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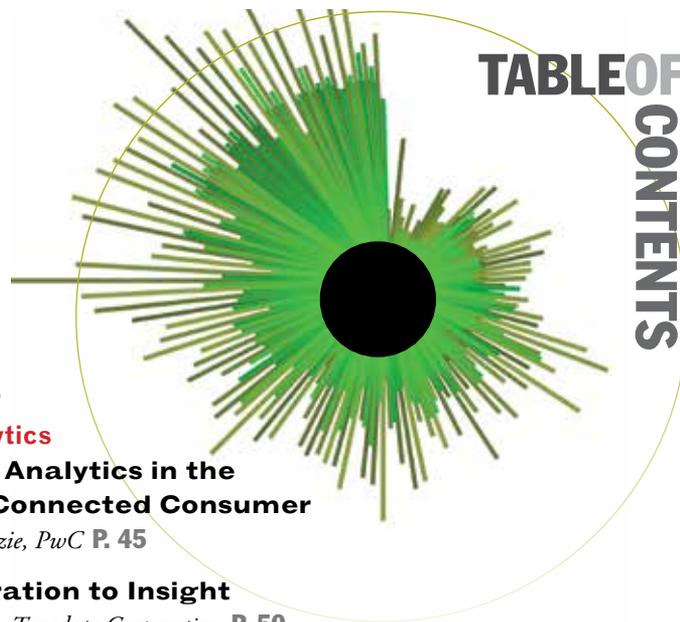
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The Digital Makeover of Hollywood: Innovations through Collaboration!

By Devendra Mishra, Chief Strategist, MESA,
Founder & Executive Director, HITS



Architecting a digital supply chain while producing a new consumer experience

The entertainment industry remains a critical contributor to the global economy as Hollywood represents an indigenous product of the U.S. and is a disproportionate driver of traffic on the World Wide Web. While the film and TV network businesses continue to thrive, it is the DVD business that has been adversely impacted by the disruptive technologies of digital and Internet. More precisely, the revenue of the home entertainment divisions of the Hollywood studios for the physical DVD has been declining precipitously while competitors for a consumer's wallet and time are emerging and growing with the advent of digital content delivery. The decline of DVD is irreversible and any attempt to restore the lost revenue will require a draconian change in the business model.

This decade will be recognized for the digital makeover Hollywood has undergone with the collaboration of its partners in the wake of the perfect storm of disruptive technologies. Responding to the formidable challenge, the CIOs, CMOs and CTOs and other stakeholders have been architecting

the digital supply chain of the entertainment industry while producing a consumer experience like never before.

The entertainment industry continues to grow steadily across the globe but the underlying impact of decimated gross margins of digital content distribution has been devastating. For filmed entertainment, the revenue for the content holder is 1/15th for digital content when compared with physical; for broadcast, advertising revenue per thousand viewers per episode is 1/3; and, for newspapers the value per reader is 1/18th.

Today the pace of innovation in Hollywood to embrace digital content production and distribution may have Steve Blank, of Stanford University, altering his view that: *"The music and movie business has been consistently wrong in its claims that new platforms and channels would be the end of its businesses... The movie industry was born with a single technical standard – 35mm film, and for decades had a single way to distribute its content – movie theaters. It was 75 years until studios had to deal with technology changing their platform and distribution channel. And when it happened (cable, VCRs, DVDs, DVRs, the Internet,) it was a relentless onslaught. The studios responded by trying to shut down the new technology and/or distribution channels through legislation and the courts... When lawyers, MBAs and financial managers run your industry and your lobbyists are ex-Senators, understanding technology and innovation is not one of your core capabilities."*

Innovation Thru Collaboration

In an industry facing constant technology shifts, the executives have acted. Two of the oracles, Kevin Tsujihara taking over as the head of Warner Bros. and Amy Powell running the new TV division at Paramount, sent a message to the rest of Hollywood: "Go Digital or Die." They have a vision for Holly-

wood's destiny and it is not built on its glorious past. Hollywood considers the Internet as the ubiquitous, inexpensive distribution channel with global reach. The smartphone is its magic wand and social media and big data are ethereal. If content is king, it is the consumer the king listens to. Cloud computing storage is its enabler to innovate new business models and promote digital collaboration in the workflow from concept to camera to consumer.

Digital marketing in the entertainment industry has changed more in the past three years than in the previous 30. Dwight Caines, President, Worldwide Digital Marketing at Sony Pictures Entertainment and Michael Tritter, Senior Vice President of Interactive Worldwide Marketing at Warner Bros., have presented their respective visions and innovations in the digital makeover of Hollywood by deploying technology and establishing the B2C relationship. They believe that the social world — the billions of tweets, Facebook messages, blog postings, YouTube videos, other public data on the web, internal and external business data, and more — is a living organism with its own genome that has extraordinary DNA intelligence. Systems which augment proprietary business information (internal and external) with social media data reinvent the consumer relationship.

Leveraging entities, such as, people, chats, events, topics, products, locations and or-

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Editorial Director of the M&E Journal and Chief Strategist for MESA, Mishra is recognized as an eminent thinker and practitioner of supply chain management. An adjunct Professor of Decision Sciences at Pepperdine University, he has previously served as President/COO of such companies as LIVE Entertainment, VCL-Carolco, Lieberman Entertainment, and Technicolor Worldwide Media.

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Metadata Madness!

*The road to a standard is long and winding –
but is worth the effort.*

By Guy Finley, Executive Director, MESA



Everyone knows it needs to happen sooner or later. Everyone is working on it in their own unique ways. There is no doubt that the road to a new digital Hollywood will be paved with metadata.

Metadata greases the wheels of the content creation machine from production, to post-production and through distribution. A single metadata standard will advance the fluidity, timeliness and consistency of the supply chain across all studios and their business partners, representing an enormous opportunity for cost-efficiencies and collaboration.

However, despite all the efforts by a host of industry bodies, there is no such standard in sight. Each of the stakeholders along the entertainment supply chain has specific metadata needs. Besides, any metadata standard needs to be future-proof to anticipate the next inevitable upheaval to the entertainment supply chain status quo. This is complicated stuff and extremely hard work. Ultimate success comes with a fundamental understanding that creating a common metadata schema for digital entertainment requires cooperation from our upstream partners at the very point of content inception (think Guilds), into creation (think Unions, creatives and technology providers) and along through distribution (think solution providers, retail, broadcast and long tail). From the perspective of home entertainment, it also comes with a realization that what was once the “last step” in the content value-chain must now be a consideration in the earliest creative stages of production in order to maximize the long-term value of the assets and effect ongoing digital distribution efficiencies.

So What's the Next Step?

Unfortunately, the next step is accepting that this is going to be a many-step endeavor that is going to require patience, commitment and

ongoing communication between industry bodies and associations (DEG, ETC, EMA, EIDR, HITS, etc.), their working groups and respective constituents. It is our responsibility as an industry organization to continue to make meaningful connections between other professional groups and their members to work towards a collective common good. Yes, this will take considerable time but it is an absolute requirement if we are looking at global scale to deliver a substantial amount of digital pennies to replace those physical dollars.

In the meantime, there is plenty of other work that still needs to be done. For example, HITS (the Hollywood IT Society - which is managed by MESA) has created special interest groups (SIGs) consisting of technology and production executives of film and TV networks and broadcast divisions of the studios, that are addressing the real-world needs of bringing the multiple pieces of the production workflow into an interconnected network of software and apps to assist business units in all aspects of production. This group has its feet firmly planted on the ground to address the realities of supporting a digital business. By addressing simple, solveable concerns around new digital systems and tools like asset management processes both upstream and through archival, centralized risk analysis and management, localization automation, rights and royalties, these companies are dedicated to making a profound impact on their individual digital futures.

We don't need to boil the ocean! How about something as simple as creating a common lexicon of terminology so that everyone throughout the process (and across industry bodies and associations) is

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The Media & Entertainment Services Alliance was founded in 2008 to create efficiencies in the creation, production and distribution of physical and digital media & entertainment. Representing over 100 member companies worldwide, the organization produces events, newsletters, research, as well as this journal publication. Its industry initiatives include workgroups in digital and physical supply chain, 2nd screen, IT, content protection and anti-piracy. MESA is the management company responsible for the efforts of the Content Delivery & Security Association (CDSA), the Hollywood IT Society (HITS) and the 2nd Screen Society.

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The Digital Palette

The impact of today's digital acquisition and display technologies for filmmakers.

By Michael Brodersen, Chief Strategy Officer, FotoKem

Abstract: This article examines the roadmap of image acquisition, from pre-production to post-production, inclusive of the logistics of moving a file from one device to another via a variety of different formats and platforms. The article also looks at the various tools that should be in every company's digital toolbox.

The past few years have been an incredibly dynamic and interesting time in the world of image acquisition. The relatively clinical term 'acquisition' does not do justice to the art of cinematography of course, but is a term bandied about on a daily basis these days. "So what's your acquisition format?" has become a ubiquitous question in any respectable pre-production meeting, and from a post-production standpoint is one of the primary inquiries. Camera choice has implications down the entire chain of production, dailies workflow, media management, finishing, and delivery. The answer to this question has often become "we are using multiple cameras," which based on my experience means anywhere from two to 50 camera bodies. With upwards of eight or nine different models or brands (not including the visual effects department toolset), the process begins with a glorious collage of proprietary colorspace, recording for-

mat, frame rates, resolutions, codecs, and metadata.

Now, while this may present a challenge for us on the post side of things, I totally get it. The sheer variety of tools available to the filmmaker offers endless possibilities. Aside from a favored 'look' one can get from a specific camera type, the ability to mount tiny, high-quality cameras anywhere imaginable, capture extreme slo-mo or extreme high-res, capture low-light imagery, send 'expendable' devices into dangerous situations, simulate security cameras, video, infra-red, or nanny-cams are just some of the inventive approaches we've witnessed. New technology, camera firmware and software arrives at a blinding pace, offering constantly new functionality to filmmakers, often designed and implemented during the shoot. On the sidelines, one of our primary goals in post is to help create a seamless path from the image capture to dailies, editorial, conform, color and downstream ►



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On the sidelines, one of our primary goals in post is to help create a seamless path from the image capture to dailies, editorial, conform, color and downstream into archive and studio asset management systems.

into archive and studio asset management systems.

Ideally, the filmmakers shouldn't have to worry about the recording technology once things are initially set up, so they can focus on the logistics of shooting with these various devices. Aside from the standard challenges, the process of moving media from the camera into a management system is crucial. Media backup may or may not be possible on-set depending on the nature of the shoot, so managing camera media from a variety of devices can become a puzzle. The tried-and-true camera roll naming conventions have been largely adopted for managing digital magazines, and in some cases evolve into custom versions when the 26 letters of the alphabet just aren't enough. File-based cameras generating filenames with traditional 'single letter' camera rolls may or may not be flexible enough, so metadata paths must be created to ensure proper archive and retrieval down the line. Some cameras create duplicate file names and may not even have timecode or crucial metadata, essentially appearing identical to an editorial system. From a data management point of view this is the quintessential no-no, so procedures must be implemented to create unique fingerprints for these files. Much of this can be worked out during camera tests, sometimes known as the first week of production.

