
<td>Twitter</td>
<td>Smartphone: hybrid app</td>
</tr>
<tr>
<td>Pinterest</td>
<td>Smartphone: native app</td>
</tr>
<tr>
<td>YouTube</td>
<td>Tablet: browser</td>
</tr>
<tr>
<td>Website</td>
<td>Tablet: hybrid app</td>
</tr>
<tr>
<td>Syndicated Feed</td>
<td>Tablet: native app</td>
</tr>
<tr>
<td>Widget</td>
<td>Desktop: browser</td>
</tr>
<tr>
<td>Smartphone App</td>
<td>Desktop: app</td>
</tr>
<tr>
<td>In-Book / Print</td>
<td></td>
</tr>
<tr>
<td>Tablet Digital Edition</td>
<td></td>
</tr>
</tbody>
</table>
9 DECISION FACTORS AND PROFILES

When choosing a video distribution strategy, we recommend you start with the set of decision factors based on either a brand or segment business strategy.

9.1 Decision Factors

Common decision factors that should be considered include:

- Time to market, i.e., how long it will take to deploy?
- Costs, i.e., how much will I need to invest upfront versus on-going commitments?
  - Start up, On going, Fixed & variable, Licensing, Usage
- Staff Resource Requirements, i.e., how many people in my organization will I need to commit to launching and maintaining this?
  - # of people
  - time commitments to launch capability by role
- Support & Maintenance Considerations
  - What is the scale I need to support
- Scale / “Enterprise-grade”
  - Service Availability
  - Flexibility, Amount of control you have
- Interoperability, Extensibility, Customization
  - Control over assets
- Source files
- Metadata

9.2 Key Video Distribution Profiles

There are three key video distribution profiles to consider:

9.2.1 Free Managed Service Model

Free, Limited Investment, Time to Market

Exemplar: YouTube

Alternatives: Vimeo, Facebook

9.2.2 Managed Service / Online Video Platform

Limited Upfront Investment, Moderate Resource Requirements, Easy to Operate

Exemplar: Brightcove

Alternatives: Ooyala, YouTube Premium
9.2.3 Aggregated Point Solutions

Higher Upfront Investment, Higher Resource Requirements, Highest Quality, Typically most cutting edge and differentiated

Exemplar: Magnify, Ramp, TubeMogul, Anystream

9.2.4 Open Source / “Roll Your Own”

Hybrid “hub and spoke” model | CMS-centric

9.3 Free Managed Service Approach

9.3.1 Features

Free, Limited Investment, Time to Market

Exemplar: YouTube

Alternatives: Vimeo, Facebook

9.3.2 Pros

Free

Time to Market

No integration costs

Reasonable quality

Fairly interoperable, e.g., can be used in Facebook, on website

Limited training time to get up to speed

Good for referral links / SEO traffic

9.3.3 Cons

Do not own the traffic

Recommendations to competitors

Ownership & IP issues, for UGC

Brand implications

Subject to Ads

Limited customization options

Limited to channels, brand constraints
9.4 Paid Managed Service / Online Video Platform Approach

9.4.1 Features

Limited Upfront Investment, Moderate Resource Requirements, Easy to Operate

Exemplar: Brightcove

Alternatives: Ooyala, YouTube Premium

9.4.2 Pro

Easy to use
Reasonable costs
Scalable
Service Level Agreements
One-stop shopping

9.4.3 Con

Poor integration with social networks
Lack of support for Facebook
Can’t post directly on Twitter or Pinterest
Limited metadata support
Issue with synchronization
Access to reference file, meta data
Limited batch capabilities
10 Summary

TBD