



Moving Media Content Workflows into the Cloud



Cloud infrastructure provides content owners with workflow enhancement and scale to overcome challenges of streaming to an increasingly diverse array of screens and devices

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Introduction

Video content owners are in an arms race to keep pace with the burgeoning array of devices and screen formats that consumers are snapping up to fulfill their content consumption needs. Failure to meet customer expectations for a high quality experience is the surest way to lose their loyalty, perhaps irretrievably. The need to offer a optimized viewing experience requires that multiple versions, or “renditions”, of the high quality master file be created and offered to the playback devices. This content creation and management workload can quickly overwhelm the capabilities of even the most well armed content owner. But automated, scalable cloud-based services are now available to make it possible to deliver content for any experience, on any device, anywhere.

The Premium for Quality Viewing

A poor viewing experience in today's hyperconnected consumer universe can be as devastating as the New York Times panning a Broadway opening. With a wide variety of options to choose from, negative first look reviews can alienate a large segment of the potential audience and virtually eliminate the likelihood they'll catch the show.

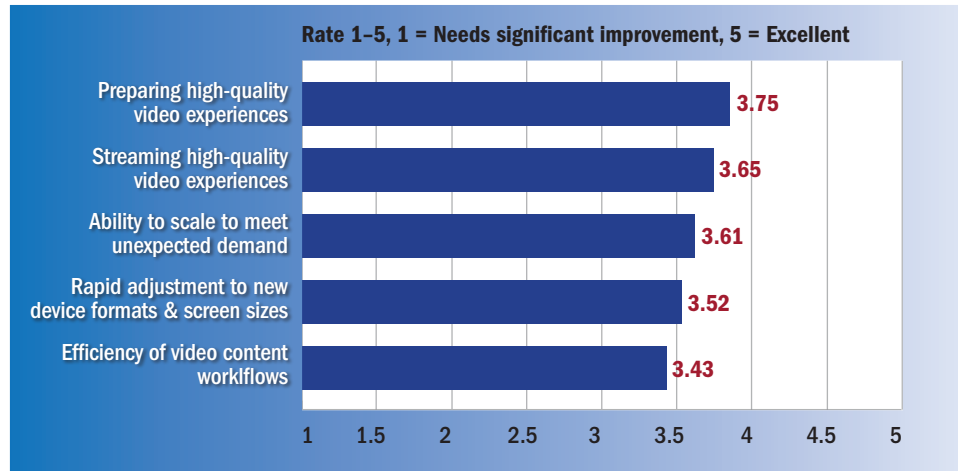
A recent report by market research firm IDC projects that more than 1.5 billion "smart connected" cell phones, tablets and PCs will be shipped in 2013, with mobile accounting for 65 percent of the total and tablet shipments expected to eclipse the number of all PCs¹—portable and desktop—shipped during the fourth quarter. This assortment of devices, plus a growing number of smart devices to stream content to TVs, is outpacing the ability of content owners to deliver the optimal experience to any platform regardless of operating system or screen size.

In a survey of 125 entertainment and media executives conducted recently by Gatepoint Research, many respondents indicate they are keeping pace or are even ahead of peers when it comes to video content delivery workflows, but nearly a third say they're falling behind.

Online video streaming has become a central form of communication that companies rely on to reach their

¹Source: IDC press release, "Tablet Shipments Forecast to Top Total PC Shipments in the Fourth Quarter of 2013 and Annually by 2015, According to IDC," Sept. 12, 2013. <http://www.idc.com/getdoc.jsp?containerId=prUS24314413>

Assess the following aspects of your organization's video content workflow.