Display Details

Adjacent to the capture side, display technology is an important part of a complex equation. Monitors are on set, on-location, near-set, in editorial, in theatrical viewing environments, in the form of tablets, laptops, OLEDs, plasmas, LCDs, LED backlit LCDs, and projectors. Display choice directly impacts the viewing experience in a variety of ways, and the media types and methods of getting the image to the viewing platform implies a variety of outcomes. On-set, the camera type will often dictate the method of monitoring live images, or lack thereof. If the viewer is making a critical judg-

ment of color or exposure the monitor must be calibrated to SMPTE standards. Monitors being fed directly from cameras for the cinematographer, director, or on a DIT cart with live color controls, are often higher-end OLED technology calibrated to Rec. 709 or BT.1886 using high-end calibration equipment. The signal path is important, starting with what is typically an SDI feed from the camera. Most camera manufacturers have their own flavor of Log in addition to Rec. 709 outputs, while some can take 'look' files and apply it to the image before coming out the SDI tap. Many higher-end cameras systems will be offering an ACES log output in upcoming firmware revisions, standardizing the starting point in which to display what the camera is capturing live, before converting the RAW recorded files. Currently, Lookup Tables applied to the image are susceptible to video signal ranging values and each camera can potentially offer up different options from the display port. Legal, full, and extended video signals coming out of the camera into a live color system, with LUTs and CDLs being applied via an SDI feed on an OLED monitor will have to be matched to a demosaiced RAW file on a plasma or LCD screen in an editorial or dailies environment. Ensuring each acronym is implemented correctly is often a critical component when establishing the dailies pipeline. Once converted into dailies, the files will be seen on the aforementioned technologies by the filmmakers, editors, producers, and executives, all with a different focus or need.

File formats range from a variety of Quicktime codecs to editorial media to uncompressed files for visual effects, converted from a variety of transcode platforms, played through a variety of media players, and stream-

ing through a variety of services. That's a lot of variety. Maintaining a consistency of image involves understanding the display types and their limitations, and is not always controllable. The landscape of computers, monitors, and tablets people might be watching the image on introduce a large set of variables in color, contrast, saturation, black levels, and resolution. The good news is that there has never been more ways to present images in an efficient and secure way to everybody that needs access, as a healthy representation of the creative intent from the camera(s). Standards such as ASC CDL workflows and ACES greatly assist the communication necessary between facilities, and will be an increasingly important part of complex productions. The finishing stage greatly benefits from these standards, as interaction with editorial and visual effects facilities into the digital intermediate process translates the established intent directly to the fine-tuning process of color grading.

Evolving Landscape

The evolving landscape of high dynamic range, high frame rate, wide color gamut, and high resolution capture and display technology will continue to expand the digital palette for artists. Many of the digital tools are applicable to the treasured beauty of film acquisition, including the increasing use of large format negative, and the restoration or preservation of classic motion pictures, exposing never before seen detail from the original works.

It all adds up to an overwhelming amount of options, and sets the stage for a wonderfully collaborative relationship with filmmakers for years to come. ■



Michael Brodersen is currently serving as Chief Strategy Officer at FotoKem. With 20 years of experience in film, video, audio and file-based workflows, he has been actively involved in setting up systems and departments to address the continually evolving world of post-production and finishing. He has overseen the development of the nextLAB, a software platform offering services for file-based dailies, along with global data delivery, review and approval, and creative iPad applications.

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Driving Mobile Video with Big Data

Enhancing mobile experiences for consumers.

By Jason Keane, Chief Executive Officer, Saffron Digital

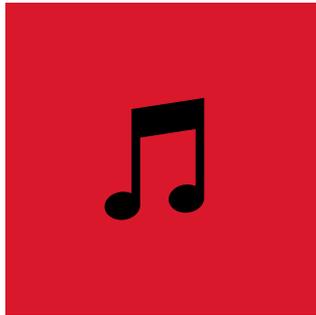


Abstract: Today's connected world is driven by one core tenant... data. Big data in fact. Big data generates personalized experiences for mobile video on a mass-automated scale. Mobile Video is a broad term that encompasses delivery to all connected devices, anytime and anywhere. Mobile devices, such as smartphones and tablets, are key access points for video, but increasingly consumers expect to be able to view content on any Internet-enabled device – such as game consoles or connected TVs. The whole idea defined by mobility is that you can consume what you want, when you want it. The consumer calls the shots 24/7.

Our role as a premium video service provider is to use big data to record those shots and use it to constantly refine and improve viewer experiences. The aim is to create an ultra-personalized product experience that cultivates a relationship, which is key in a world of time pressures and fickle tastes.

So, What is Big Data?

The common definition of big data usually includes data sets with sizes beyond the ability of commonly used software tools to capture, curate, manage, and process within a tolerable elapsed time. Big data sizes are a constantly moving target. Large volumes of complex data sets need to be crunched to improve personalized experiences that foster loyalty and drive



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The formula for success is common world-wide: deliver personalized experiences with relevant content that immediately captures the viewer's attention so they will come back for more time and time again.

average revenue per user (ARPU).

We collect hundreds of millions of analytics events on a weekly basis for our global clients, including KDDI in Japan, Sky in the UK and HTC in the U.S. and we have found that trends are not bound by culture, language or geography but by user experience. The formula for success is common world-wide: deliver personalized experiences with relevant content that immediately captures the viewer's attention so they will come back for more time and time again.

It is key that you marry big data analytics with robust and logical product development and marketing principals in order to innovate on product strategy and deliver the right content to the right user at the right time.

Since launching KDDI's VideoPass service in Japan in 2012, we have collected large amounts of data and examined a number of macro and micro principles that could better inform our product roadmap. Initial analysis highlighted some odd peak and trough behaviors. Upon further analysis we realized there was unnatural drop in playbacks during peak travel times. As VideoPass is a pure streaming service and when correlated with the exceptionally long commute times in Tokyo, the lead launch city, we used this data to drive a key roadmap decision.

To enable VideoPass subscribers to get the most out of the service during their commute we worked with KDDI to introduce offline playback feature. Users can now download a movie or TV show while they are in a Wi-Fi or LTE area and play it back offline, extending the peak service run-time by more than three hours. This simple feature addition enables greater content consumption, makes people feel they are getting better value for their subscription fee and, in turn, drives increased loyalty and reduced churn.

But product is only one part, the content mix needs to work too. Thus we use the very same data-set analysis and consumption trends to drive our content, CRM and merchandising strategies, which in turn drive heavier usage. If for example your data analysis revealed a much older demographic than you expected for your video service it could change your content strategy. Do you decide to build on that base with content promotions and merchandising that appeal to an older audience or try for a larger share of a less popular demographic by focusing your in-app and out-of-app marketing on a younger audience?

The answer is to let the data decide based on sound ROI economics and use targeted channels to satisfy that audience segment. Unlike traditional marketing channels, you can satisfy all audience needs in a digital environment from mainstream to niche. Understanding usage data and using it to deliver personalized content recommendations is agnostic of audience segments and far more results driven too.

Taking the VideoPass data analysis one step further we focused analytics on time-sensitive content recommendations, delivering users personalized content in two forms during the unique peak travel time scenarios in Tokyo. One was TV content, based on their taste profile, to consume during their commute, for which episodic TV content is a perfect short-form fit; and

the other was the ability to browse trailers and choose movies for playback on a larger connected screen once back in the home. The focus of both targeted approaches is to keep the user engaged at the right time, in the right environment and generate ROI in each case.

The Bottom Line on Big Data

Analytical outputs from big data are what should ultimately drive both the content and product strategy for any successful mobile video service. Get that right, tick all the boxes, and it will drive retention and increase acquisition for you and your customers.

As a global video platform service provider, analyzing big data to understand our customers' subscribers and increase their customer retention in turn helps drive our own strategy for new business and product expansion. It enables us to analyze data across multiple live services and countries and drive our own product roadmap and innovation accordingly. This in turn adds greater value for all our clients, which in turn drives new projects from existing clients and great case studies to win new ones.

The bottom-line is that you need a big data framework capability to analyze petabytes of data to enable the delivery of byte-sized, personalized user experiences that makes the user come back for more, evangelize your product and enable you to successfully generate network effect growth levels for the future. ■



Jason Keane is CEO of Saffron Digital, a global, multi-DRM, online video platform for the digital entertainment industry. Since joining the company in August 2011, Saffron revenues have grown 110 percent on the back of new product launches for HTC Watch and KDDI Video Pass in Japan. In this time Jason has spearheaded the launch of Saffron's next generation online video platform, complete with UltraViolet (UV) integration and a proprietary CFF DRM Secure Player.



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The Golden Age of M&E IT

Dealing with three-year business plans that are outdated after three weeks.

By Tom Moran, Senior Director, Media Services Division,
Savvis, a CenturyLink Company



Abstract: Technology moves at a blindingly fast pace and for a number of years CIOs and their IT organizations have been struggling to keep up. It's not just the smaller organizations, or those with resource constraints, who can't seem to stay ahead of the game. Even the behemoths of the tech industry such as Google, Facebook and Microsoft have in recent years made significant missteps with regard to the direction or pace of technological change and on which issues and ideas would be most important to consumers.

In my role at Savvis I have been fortunate enough to work with some of the best and brightest business and technology leaders anywhere and I have noticed something different about how media industry leaders are dealing with the ever increasing pace of change vs. how their peers in other industries approach those same challenges.

Issues such as security, privacy and time-to-market pressure, combined with users' rapidly changing expectations, have put significant pressure on CIOs to evolve how their organizations function. "We have to be flexible enough to rapidly respond to the needs of the business for things like new digital marketing applications, while at the same time being responsible stewards of our brand and our companies' assets," said Theresa Miller, CIO, Lionsgate.

Despite the fact that IT organizations are evolving, roughly 1/3 of marketing technology

spend circumvents around the IT organization according to Gartner analyst Laura McLellan in a 2013 webinar, meaning that marketers, developers and a host of others are buying IT products and services directly from the vendors, without the oversight of their IT organizations. But of course when it goes wrong "it is our job to clean up the mess," said Michael Keithly, CIO of Creative Artists Agency at the HITS Summit this past spring.

What were once year-long cycles for project planning, rollout and budgeting have been compressed by a seismic shift in user expectations. "Today you can go to the app store, download an app for 99 cents, and if you don't like it delete it and try another, and that experience has influenced our end users' expectations," said Keithly. Gary Davis, Senior Vice President of IT at RTJ Entertainment added that "The three-year plan is outdated after three weeks."

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Media organizations are shifting their focus away from the mundane tasks to enabling new business processes, improving old ones and providing them all at a much lower cost to the business.

So what does the new CIO and their IT organization of the future look like? As with many areas of business, the media industry is on the front lines of the major tidal wave of change. IT leaders who no longer have the luxury of command and control, yet have to deal with more sophisticated and numerous security threats, increased time to market pressure and an infinitely expanding market of tools and services, need to develop genuine creativity.

Luckily, creativity is part of the DNA of media companies, at a time when the technology leaders in many industries are being relegated to second tier leaders, as evidenced by the fact the 62 percent of them no longer report to the CEO (based on a 2013 Survey of 600 CIOs by *CIO Magazine*). Media companies are leveraging technology to push their business forward and embrace new revenue models, while at the same time continuing to offer compelling content and products through the traditional channels that their customers, and shareholders demand.

Scott Phelan, Group Information Officer at Warner Bros., discussed the need for the industry to capitalize on changing consumer behavior, new content platforms and value-added services through platforms like UltraViolet. Consumers are being more selective about what they purchase, and these new platforms allow studios to provide more compelling content.

When it comes to how organizations now deploy and manage infrastructure, they are increasingly using things like the “converged cloud” as it was described by John Herbert, CIO of 20th Century Fox at this same HITS Summit. Multiple Infrastructure packages and IT components now converge into a single computing platform to centralize the management of resources, consolidate systems, increase utilization, and lower costs. Pools of computers, storage and networking resources are shared by multiple applications and managed in a collective manner using policy driven processes. This is actually what many people are referring to when they use the term “cloud computing.”