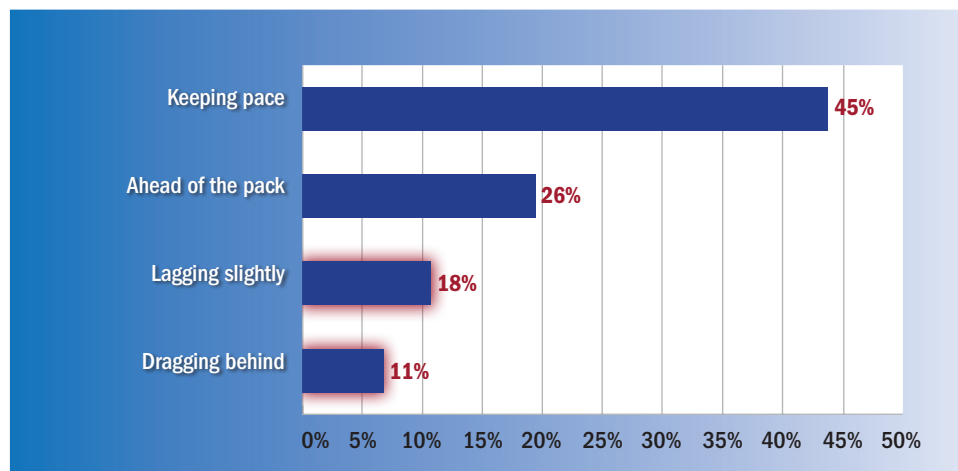


audience, customers, and employees. But delivering that content efficiently and effectively presents challenges that can result in viewing problems that may overshadow the message, or even damage the content owner's brand.

Content must be adapted and optimized to ensure the best possible quality for a given device or network, from high definition content on a big screen television to a responsive experience on a handheld device.

"This is a very complex issue," says Barrett Mononen, Product Marketing Manager for media with Akamai Technologies, which has been used by some of the world's largest and most recognized media companies to deliver high-quality video for over a decade. "If content is not streaming correctly, it can be due to any of several issues. There are many different variables for why something went wrong. You have to figure out why, where it occurred, and how to solve it."

How would you rate the efficiency of your organization's video content delivery workflows compared to industry peers?



Efficiency Challenge

In the Gatepoint Research survey, improving the consumer video experience is rated as the top priority for the coming 12 months, followed closely by speeding time to market and automating adaptation to new devices.

At the core of the content delivery challenge is transcoding, the process of taking a digital content source file and adapting it to varied outputs. In today's mobile broadband environment, video content delivery usually involves adaptive bitrate (ABR) streaming. ABR requires multiple renditions of the content so media players can dynamically switch between them during streaming playback, in order to respond to network congestion and the device's available resources.

The most common method of creating rendition sets is to run a high-quality source file through the transcoding system multiple times, each

time changing the output settings to match the rendition required. This can mean five to ten or more separate processes. Each rendition may produce key frames at slightly different points, which means that when the stream switches between bitrate renditions, the video will initially play poorly or not at all—resulting in a subpar viewing experience.

“Larger media companies will often have transcoding server farms where they operate dozens of hardware transcoders,” says Mononen. “To quickly create five or 10 separate renditions, they may run five or ten transcoding machines in parallel. However, this means they have to configure those operations to peak volume and pay the cost for overcapacity during non-peak periods.”

True Transformation via the Cloud

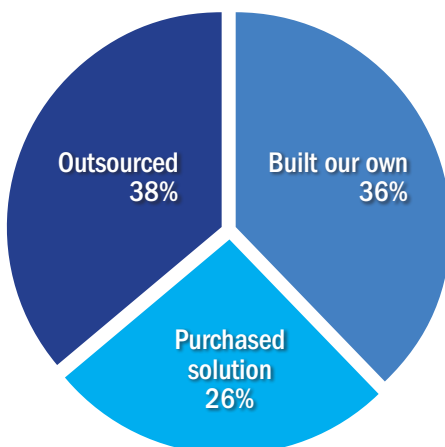
Content owners and producers are increasingly reaching into the cloud to improve their transcoding efficiencies and quality of delivered content.

The Gatepoint survey finds that 54 percent of respondents are already using or are considering using the cloud for transcoding.