We are at the start of a revolution in IT that will see a major shift to utility based models that provide us with technology resources in the same way that other utilities, such as power

and water, provide us with those essential resources. This new utility infrastructure enables an explosion of new cloud based applications in the same way the “App Store” enabled an explosion of new mobile apps.

“New data tools, especially in the area of mobile, provide us with capabilities that can be tremendously valuable in giving the business leaders specific, customized views into rich sets of data in ways that simplify their jobs and improve our performance as a company. This demonstrates to everyone the kind of value IT can bring when we all have a mutual understanding about the needs of business and the role IT can play in driving new revenue, as opposed to being viewed as just a cost center,” added Lionsgate’s Miller.

Going Golden

Entertainment is a vehicle to communicate and share culture and our culture is increasingly defined by the technologies we use and shaped by our access to information resources. Entertainment CIOs are leading the way in communicating this new landscape through their products, as well as enabling it within their own organizations.

Media organizations are ushering in a new “Golden Age of IT,” by shifting their focus away from the mundane—“keep the email running” kind of stuff—to enabling new business processes, improving old ones by leveraging new applications and technology, and providing it all at a much lower cost to the business than even just a few years ago. Consumers directly benefit from the technological advances within the major studios without even realizing that those studios are the ones driving change, instead being wowed by the consumption devices and media they consume.

Warner’s Phelan added how the Warner

Archive Instant service for archive titles is a compelling method for a studio to aggregate content while still maintaining strong relationships with distribution partners.

Media companies are maximizing the revenue potential in all areas of their business by making improvements in the digital supply chain that are enabling new distribution platforms and service models to proliferate and catch on with consumers. Cloud computing is a key enabler in giving new business models low startup costs and near infinite scalability if they catch fire; but, just as importantly the ones that don’t engage customers right away can be quickly turned down and their infrastructure redeployed in other areas.

Gone are the days when IT leaders budgeted for massive capital expenditures to support long-term projects to deploy large-scale systems. Technology is enabling the current generation of CIOs and IT leaders to engage with sales and marketing to enable new revenue streams, while at the same time maximizing the performance of the business by continually reducing the operational costs and increasing the flexibility of the core systems and legacy product supply chains.

IT advancements outside of the media companies, in areas such as consumer electronics and cloud computing, are being leveraged throughout the media industry, from social collaboration around ideas all the way to multi-modal distribution. IT leaders in Hollywood are leveraging these advancements in a much more visionary way than CIOs in other market segments. This vision, combined with a continual focus on execution in the “what have you done for me lately” climate of Hollywood, is a big part of the behind the scenes magic that makes Hollywood IT leaders some of the most respected in the industry. ■



Tom Moran joined Savvis Communications when they acquired the commercial business of Eagan, MN based WAM!NET in 2003. Having served as Director of the Media and Entertainment division of WAM!NET, Moran was promoted to Senior Director of the Media Services division of Savvis in 2005. As Senior Director of Media Solutions, he is responsible for corporate strategy, solutions architecture, business development, sales and market development for the media vertical markets on behalf of Savvis, a CenturyLink Company.

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Cloud Unleashes the Power of Creativity

Three rules for producing, managing, and distributing creative content.

By Steve Poehlein, Director of Media and Entertainment Solutions, HP Enterprise Services

Abstract: These are exciting times in media and entertainment as the industry continually pushes the boundaries of the viewer experience, from increasingly complex computer effects and animation to motion capture and 3D viewing, and extending to new mobile and social media applications.

Much of the traditional entertainment distribution business is an analytic and strategic exercise in windowing and differentiation. In short, this means extracting greater return through enforced scarcity or by delivering added value through one or another distribution channels or partners. This article examines how and why time-based metadata is becoming a critical strategic asset for content owners, and how it enables new forms of windowing and differentiation across the digital distribution landscape.

Media and entertainment companies continuously need to move huge, rich data files around the globe to make all of this “magic” happen. And that’s not just within their own organization or distribution medium, but

more and more with third-party creative partners — from color correction to sound editing to video touchup — that need to come together at a moment’s notice.

Cloud provides the agility needed for producing, managing, and distributing next-generation digital content — not just for storage and transport, but also now for rendering, encoding, transcoding and editing. It offers a more cost-efficient way to create, collaborate on, manage, access and archive this content. And it provides those capabilities in a collaborative, secured and controlled environment.

What Does Cloud Do?

Cloud provides numerous opportunities to drive business value for media and entertainment companies. It does this through:



■ **Productivity** — enabling media and entertainment companies to focus on developing their core business and reduce the diversion of technical resources to IT support organizations and facilities

■ **Agility** — quickly adapting to changing production demands as well as seasonal or event-driven consumption activities

■ **Flexibility** — providing the right level of infrastructure and software that can adapt to both the content creators' and distributors' needs

■ **Scalability** — adding and decreasing capacity as production volumes change

■ **Reliability** — housing production data in strong, stable, and secure facilities

Cloud lets filmmakers, animators, publishers, broadcasters, and other media and entertainment companies focus on what they do best — produce entertaining, creative, and immersive experiences for their customers. But

companies should follow three rules to successfully implement it.

Easy as 1... 2... 3...

In working with our media and entertainment clients, HP has found that success comes from following three simple rules:

1. *Keep your options open.*
2. *Seek comprehensive implementation.*
3. *Ensure the security of your creative content.*

Rule 1: Keep your options open

Media and entertainment is a broad and expanding stage. And every player is unique. Therefore, cloud solutions should be tailored to meet the specific demands of each business by leveraging the most appropriate aspects of private and public cloud architectures, as well as legacy IT investments. HP is committed to the hybrid approach. That's why our cloud offerings are open and standards-based.

As a company, HP has already helped

many customers transform their IT environments to hybrid cloud environments so they get their cloud, their way. We have a proven methodology for doing so, with everything from content ingestion to management and delivery. This provides simplicity, speed, reduced cost and risk, and compliance.

Rule 2: Seek comprehensive implementation

Moving to a cloud environment takes time and must be done right. Once the direction and vision is in place, a comprehensive approach should be mapped out in a quarter-by-quarter adoption and maturity plan. Cloud delivers wide-ranging benefits to the media and entertainment enterprise, but it must be blended with existing infrastructure and software assets. The migration needs a comprehensive approach for implementation that meets the requirements of the business.

Our approach to cloud integrates information plus applications plus infrastructure to provide services anywhere. For us, it's about integration. That enables us to deliver one common experience across all deployment models of a hybrid environment — from traditional IT to private, public, and managed cloud. Clients can pick the delivery model, at the right time and at the right cost.

Rule 3: Ensure the security of your creative content

Given industry concerns over content piracy, companies require comprehensive solutions for securing their intellectual and creative property. Only management and security solutions that span information, applications, and infrastructure can ensure that the cloud is safe.

We provide security and compliance solutions for modern enterprises that want to mitigate risk in their hybrid environments and defend against advanced threats. Based on our market-leading products, including ArcSight, Fortify, and TippingPoint, the HP Security Intelligence and Risk Management Platform uniquely delivers the advanced correlation, application protection, and network defense technology to protect production and distribution applications and

CLLOUDCONNECTIONS

IT infrastructures from sophisticated cyber threats. The same technologies enable our managed cloud security services, which offer security as a service, for clients who prefer not to implement the technologies themselves. Further, our experience in building private cloud environments in the industry is unmatched.

Who's Moving to The Cloud

HP has been working in partnership with several major media and entertainment companies to help them enhance content creation and distribution using cloud:

- 20th Century Fox partners with us to deliver converged cloud digital enterprise
- London's Deluxe Digital selects HP to transform film distribution process to cinemas
- HP helps DreamWorks Animation's "Turbo" race into theaters

Our strategic alliance with DreamWorks Animation provides a good example of how cloud delivers rendering power to computer-generated animated film production. DreamWorks Animation pushes the limits of what is visually possible with every new film. But as artists envision more stunning effects, rendering requirements test the studio's computing capacity.

The DreamWorks Animation film "Turbo," for example, required 75 million render hours to create fully realized images, including 32 Indy 500 race cars and 32 million crowd character instances. DreamWorks Animation requires their technology resources to have the flexibility to meet the needs of their artists in order to deliver a digitally stunning movie and keep production progressing on the 10 films in their pipeline.

With a flexible, hosted compute solution, DreamWorks Animation has the

high-performance computing power to get dynamic capacity when they need it. For instance, over the course of the production cycle, 12 percent of "Turbo" was rendered in the cloud. With HP, DreamWorks Animation used a cloud solution that works best for their needs and helps avoid a costly data center expansion. It has the agility and flexibility to deliver storage, compute, and resources in a way that can quickly meet demand and capacity.

DreamWorks Animation can rapidly adjust to satisfy dynamic needs and focus on what they do best — making amazing animated films. DreamWorks Animation now says "yes" to more films, more delighted audiences, and even greater IT optimization.

Delivering New Levels of Power

The strategic alliances that we have forged with DreamWorks Animation and other leading media and entertainment companies help deliver the high-performance computing, continuous availability, and streamlined management capabilities artists and engineers need to create the highest-quality picture possible. To learn more, visit www.hp.com/go/media. ■



As the Media and Entertainment Solutions practice lead for HP Enterprise Services, Steve Poeblein leads the Center of Excellence to provide strategy and solutions as well as the development of service offerings to support the creation, management, and distribution of content for the media and entertainment industry. Steve brings more than 20 years of experience in the media and entertainment industry to HP



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introducing social networking technologies so that team members and colleagues can build a knowledge network as well as connect on professional and personal levels creates a social business infrastructure within the organization.

Social Media Solutions

The implementation of a social business platform will not eliminate the way individuals currently work and companies need to be weary of the individuals that predict a social media/social business solution will eliminate complexities and woes of email. These prognosticators are the same individuals that predicted the CD-ROM would end all printed material and that eReaders would be the death of printed books¹ However, a social media solution for your business can contribute to better collaboration and can offer employees improved ways to search for information leading to them becoming more efficient in how they work. According to Gill, a 10 percent increase in efficiency in which workers could search for information easily would buy back more than two workweeks per year per employee.²

Although the notion of implementing a social business platform appears great, a company looking to inspire connectedness will face challenges in what type of information its employee community will share in a social business platform medium. A possible legal and compliance quagmire of concerns for any company is how do we control what users post and discuss without impacting adoption and usage. Additionally, how does a company change the way in which people currently work; will employees embrace being social or will they feel that big brother can easily monitor their conversations now that the information is available to the entire world?

A large satellite TV provider wanted to address the challenge that many companies face, improving employee productivity as well as increasing engagement among employees. The challenge the company faced was to implement a solution given compliance, legal and security concerns regarding the types of confidential information that could and would possibly be shared. Also a solution needed to ensure that the Legal and Security

teams could investigate information and conduct forensic activities, all data needed to be discoverable. Additionally, the HR team had a concern as to how to ensure adoption and to avoid the assumption that individuals would automatically gravitate to using a social site. A common concern voiced by many managers is: How do we ensure employees are not using the tool for goofing off and ensure they are being productive and getting work done?

As the project manager I facilitated the product research, vendor assessments and establishing business use cases that allowed the leadership to pick the appropriate social business platform that would allow its employees to engage in discussions and create blogs, social groups and professional profiles around business activities. The goal was to make a large company appear smaller, increase collaboration and engagement, remove silo conversations from email to a shared portal so that employees could easily search information and allow employees to search for resources based on skillsets and knowledge offerings. Additional findings during research and evaluations were that social business software alone would not meet all the company's needs. The organization would need to integrate a robust document management system in order to ensure confidentiality some groups needed for their content and to adhere to the organization's data retention policies.