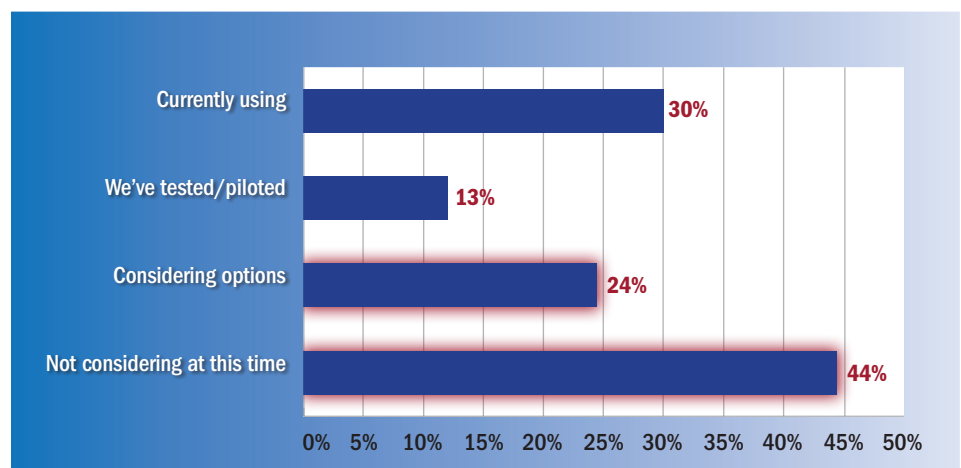
In recent years, some content owners have opted for cloud-based services to avoid overinvestment in hardware and to take advantage of elastic infrastructure. “With the cloud, you can provision resources for a norm and in most cases scale up to meet peak demand with charges based on usage,” says Mononen. “The content owner never sees the hardware, they just have to drop their files into a cloud storage location.”

But in many cases, those cloud services are still essentially operating separate individual transcoding systems in parallel, simply transferring productivity-sapping silos to the cloud environment without taking the opportunity to transform and modernize outmoded workflows. Lack of unified workflows, in fact, is the top problem indicated by respon-

Current transcoding system.



Are you using or considering cloud services for transcoding?



dents in the Gatepoint survey. Other issues cited are complexity, cost, and inefficiency.

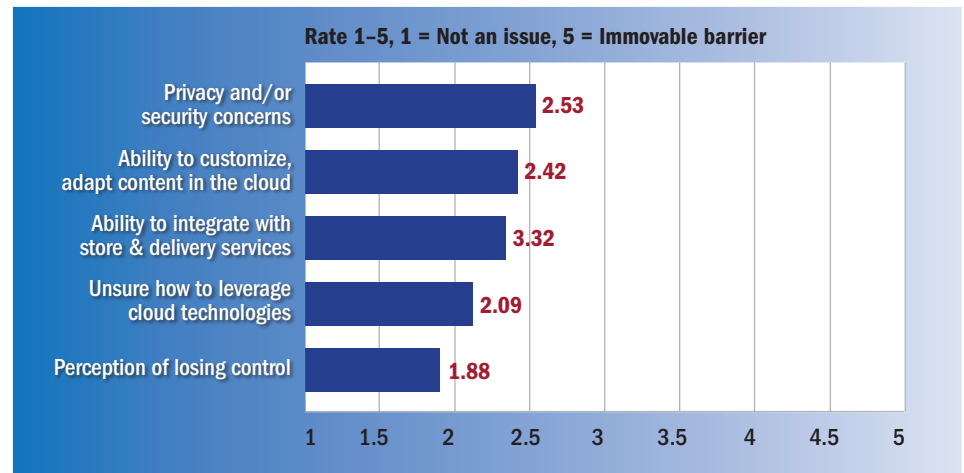
Even with some cloud-based transcoding services, content owners may find they are slowed by multiple steps requiring human intervention, such as moving files to a server, running scripts and tying content to media players.

Surmounting Obstacles

Producing high quality content that is optimized for streaming is just one of many challenges involved in providing a great viewing experience. Content can go viral overnight, so providers need to be able to scale reliably to meet unplanned demand. This includes not only content preparation, but also integration with a delivery solution that can perform reliably in the face of unexpected demand.

Broadcasters and content providers are moving beyond infrastructure-based solutions to focus on dramati-

What factors inhibit expansion of cloud services used in your organization?



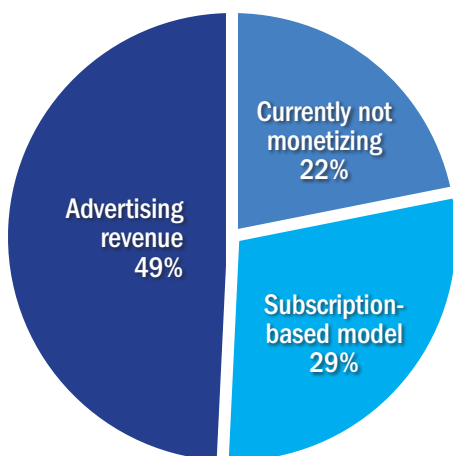
cally simplifying their workflows to more fully take advantage of the cloud. This involves taking aggressive steps to abstract the complexities of their hardware-based solutions while leveraging new workflow options such as cloud-based transcoding and advertising.