Challenges and Opportunities

In order to implement the social business platform solution, the team focused on creating a Governance model that addresses the compliance and legal issues, which included expanding the terms of use and policy for corporate collaboration mediums. The stakeholders also became aware that the risks that they were identifying as possible problems with implementing a social collaboration platform were some of the same risks that employees could take with email, i.e., emailing private red data or company confidential information. Although companies may have technology that prevents confidential data from leaving the company, these tools are not 100 percent failsafe and a large part of

protecting company information is informing employees of what they can and cannot share. The way in which a company communicates the standards and policies to its employees is a key factor in protecting data. Additionally, the project team researched the capabilities of a solution to address legal and security concerns and realized that any social business platform would need to be buttressed with a tool that focused primarily on helping companies conduct eDiscovery.

Once a social business solution is implemented that does not mean it will automatically be adopted by the organization. The project team along with the business had to focus on: How do we change the way people currently work, what training should be provided and how do we guarantee a certain level of adoption? The organizational change approach the project team took was to focus on individuals who would be the "early adopters," which we identified as groups presently using forms of collaboration. We identified groups that had external blogs or were using shared network drives to collaborate on documents. For these groups we just introduced a new tool that would allow them to collaborate in a central location. The training for the early adopters was focused on how to conduct searches on content we exported from their external blogs and shared network into the new social collaboration platform. Key to getting early adoption was getting executive leadership engaged by having them write their group or team updates in a blog versus their weekly or monthly executive emails (changing the way executives work). This drove traffic to the platform and employees, much to the surprise of executives, commented on the executive blogs.

A social media solution is not a means to an end in to increasing work productivity to 100 percent, but what it can do is usher in the possibility of introducing a new way for employees to work and connect. Allowing employees to connect to, share with and learn from their global enterprise colleagues and linking to information they would not have access to otherwise does lend to having a more connected enterprise. ■

(1) Mark Zuckerberg says that email's end is nigh: <http://www.guardian.co.uk/commentisfree/2011/nov/27/john-naughton-mark-zuckerberg-email>

(2) Barry Gill, E-mail not dead, evolving: <http://hbr.org/2013/06/e-mail-not-dead-evolving/>



Carmen Cannon is a Practice Manager at Prosum Technology Services company. She has over 17 years of experience in information technology with a program and project management specialty. She has worked with many Fortune 500 companies implementing and managing large-scale initiatives in integrating ERP and CRM systems to web front-end solutions. As part of the EPPM Practice at Prosum, she manages the social media and social business projects for Prosum's clients.

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Abstract: Content identification technologies have long played a critical role in the Media and Entertainment (M&E) industry. Watermarking content with unique identifiers, for example, has made copy protection and consumption tracking efforts simpler for advertisers, content owners, distributors and rights owners. Use of content identification technology has always been powerful, but has historically been employed only by niche segments of the industry. In recent years, however, as media consumption and interaction have become an increasingly Internet-connected endeavor, content identification technology is undergoing an exponential adoption rate, proving to be the critical infrastructure upon which all sectors of M&E are innovating—from film, to television, to the buzzed-about '2nd screen.'

Making the Case for Content Identification Technologies

How content identification technologies are powering M&E's

Internet-connected future. By Andy Nobbs, Chief Marketing Officer, Civolution

Examining the film industry, 'Premium VOD' — where movies are released on demand while still within their theatrical release windows — has been a puzzle stymying the industry for some time. Feature film content is at its highest value during this exclusive first-release window, and therefore has long been a prime target for pirates who illegally distribute content. For this reason, Hollywood has called on content identification technology to provide a robust layer of piracy deterrence during the vulnerable and critical theatrical release window. Content identification technology allows for unique watermarking protection at the set-top box level (Civolution has integrated the technology on millions of set-top boxes in the U.S., for

example) to ensure the security of content during this release period, and to track illegal distributions back to their source. Looking toward the future, Over-The-Top (OTT) Premium VOD is inevitable, as consumers increasingly demand premium content of all types on any and every screen they own. In 2012, for example, the share of all hours spent watching online video on tablets and mobile phones grew 100 percent (*Ooyala*

Global Video Index). Content identification implementations for these OTT streams will enable this avenue of consumption to be fully realized by distributors, providing piracy protection in the same way that they have proven to do so in the pay-TV space.

Content identification is playing a critical role in the rapidly expanding smart TV space, as well. The term "smart TV" has been broadly used to describe the integration of televi-



Andy Nobbs leads Civolution's marketing and communication activities, after having dedicated most of his time for over the past four years to the company's sales activities. Prior to Civolution, Andy was President at Teletrax, the world's first global broadcast intelligence service, where he oversaw all aspects of the company's worldwide activities including strategy management, business development, operations, and sales and marketing.

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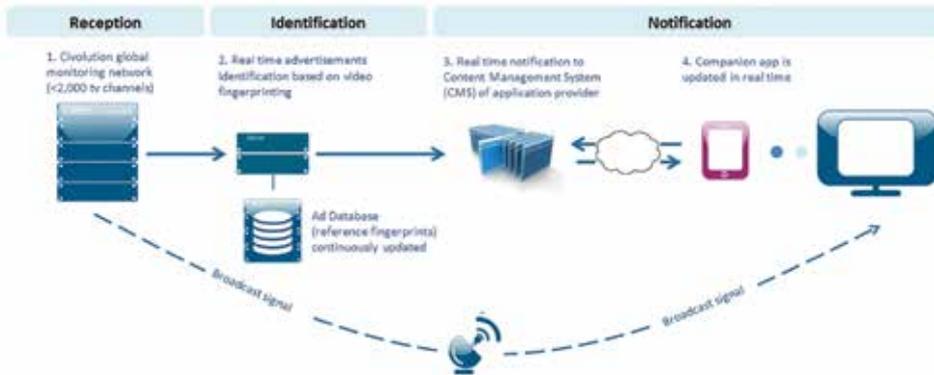


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Ad Flow



This chart maps real-time ad recognition and triggering.

sion, the Internet, and applications. Internet-Protocol Television (IPTV) market share is expected to increase from 11.5 percent last year to 18 percent in 2018, with projections of \$53 billion in revenue (ABI Research). What will make these IP-connected smart TVs truly “smart,” however will be the manner in which the active Internet connection is used, beyond simply distributing content. Connected televisions can provide the first truly comprehensive, direct, two-way communication between a content distributor and content viewer, and content identification technology provides this new breed of television with the ability to recognize the content being displayed in real time, pinging Internet-connected servers to trigger a myriad of services, including bonus content, interactive overlays, and extended advertising. From this foundation of being able to identify and react in real time to displayed content with no action required on the part of the viewer—or better yet: proactively anticipate and automatically execute additional actions the viewer would like to take — will make the “smart TV” generation of devices truly “smarter.”

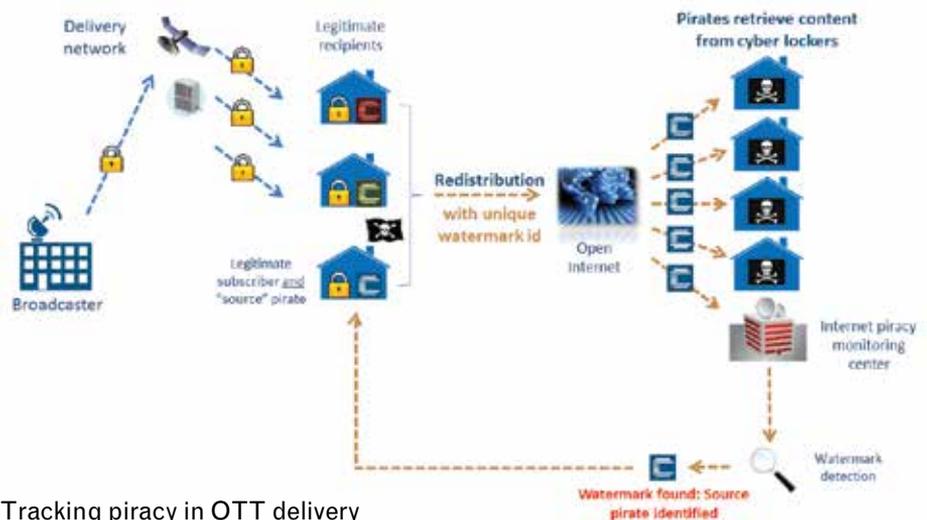
Thus far, we’ve discussed how content identification can enable direct consumption of film content in Premium VOD and unlock new features and services on the primary screen via “smarter” smart TVs. A third area where content identification is fueling massive innovation in the M&E industry has been on the “2nd screen.” Already, 85 percent of smartphone users show 2nd screen behavior at least once a month, over 60 percent on a weekly basis and 39 percent on a daily basis (*Business Insider*). Much in the way content identification is a foundation upon which new Smart TV services will develop, the same has already proven true on smart devices such as

smartphones and tablets, whether ubiquitous 2nd-screen platforms such as zeebox and ConneCTV that work for all channels and programming, or bespoke experiences (think *The Walking Dead*) enabled by companion apps designed for specific tentpole programs. As this 2nd screen space gains its footing, not only will the consumer experience need to be first rate, but the experience for advertisers will need to be first rate too. The current landscape for advertisers looking to distribute their marketing messages across multiple screens is highly daunting; major brands that want to reach consumers across devices that are complementing the primary TV screen are required to make multiple versions of their marketing messages for each platform they want to advertise on. Content identification technology providers such as Civolution have been working with ad management platforms

to enable advertisers to make a single piece of creative — and single ad-buy — to then distribute across all “2nd screen” platforms simultaneously. Content identification is the underlying trigger that makes such technology standards possible, and implementing these standards will be essential for the nascent 2nd screen industry to reach scale and become a viable advertising — and, therefore, a viable content — ecosystem, already with projected annual market size of \$8 billion to \$12 billion by 2020 (*MediaPost*).

Content identification technologies have long played a pivotal role in the M&E industry: providing the infrastructure for innovation, as we’ve seen with Premium VOD; fueling present expansion, as exemplified in the high-growth ‘2nd screen’; and launching its future, as the trajectory of smart TV capabilities foretells. The rapidly growing adoption of connected devices used to consume and interact with media and entertainment content is now allowing content identification technology to reach its full potential. ■

Pirate’s Treasure



Tracking piracy in OTT delivery



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Accelerating the Adoption of HEVC Across the Video Value Chain

Deciphering the details behind this ground-breaking technology.

By Kanaan Jemili, Senior Vice President, Product Management, Rovi Corp.



Abstract: High-Efficiency Video Coding, or HEVC/H.265, is poised to become one of the most ground-breaking technologies to hit the digital entertainment ecosystem this decade. Since its ratification as a standard this spring by the ITU-T, companies across the digital entertainment industry have hit milestones showing the viability of the technology.

At this year's French Open tennis tournament, a demonstration of a live broadcast deploying a new compression standard took place, delivering high definition video to multiple screens. This recent technology feat is based on HEVC's ability to deliver the same visual quality as Advanced Video Coding (AVC) or H.264/MPEG-4 while using about half the bandwidth. HEVC will enable content distributors to deliver HD video to mobile devices over cellular connections at reduced bandwidth costs, as well as provide stunning 4K and 8K video to the home. This will bring benefits across the video value chain from content creation to the consumer, helping drive new revenue streams, and demand for

high-quality multi-screen delivery.

For consumer electronics (CE) manufacturers, HEVC could also usher in a new wave of hardware upgrades that could prove profitable to the sector. Ultimately though, HEVC is great for consumers, providing them with a better entertainment experience that includes higher-resolution, and less buffering as video is streamed more seamlessly to all their devices — even over limited bitrate connections. HEVC's quantum leap in compression also means that consumers can store more home video, as well as hundreds of hours of entertainment and movies, while likely saving money in the process.

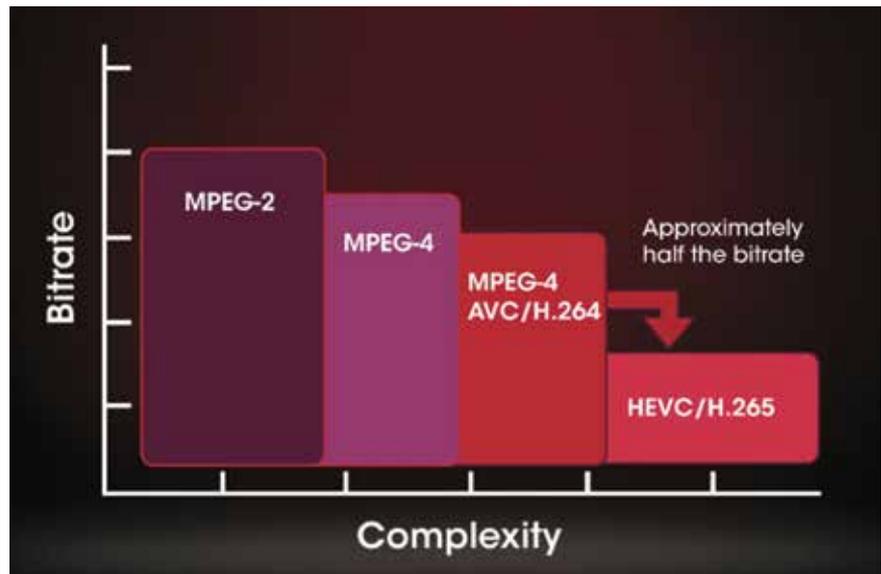
Yet despite the many advantages that it brings, HEVC is currently facing a classic chicken-and-egg dilemma. HEVC adoption has stalled due to the scarcity of content and the lack of players. Content distributors don't want to invest in a new technology

without a significant installed base. Vice-versa, CE vendors don't want to support a technology with very limited content available for playback. There's a shortage of HEVC-compatible content because there's a shortage of HEVC-compatible players. And there's a shortage of those players because there's a shortage of HEVC content.

As an industry, there are several steps that can be taken to help accelerate HEVC adoption and bring the benefits of its technology across the ecosystem, driving more content as well as compatible playback devices. The key will be to simultaneously deliver tools for content creation as well as the decoders needed for building support into devices. At the same time, ensuring compatibility across the video value chain will be critical as well — not an easy feat given that not all HEVC video will be created the same. Nonetheless, there are ways to fuel HEVC content availability, drive device support and help mitigate the risk of playback incompatibility. The following is a look at how this might come together to drive acceleration of HEVC for the benefit of the industry and the consumer.

Starting with the Consumer

The development and release of simple and free Windows and Mac software applications that enable consumers to convert personal content into HEVC video will help accelerate the adoption of HEVC. By providing consumers with the benefits of HEVC firsthand, they will see themselves how improved compression can streamline video sharing as well as lower storage costs. In addition, the ability to convert personal media into HEVC provides greater format awareness while also fueling HEVC content availability. And, as consum-



Charting the complexity of bitrate for various file types.

ers continue to look to multiscreen playback of their video, this will help drive demand for HEVC support across devices.

Simplify the Conversion

At the professional level, one of the keys to motivating content owners and distributors to convert their vast premium entertainment catalogs is to make the process as efficient and cost-effective as possible. The ideal encoding solutions for this market segment therefore need to be highly automated and simplify many of the complex workflow challenges otherwise associated with encoding large libraries of premium entertainment.

Enable Digital Delivery

Given the rise of digital delivery, new HEVC encoding solutions will also need to streamline the preparation of video libraries for digital delivery. As different over-the-top service providers use different streaming formats, an ideal HEVC encoding solution would enable

the output of a movie in a variety of advanced adaptive formats such as DivX Plus Streaming™, Apple HLS, or MPEG-DASH, simultaneously.

Ensure Quality Control

Quality is fundamental to Hollywood studios and as such, professional HEVC encoding solutions need to also offer a quality control workflow that allows editors to fine-tune specific sequences so that consumers see the movie as it was intended by the creator. As speed is critical, these controls will need to allow segment re-encoding, so that only the content changed would need to be re-encoded rather than the entire title.

More Device Support

An increase in the availability of quality software and hardware decoders is sure to result in an escalation in device support. The imminent opportunity today for HEVC is to

Continued on pg 121



Kanaan Jemili, Ph.D. joined Rovi in 2011 and has over 20 years of product and business development expertise in audio, video, media and consumer electronics technologies. Under his leadership, Rovi has released market-leading solutions in the areas of video delivery, guidance and discovery, as well as multiscreen. Dr. Jemili holds a Ph.D. degree of Electrical Engineering from the University of Dayton.



A Three-Pronged Approach to Streaming Strategies

High quality video streaming inspires loyalty, drives engagement and affects the bottom line.

By Noreen Hafez, Senior Product Marketer, Akamai Sola Media Solutions

Abstract: This article examines consumer behavior related to online video consumption, and how their evolving habits can have a direct impact on traffic, advertising and financial opportunities.

While the tech savvy have been consuming online video for more than a decade, the rush to mainstream online media viewing kicked into high gear when broadcast-sized audiences logged on to view the 2008 United States Presidential Inauguration of Barack Obama.

Since that time, providers and producers of online media have seen spikes associated with international and national sporting, news and entertainment events. Equally as many are watching scripted and unscripted television programs and films as networks make content more readily available.

In fact, according to a June 2013 ComScore report, 87 percent of Internet users in the United States watch video online. Internationally, Cisco predicts, that by 2016 video will represent 86 percent of all consumer Internet traffic as 1.2 million minutes of video will travel the Internet every second.

That demand – 40 billion content videos consumed every month – is a boom for providers in terms of advertising dollars and subscription fees charged. Netflix alone boasts close to 28 million subscribers; Hulu Plus will hit 2 million in the next year. Given the monthly subscription rate of \$7.99, these two companies are earning approximately \$240M per month.

At the same time, as viewers are getting more used to watching video on their phones, tablets and connected devices, expectations for high quality (up to 1080p) and seamless streaming are the new norm.



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A stream quality dashboard enables both the provider and distributor to analyze and maximize bitrates and server loads so that a viewer has a consistent, high-quality experience while watching.

For providers not able to deliver, the cost can be devastating as the amount of competition in the marketplace grows and consumers find wider access to video content. A recent Akamai study pointed out that only 8.2 percent of viewers would return to a site within 24 hours of experiencing a video failure. Many more will not return for up to four weeks after a negative experience.

Moreover, the report suggested that consumer behaviors could be summarized into the 2-Second Rule — where viewers will abandon a video if it takes longer than two seconds to begin playing. Additional studies have shown that six percent of an audience leaves for every second of delay and after 10 seconds of delay, more than half the audience moves on.

Today, the potential annual loss to providers is at least \$2M in ad revenue alone. Just as the number of users has grown in the past five years, the potential loss of revenue will grow exponentially.

The key to maximizing the opportunity, and realizing the financial opportunity, is delivering a high-quality experience from click to credits.

STEP 1: Finding The Space

Any workflow solution that a provider selects needs to include an easy way to upload content, ensure it plays across a multitude of devices, provide extensive server population to put the content closest to the viewer and offer a robust set of analytics tools.

Continuing the age-old computer rule of garbage in, garbage out, providers need to pay special attention to how content is ingested and coded for playback across an extensive array of platforms and devices.

One of the most effective ways to accomplish this is to find a distributor that offers scalable, secure and redundant cloud storage. Also, that distributor needs to be able to replicate that content and share it amongst geographically diverse sites. By making that decision, providers are assured that their content is secure from loss and can be delivered quickly to users upon first click.

STEP 2: Preparing for Playback

Once stored, content needs to go through a streamlined authoring and packaging process,

wherein files are made device-ready and optimized through transcoding to address the specific needs of different devices and networks. To this end, video can be played on-demand, at the highest definition with minimal start-up time and interruptions.

This step becomes increasingly crucial as manufacturers continue to roll out new products available to play video. Transcoding offers distributors the ability to provide smooth playback across any connected device — Android to iPhone, Xbox to Roku, Apple TV to laptop — by creating several renditions of a file in multiple bitrates and quality levels.

STEP 3: Last Mile Bandwidth

Of course, proper preparation merely sets the table for seamless delivery. While distributors do not have the ability to control the devices used or the speed of the network during playback, they can ensure the materials necessary for a satisfactory experience are as close to the end user as possible by selecting a distributor that has servers in locations around the globe.

A distributor with servers available around the world and an intelligent network solution allows providers access to better performance as upload and download speeds are spread across the network more efficiently, and the network is more reliable and secure. There is the ability to scale provider demand from a few GBs of content to many TBs without interruption or space reallocation.

Having last-mile bandwidth increases the chances that users will avoid frustrating buffering and re-buffering during playback, view video in high definition and remain loyal to that provider, be it a news channel, premium network or content aggregator such as Netflix, Hulu or Amazon.

Further, a distributor with a large server infrastructure spread over the globe will be better prepared to scale quickly for spontaneous news, sports or entertainment events that

viewers want to be able to see immediately. Many providers, in fact, view this as a *must* and not a *luxury*.

STEP 4: Quality Control

The final component is a robust set of analytics tools that accomplish two things: monitor stream quality and track viewer engagement.

First off, a stream quality dashboard enables both the provider and distributor the ability to analyze and maximize bitrates and server loads so that a viewer has a consistent high-quality experience while watching.

Again, this type of insight is crucial to providers looking to create loyal viewers who return because they trust the stream to be consistently high quality.

Secondly, analytics enable providers to see exactly how engaged viewers are, where abandonment rates spike and how effective its media strategy is throughout the day.

For instance, a publisher needs to know that the 30-second-pre-roll advertisement that plays before every video is driving viewers away at a record pace. Alternatively, a publisher needs to understand that a viewer may tolerate a 15-second ad in the middle of a reality show stream and can therefore plan its media strategy appropriately.

Finally, in order to plan what content to offer, providers need to know what their viewers are watching and on what devices. An analytics tool that measures what people watch and where helps determine what types of programming they should produce and where in the world they should store the content for smoothest delivery. It also helps to determine marketing strategies and budgets as competition among providers heats up.

When utilized holistically, this three-pronged approach gives providers the workflow and platform to deliver a high-quality video experience that inspires confidence, loyalty and can deliver increased revenue. ■



Noreen Hafez is a Senior Product Marketer for Akamai Sola Media Solutions, bringing more than 15 years of product marketing, product management and sales experience. At Akamai, she creates positioning, manages GTM strategy, messaging and sales tools, while serving as a product expert to the field. Prior to Akamai, Noreen was at Microsoft where she was responsible for marketing their TV/Video network.

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Digital Innovations: A Progress Report

An update on the pervasive methods used to access

entertainment content today By Juan Reyes, Chief Technology Officer, BluFocus

Abstract: Consumers today have a wide variety of methods for accessing entertainment content. The innovations that have taken place in the area of devices and services for accessing entertainment content have changed drastically. Whether a consumer wants to listen to music or watch videos, their ability and methods to access it are vast and continue to expand.



The methods and capabilities that existed in the early days of accessing and using digital media were much different than they are today. For music, if you wanted to hear your favorite music on the road, you either used an mp3 player or different format digital media player. This player was typically an iPod or some other branded digital music player. You either had to purchase songs from an online music store and download them or you ripped them from your CDs. You could then listen to your digital music files on your PC or take them with you by copying them to your iPod or digital music player. For video, there weren't too many options for digital video playback other than watching videos on your PC or laptop. Sure you could watch something recorded on your DVR or a VOD selection from your set-top box, but through these means you were limited to watching it at home. There really wasn't a good way to take your videos with you unless you were planning to watch a DVD

or Blu-ray movie on your laptop and took the disc with you or had a creative way to 'back up' your DVDs as digital files that you'd copy to your laptop.