Content owners are also increasingly focusing on how best to monetize their video operations. Advertising is one of the best means of doing so,

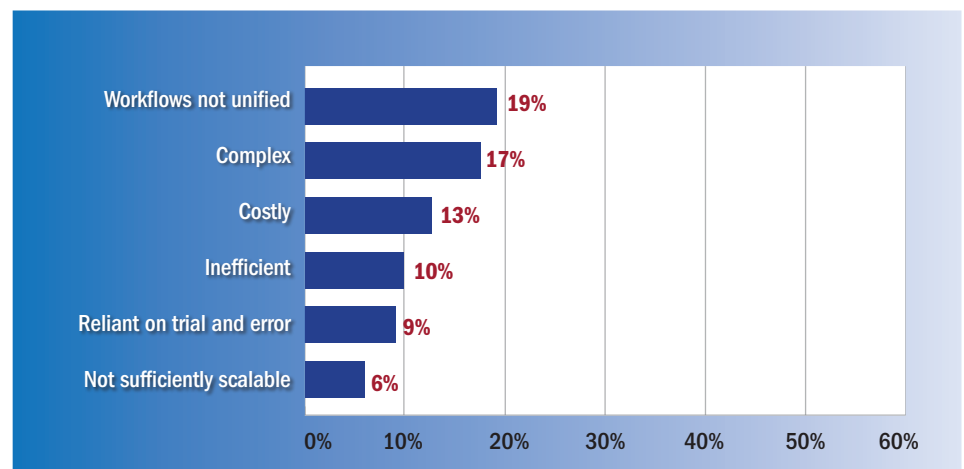
with video ad spending in the U.S. projected to reach over \$4 billion in 2013 and grow to over \$8 billion by 2016, according to eMarketer¹. Content producers and owners must first overcome challenges such as providing personalized, targeted ad messaging, and maintaining a high quality video experience without adding to

¹Source: eMarketer, "http://www.emarketer.com/Newsletter.aspxOnline Video Advertising Moves Front and Center," May 14, 2013. <http://www.emarketer.com/Article/Online-Video-Advertising-Moves-Front-Center/1009886#UyILHxYL6YWz7fq.99>

How do you monetize content?



Which of the following describe your current transcoding processes?



already burdensome complexity. Ads playing at low quality, breaking up the experience and in general providing more annoyance than information, can quickly cause the viewer to tune out or click out.

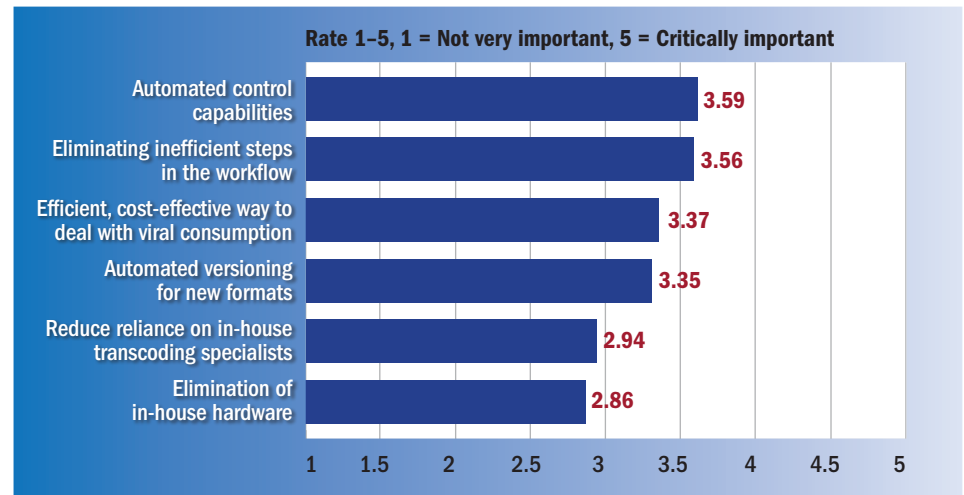
Protection of content from unauthorized viewers is another key aspect that owners and producers struggle with as they take advantage of cloud production services and push more and more files out over the Internet. The need to both manage subscription-based viewing and ward off pirates warrants multiple levels of security that can be used independently or combined to optimally balance content protection needs with audience demands for easy access.