Move forward to today and consumers now have a plethora of options for accessing and playing entertainment content. In fact, nowadays you don't even have to own it to enjoy it. For music, it's easy to store your purchased music as mp3 files as you did before. But now not only can you store it on your PC, laptop or digital media player, but you can also store it on your mobile phone, tablet, or store them in the cloud. This means you can either take your music with you anywhere or access it anywhere. But it doesn't stop there.

Today consumers also have the ability to stream music from a wide variety of sources. There are music streaming services like Pandora, Spotify, Rhapsody, iTunes Radio, Google Play Music, Twitter #music, iHeartRADIO, Rdio, 8tracks, SiriusXM, Grooveshark, Last.fm, TuneIn and many others. No longer are consumers limited to the songs they own. They can look for songs they want to hear and start listening to them almost immediately. Some of the services are free and some are subscription-based. Regardless of the service, you can have instant access to just about any song at any time without the need to purchase it. This begs the question: Are people more prone to stream or purchase their music? Why pay when you can just 'play'? We could look at trying to answer that today only to find that in one, two, five, or 10 years from now, the entire dynamic of how consumers access music could again change.

Now Let's Talk About Video

How are consumers accessing their favorite movies or TV shows? With the growth of smartphones and tablets, consumers are turning to those devices more and more for their entertainment needs. It's easy to sit at the TV and peruse the guide from your cable box or look at your list of recorded shows and pick something to watch. Or you may have a Blu-ray or DVD that you want to watch so you pop the disc into your player and you enjoy. These methods were the more traditional way of watching your movies and shows and they still go on today. However, we now also have the ability to stream video content. As with music, there are a large number of OTT (over-the-top) services that

provide streaming and/or download such as Netflix, Vudu, Hulu, UltraViolet, Crackle, iTunes, Amazon Prime, CinemaNow, Redbox Instant, EPIX, Google Play, Xbox, PlayStation, and others. Some of them offer the ability to download videos you purchase or rent, some offer streaming for videos you purchase, rent, or subscribe to, and some offer both.

These are just the services that are available to consumers so they can access music and video content. What about the devices? For most of these services, apps exist that can be run on a wide variety of device types. This gives the consumer many choices. Some of the different device types include:

- SmartTV
- Smart Blu-ray Player
- Smartphones
- Tablets
- PCs and Laptops
- Streaming Media Boxes
- Gaming Consoles

Each of these device types offer a wide variety of products from different manufacturers. One major area to note here is the SmartTV. The growth in the area of the SmartTV is quite significant. Market research released by IHS earlier this year stated that there was a 27 percent increase in the number of SmartTVs shipped in 2012 compared to 2011. The same report also indicated that in 2015 it is expected that 55 percent of all TVs shipped worldwide will be SmartTVs. For those consumers that aren't ready to go out and purchase a SmartTV just to give them the download and streaming options, there are also the options of Smart Blu-ray Player, Streaming Media Boxes, or Gaming Consoles that can be connected to a TV and provide many of these OTT services.

For many consumers, this is a much more cost-effective solution when compared to the price of buying a new TV. Today you can get a Smart Blu-ray player for under \$100 and Streaming Media Boxes for less than \$50. In regards to streaming media boxes, Apple currently holds the biggest percentage ac-

ording to a recent Frost & Sullivan report which states that Apple TV makes up for 56 percent of all streaming devices. Early this year Tim Cook, CEO of Apple reported that 13 million Apple TVs have been sold to date. Of those 13 million half of them were sold in 2012. Roku comes in second with a 26 percent share of all streaming devices sold. Regardless of the device, consumers are using a variety of apps on these devices to access video content at home independently from their cable or satellite provider.

Mobile Multiples

What about accessing content away from home? Consumers want their content anywhere and anytime. This is where smartphones and tablets come in. Using your smartphone you can watch your downloaded or streamed content anywhere. Using your tablet, you can also access content you've downloaded or wish to stream provided you have an Internet connection. For travelling, a tablet seems to be a very practical solution. Having been on many international flights myself, as I walk through the aisles several hours into a flight, I see many people watching movies on their tablets. Rarely do I see someone watching a movie on their laptop.

So what does this all mean?

Are consumers adopting to the new technologies and running with them? Or are consumers moving forward, trying to find better ways to access their content, causing technology companies and content owners to not only try and catch up but predict where they will go next? How will consumers access their digital content in five or 10 years? We don't know, but we need to keep moving forward and look for new avenues for providing the consumer with entertainment content how they want it, when they want it, and where they want it. Will there be new types of devices? Will there be new delivery models? Will there be new content formats? The only thing we know for sure is that there will be consumers who will want it all and it is up to us to deliver it to them. ■



Juan Reyes is the Chief Technology Officer for BluFocus Inc., a quality assurance and certification facility based in North Hollywood, CA that specializes in entertainment technologies such as Blu-ray, DVD, Digital Media, Apps, Web, 3D, Broadcast, and more. Juan has been a technical professional in the Entertainment Industry for almost a decade.



Integrated Ad Platforms for Networks

The practical constraints to adopting a cross-platform advertising strategy.

By Subhankar Bhattacharya, Global Practice Head, Media and Entertainment,

HCL Technologies and

Neha Lamba, Sales Director, HCL Technologies

Abstract: It took 38 years for radio to reach a user base of 50 million. The iPhone took 2.8 years to reach the magical 50 million user mark. The iPad in contrast took just 80 days to reach the 50 million user-base milestone. According to comScore, in February 2013 U.S. consumers spent 467 billion minutes on the accessing the Internet from a desktop, 308 billion minutes on smartphones, and 115 billion minutes on tablets. These are astonishingly high figures for devices that are relatively new to the marketplace. While consumers tend to use mobile throughout the day, data shows computer use is slowly getting shifted to office and tablet is becoming a predominant platform for at home use. Slowly but surely, multiplatform content consumption is becoming a three-way game among smartphones, tablets and TV. Unfortunately, the monetization platform for content, particularly for the TV industry has not geared up to match this cross-platform consumption pattern. This is particularly true for advertising where the age-old tradition of matching fixed set of demographics with commercials are always at clash with hyper-analyzed behavioral segmentation and targeting in the interactive world. This article analyzes the practical constraints to adopting a cross-platform advertising strategy and a step-by-step approach to addressing the same.

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That the traditional business model of the TV industry is being changed due to a disruptive intermediation by digital media

is not new information. In the past decade we have seen a rapid proliferation of smart screens among consumers and research shows that mobile phones and tablets are fast replacing desktops and PCs at home as the secondary device for content consumption. By 2015 the global shipment of tablets is expected to take over that of desktops and portable PCs with the inflection point arriving even sooner in some markets like the U.S. and UK.

Growth of social networking as well as the increased ability of eCommerce channels to embed themselves into digital media effectively has provided further impetus to the rise of digital as an alternative medium for content distribution as well as an important ingredient for marketing campaigns.

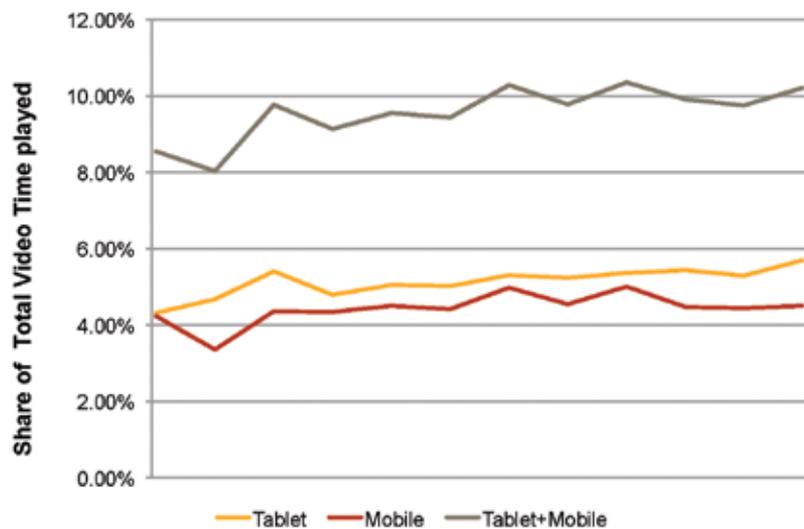
Consider these charts:

US Total Media Ad Spending Growth, by Media 2011-2017 (% change)

	2011	2012	2013	2014	2015	2016	2017
Digital	21.7%	15%	14%	12.4%	10.2%	9.0%	6.9%
Mobile	103.7%	178.3%	75.3%	53.8%	41.8%	33.1%	26%
TV	2.8%	6.4%	2.8%	3.3%	2.0%	4.5%	3.0%

Source: emarketer June 2013

TV Viewing is Evolving into a Mobile Multi-Screen Experience



Source: Ooyala, Video Index Q1 2013

Percent of Respondents



■ No ■ No, but I have in the past ■ Yes

Source: AYTM Market Research

Internet Users Who Have A Cable TV Subscription*

Once considered a marketing channel by broadcast companies, digital media is rapidly emerging as an alternative means of content distribution, augmenting and often replacing traditional TV. While it's true that consumers are not exclusively on digital platforms as yet, online viewership of video content is gaining at the expense of cable/satellite distribution. In the last few years the number of cord cutters and cord shavers is increasing significantly as this data demonstrates.

*May 2013

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While people are watching more hours of TV than before, the increase in the non-linear viewership of video content is impacting the ratings of network TV across the board, particularly during prime-time hours. In the all-important 18-49 demographic in March 2013, Fox saw viewership decline 23 percent, ABC fell 8 percent, NBC dropped 7 percent and CBS was off by 3 percent.

This interplay between new and old forms of media is resulting in an increase in the total amount of media being consumed by individuals. But as the number of hours in the day stays limited, we see the emergence of media multi-tasking and highly connected users that access content from key digital platforms through multiple screens simultaneously through the day. According to Nielsen, 203 million U.S. consumers access media on multiple screens monthly, which is 2.5 times the number of single-screen users. Research also suggests that 98 percent of U.S. consumers move sequentially between devices in the course of the day while 65 percent start shopping on a smart phone and continue on a PC or tablet (source: Google) and more than 40 percent of consumers use social media while watching TV (Ericsson Consumer Lab).

Given this growing multi-platform content consumption pattern, there is an urgent need for TV networks to leverage their linear and non-linear properties and deliver targeted audiences to advertisers from across different platforms. Currently most big networks treat these as silos. However several networks have realized the need for a unified multi-platform approach to advertising.

Some of the key challenges that will need to be addressed in order to adopt this cross platform strategy are:

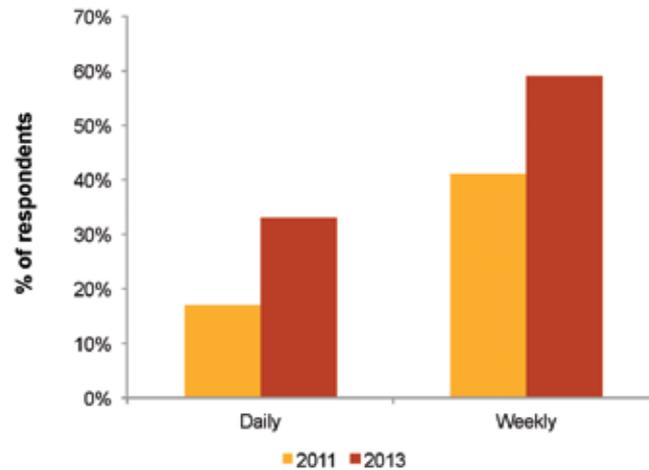
1) Cross Platform Metrics: The longstanding challenge for advertisers has been to compare the metrics between traditional TV and non-linear TV viewership. The difference in metrics used to measure TV ad viewership (Nielsen's Television Rating Points) are different from those for digital ads making it difficult to calculate the reach and frequency between the two.

While the program pilot still does not track viewership of content across third-party platforms such as Hulu or Netflix, it's a good start for networks to be able to package audiences for advertisers across their platforms and perhaps create combined sales and campaign strategy functions.

2) Cross Platform Pricing: Even with com-

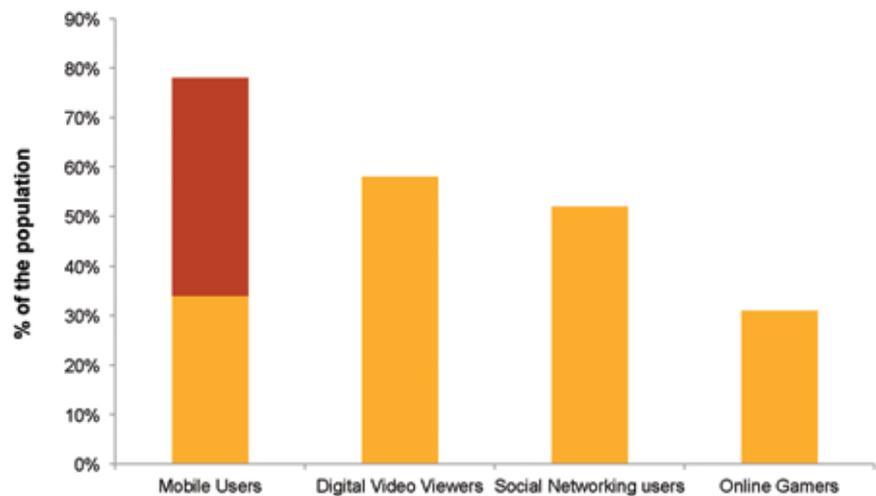
US Consumers Who Watch Over-the-Top Content Daily or Weekly

2011 & 2013



Source: Leichtman Research Group

Consumers are Multi-tasking Across Media Platforms



Source: eMarketer 2013

mon and integrated metrics of viewership the unanswered question for advertisers will remain around the effect of context in understanding these seemingly comparable metrics, across platforms that create vastly different viewership experiences.

This therefore creates the challenge of

pricing the campaign for advertisers. Other variables affecting pricing such as inventory availability across various platforms necessitate the integration of traffic and scheduling systems across these platforms and delivering near real-time data on the go.

Continued on pg 118



Subhankar Bhattacharya heads the Media & Entertainment consulting practice in North America for HCL Technologies Ltd. Neha currently manages key client relationships within HCL's Media & Entertainment Practice. At HCL, Neha has worked with a range of media companies, leading initiatives to proactively support their clients in their transformation efforts as well as manage the day to day operations of these key accounts.





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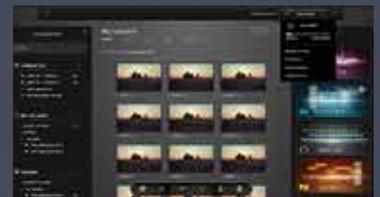
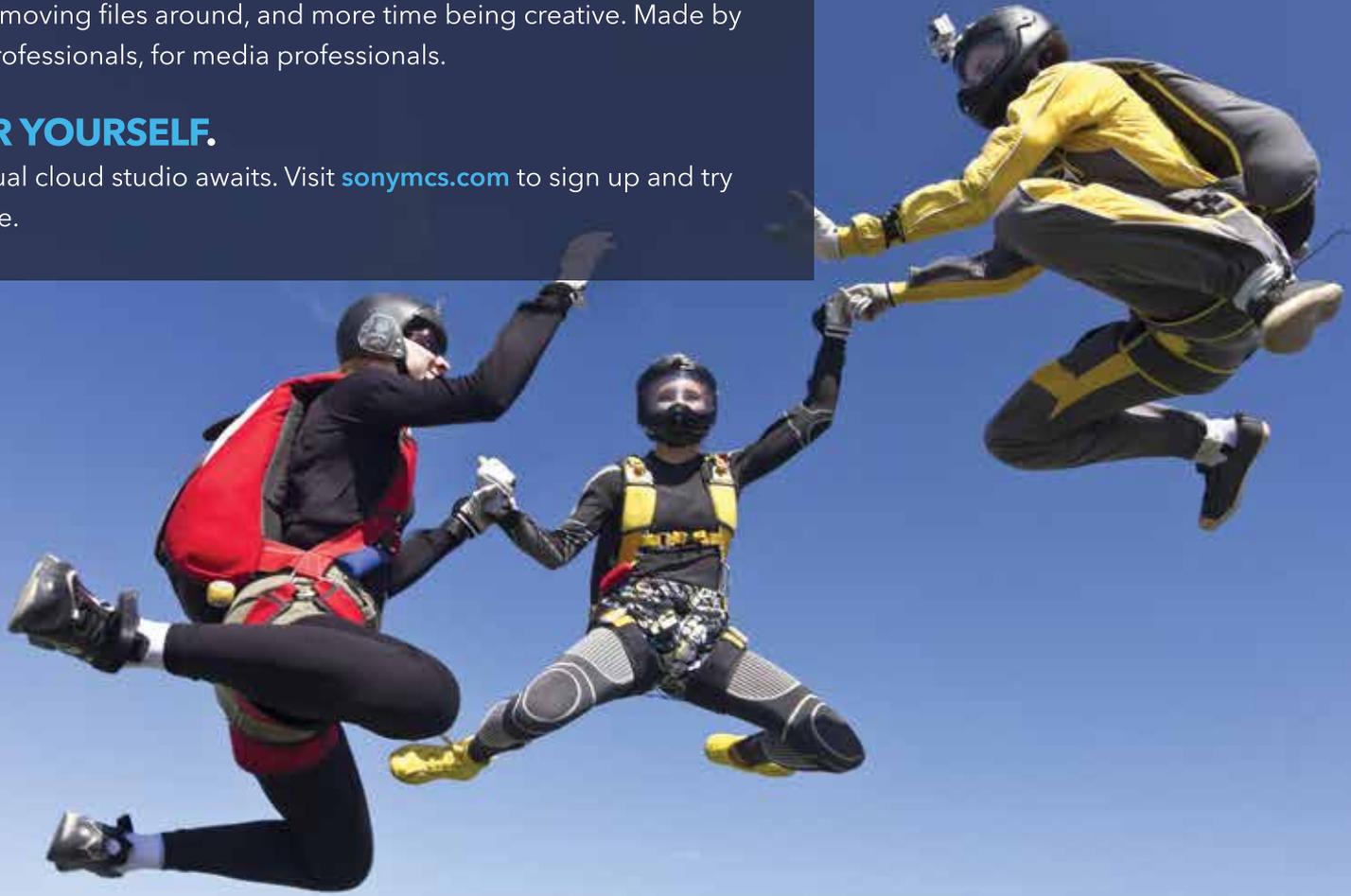
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Cover Story

A byproduct of the digitization of media has been a deluge of data about the consumer and his/her preferences. For the first time ever, Hollywood studios have a direct link to their customers and are now able to make real-time business decisions based on what they buy, what they watch and how they consume it. Add to this a mountain of millennial social media chatter, and you have an unprecedented opportunity to transform the business of making and delivering movies. ►



Taking Control of the Digital Data That Can Connect You to Consumers

Using big data to create a connected experience.

By Cindy McKenzie,

Managing Director, PwC Entertainment,
Media and Communications Practice

Abstract: Digital technology gives you a new opportunity: a direct relationship with consumers. It creates powerful new touch points where digital data can be gathered and utilized to build rewarding, personal relationships with customers. Use it right, and you will create an engaging experience that tells you what customers are thinking, what matters most to them, where you stand in their world – and more. But first, you need to create a connected customer experience. First, a story from everyday digital life...

Twenty-four-year-old Kirstin gets home to watch her favorite drama. Her friends are watching, too. It is the last episode in the season, and everyone is expecting a big twist after trailers clued them in — they have been on social media guessing what it is. Kirstin has been keeping up on her tablet at home, her desktop at work and her smartphone on the move.

The episode starts, and the TV network's app on her tablet is running a live chat room. Chatting unlocks content that traditional subscription viewers do not get, like character bios, behind-the-scenes footage and polls on how the show will end. Kirstin's favorite character announces he is moving to Los Angeles for a new job. Kirstin checks the app to see what fans are saying about the move. She knows that when she contributes to the site she will also earn reward points toward gift cards along with bragging rights.

In the commercial break, the app suggests an airfare and hotel deal to Los

Modern Digital Consumer



Angeles from a partner airline, where Kirstin is going for a friend's wedding. Clicking 'Buy Now - Fly Me There!' she is redirected to the airline's site where her billing information is already filled in, and she buys the trip for a bargain price with a couple of clicks.

As the show ends, the app flashes a game where the first 500 viewers who answer three questions correctly will get to see alternative endings to the one just aired. Kirstin breezes through the questions and earns another 'bragging badge' she can display on her profile page. Later, her smartphone buzzes with an email from the producers offering the latest season DVD a week early, with alternative endings and behind-the-scenes footage no one else gets.

Kirstin is Calling the Shots.

Customers like Kirstin are the most digital-savvy – they are setting the trends for how people will consume content in the future. PwC's recent *Consumer Intelligence Series* research shows the 18-34 age group is the most digitally active, spending 23.5 hours a week consuming digital content. They are also the most open to switching Internet and cable services if it means better value and experiences. That makes them both a good litmus test of what you offer and a disruptive force in media and entertainment.

So the questions you should ask yourself include: Are you ready to be part of the modern digital consumer's lifestyle and exploit the opportunities it offers? How well do you know your customers? Can you relate to them in an engaging way? Can you give them the content they want, when they want it and for a price they are willing to pay? Do you know whether they are satisfied with what you are giving them?

Are You Experienced?

Success in this new world means delivering a connected customer experience. And that in turn means recognizing that customer experience is built over time from increasingly non-linear connected interactions both across and adjacent to your brands and products.

Building this experience is no simple job. Trends and opinions change fast, so there are more opportunities to exploit, but they are

more fleeting. Content owners and brands have to react in real time across the customer's non-linear journey and keep evolving in the blur of texts, emails, live chats, blogs, tweets and more.

To make it work, there are three things you should know about your customers:

- All the ways they relate to your brands and products
- Their journey, criss-crossing organizational, brand and channel boundaries
- What they prefer and how they behave

Many businesses know these things matter, but they are addressing them in silos. Standing out from the competition is about combining capabilities to engage customers in non-linear ways. Any part of a business that deals with customers should understand their whole experience and be fluent in what it takes to create it. Sales, marketing, service, content development, and technology all should work together seamlessly.

Customer-centered strategy

Customers are redefining the very notion of value. Focusing your strategy on your customers means they are innovating with you. And that makes it one of the only ways businesses have left to grow organically by differentiating themselves. Having a customer centered strategy means:

1. **Knowing** who your customers are and how they behave, and innovating for and with them
2. **Seeing** things through customers' eyes to redefine your business model, processes and technologies
3. **Experimenting** as you go to make sure you collect only relevant data. That means you will gradually build up the capability to analyze the data and use it to make forecasts.