Simplifying the Challenge

Competing in today's content environment necessitates an integrated approach to preparing, delivering, and monetizing online media experiences on any device, anywhere. This requires increased automation to simplify and accelerate the process of engaging audiences with content, without having to invest in additional in-house infrastructure or online video expertise.

“When it comes to automation, there are two perspectives, those who are not monetizing their media but using it to support the business, and those for whom media is their business,” says Mononen. “For the former, the priority is how simple can we make the process and how much can they reduce the workload that media creates for their team. If their business

What benefits would you like to achieve in improving transcoding processes?



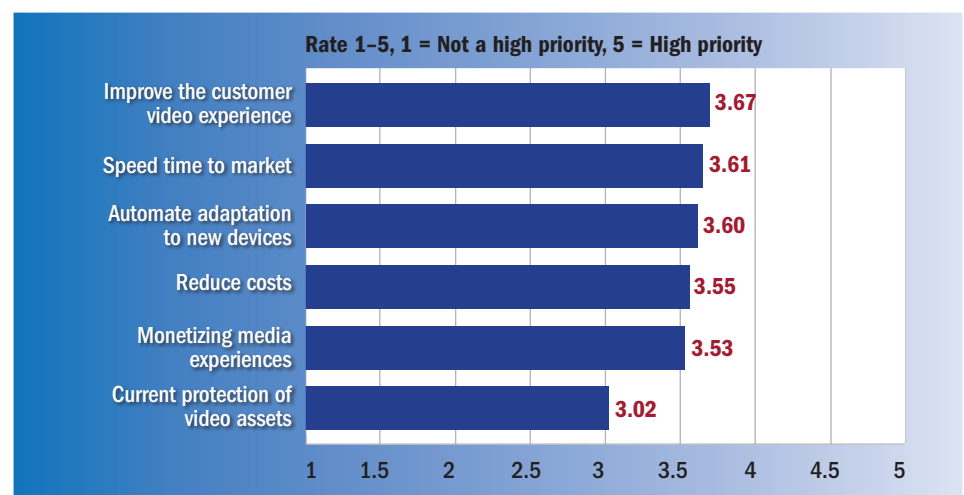
is media, they want to know about flexibility and how they can innovate within their existing workflow without disrupting operations.”

Akamai's Sola Media portfolio encompasses solutions to adapt content to engage viewers, protect online content, and connect to the company's global content distribution network. “Through 15 years of streaming media experience, we've determined that 70 percent of all streaming issues that

viewers see are the result of improperly prepared content,” Mononen says.

Akamai takes a different approach to producing multiple renditions from a single content file. “Rather than utilizing ten different machines creating ten different renditions, we'll have each machine work on creating different renditions of a small segment of the file so that the processing can scale rapidly and key frame alignment is maintained with transitions

What are your priorities in the coming 12-18 months?



between bit rates that are smooth and almost undetectable”, Mononen explains.

Akamai’s cloud-based transcoding and stream packaging services offer simplified, “one-stop” content preparation and packaging for multiple device types. The transcoding configuration is set and content is rapidly uploaded to a single location in Akamai’s cloud-based storage.

Transcoded content is delivered to a predefined network storage location and transcoding services seamlessly interoperate with other Sola cloud-based services for an easily managed workflow. Akamai’s Intelligent Platform provides for virtually unlimited capacity, coupled with redundancy and fault tolerance. With copies stored at multiple locations in Akamai’s globally distributed storage network, content is delivered intelligently, leveraging dynamic path optimization and congestion avoidance algorithms.

The measurement and analytics component of Sola Analytics provides rich statistics in actionable and relevant reports, including sophisticated audience data, real-time quality of service metrics, and individual viewer diagnostic reports. Additionally, Akamai’s Sola Ad Integration Services is a cloud-based solution designed to enable the dynamic insertion of targeted advertisements into online video streams.

Leveraging the Akamai Intelligent Platform

The Akamai Intelligent Platform manages the underlying complexities of online business—from device and format proliferation, to application and network security, to performance and reliability issues. The platform is made up of a distributed network of servers and intelligent software, delivering over 1.5 trillion interactions daily.

Akamai’s Sola Media Solutions, built on the Akamai Intelligent Platform, reduce the costs and complexities of media content workflow activity while reducing the chance of poor viewing experiences due to improperly prepared content. Learn how Akamai can help drive your business faster forward at www.akamai.com/sola.

Profile of Responders: Revenue