And putting that into action is about doing three things:

1) **MAPPING OUT THE CUSTOMER JOURNEY**
Once you know who your customers are, what kind of relationship you want to have and what you want to achieve, you need to map all the ways they interact with you. That is critical if you are going to create a cohesive experience built around them, not you. It is possible now to create digital customer profiles for each customer that let you treat them as individuals. The result is that you will make them feel you know who they are, and not that you are blindly throwing out content in the hope that some of it sticks.

2) **KNOWING HOW TO USE SOCIAL MEDIA**
This is not just social media posts or tweets to promote content, or social listening about content or brands. It can also help you start and steer a conversation with fans and detractors



Cindy McKenzie is a Managing Director with PwC's Entertainment, Media and Communications (EMC) practice working to enable content companies to more effectively utilize analytical solutions to measure customer engagement, analyze customer sentiment and evaluate relative content profitability and effectiveness of anti-piracy and content security programs. Prior to joining PwC, Cindy worked for Fox Entertainment Group and Sony Pictures Entertainment.

Customer experience is built on increasingly non-linear connected interactions

alike — it could be about movies, shows or characters. Who is doing most of the talking? Who are the influencers? What do people get most excited about?

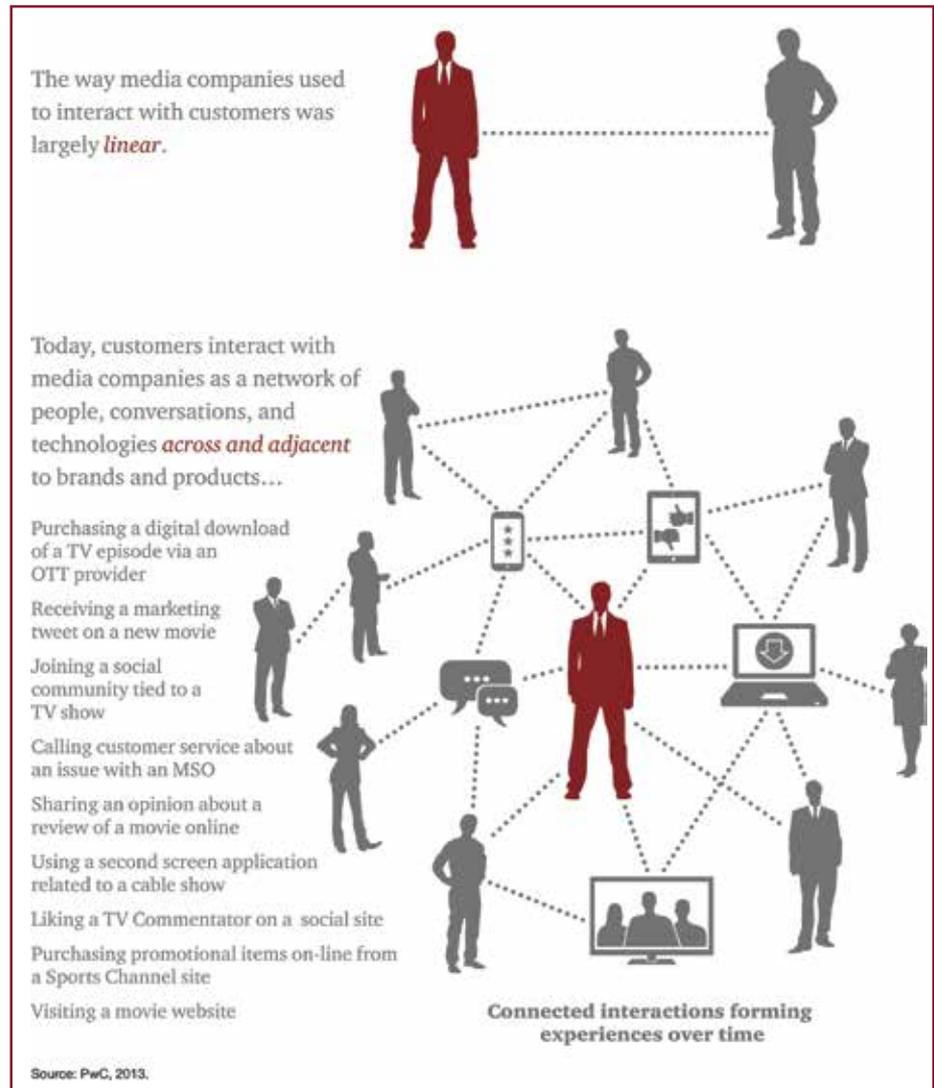
You can use what you learn from these interactions to create and improve the connected experience via data, insight and analytics. They will give you rich, reliable information about how people behave, what they want and what they care about. And that is raw material for fine-tuning the customer experience.

3) USING DATA AND ANALYTICS

At each stage of your customers' experience, as they find, engage with and buy from you, there is a deluge of data trying to tell you about their habits, perceptions and beliefs. The sheer magnitude of it can cripple some businesses into paralysis. But a connected customer strategy can help you define what data you need to build detailed customer profiles that give you insight from behavior, preferences and demographics and let you treat your customers as individuals. It also lets you measure campaigns more effectively, using responses to fine-tune your offer or change tack altogether.

The data comes from three places: your own business (for instance, what people are buying, where, and how often), social media, and third parties (like partners in the value chain). You can use it to track and influence how customers behave and how they feel about your company, your content, or your talent. Watch how they react when you green-light a new show, market it and launch it. See how marketing campaigns affect behavior. And study how customers respond to different offers, pricing and distribution options.

You can use analytics to find signals through the noise of all the data available. It also helps answer precise questions: was my engagement strategy effective? How are marketing campaigns affecting customer behavior? How did customers in certain demographics react to different pricing and distribution models? You can



also use analytics to:

- Track and influence behavior
- Micro-segment marketing, recommendations and ads — based on sentiment, habits and customer segmentation, knowing whether they are fanboys or art house movie lovers
- Shape and test new ideas with customers in real time in a way that makes them feel involved and appreciated
- Find out how much they are prepared to pay for content

Over time, you can use this data to develop more insights that can be used to forecast customer behavior and trends, revenue and ratings. The key is figuring out what questions to ask, and how you can use the answers to create

value.

Start now, build slowly

To own the connected experiences and conversations, you can start now by building digital customer profiles. It does not need to be a daunting five-year plan. Start small and get quick results by asking a few key questions and gathering just enough data to test a hypothesis.

The effort is worth it. In fact, without it, the Kirstins of the digital world may forever be out of reach. ■

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From Inspiration to Insight

Understanding the role of analytics across the content value chain.

By Colleen Quinn, Global Director, Media & Entertainment,
Teradata Corporation



Abstract: Embracing the role of analytics in the Media and Entertainment industry's new data-driven environment can be a challenge for both creative and analytical minds. It's difficult to dispute the decades of wisdom gleaned from the collective wealth of creative industry experience. But, no one is arguing that there needs to be a wholesale switch. The truth is that the most valuable insight across the content value chain comes from the intersection of "gut" and analytic intelligence – the great harmonic convergence of art and science. ►

Traditional analytics tools combined with new big data capabilities can unleash creative power, and bridge the gap between gut and insight.

When creative companies integrate their artistic sensibilities with what they know about their audiences, their content, their channels and their marketing, they can unleash the value of the convergence of art and science. Engaging audiences across today's fragmented entertainment ecosystem requires a fresh, detailed understanding of both worlds.

From creation through consumption, the role of data and analytics in enabling, managing and optimizing the new digital value chain is essential. This article will explore the critical role of analytics with use cases across the content value chain, from content greenlighting to integrated marketing to multi-platform distribution and consumption. Key use cases will highlight the role of analytics in: content creation, content analytics, integrated marketing, audience and behavioral analysis, and more.

Going Beyond Gut

It was a brief article in the May 5, 2013 edition of *The New York Times* that shined light on a little known practice in Hollywood. Titled "Solving the Equation of a Hit Film, With Data," the article described the seemingly shocking services of a script advisory consultant, Vinny Bruzzese, who used data about past film performance, plot points, and more to advise the screenwriting process. Screenwriters everywhere flapped their arms about intrusion into the creative process. The battle of gut versus insight in entertainment had been waged publically, at last.

Media & Entertainment has long been an industry dominated by the creative "gut." Often, embracing the role of analytics in a creative environment can be a challenge for creative and analytical minds alike. That's because it's hard to dispute the collective wisdom of creative powerhouses who've been at their trades for decades. But, the ad-hoc

analytics consulting described in the article are just the tip of the iceberg. The fact is the most forward-thinking studios and content distributors are already embracing the role of analytics across the content value chain. These aren't just one-off consulting insights – these are comprehensive analytics strategies that can unleash the power of data from content green-lighting through consumption. Studios, content creators and distributors need to reinvent themselves as creative quants capable of mining web, mobile app, point-of-sale, box office, social and other data to develop the best content and build the most enduring relationships with audiences.

Traditional analytics tools combined with new, big data capabilities can unleash creative power, and bridge the gap between gut and insight. There are dozens of analytics use cases across the entertainment ecosystem. Following are three examples of how analytics can give content creators and distributors a competitive edge:

ANALYTIC #1 - *The Creative Infusion: Greenlighting & Story Telling*

Studios and content creators use analytics and reporting with frequency for day-to-day operational tasks, like supply chain management and sales forecasting. But, this first use case falls into an entirely different category. In-house analytics can inspire a creative infusion – and it doesn't take a sought-after specialist to implement.

When a show is test screened or piloted, there is a wealth of data that can be collected: viewership surveys, Nielsen ratings, set-top

boxes, focus groups, census data, and social media buzz. Every platform brings the opportunity for more insight: TVs, PCs, DVRs, and mobile devices included. By analyzing audience responses, a company can determine how well a given show will do compared to others in a wide range of demographic and psychographic groupings.

Analytics can help creators understand the appeal of a new show to the potential audience, and therefore the shows likelihood of success, both in terms of audience size and advertising sales. Analytics also reveal whether a show will complement other shows (important for slotting strategy), and whether it is likely to compete well against likely competitors.

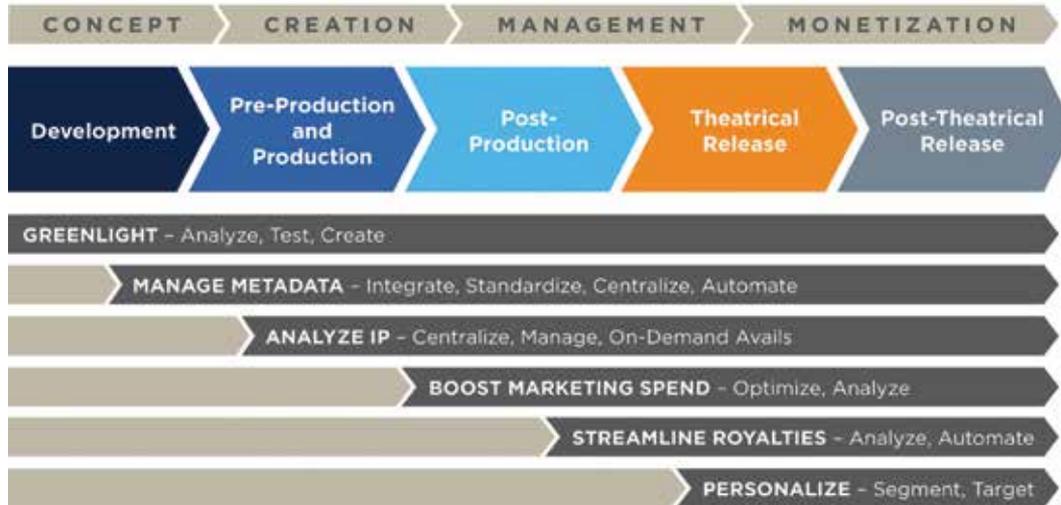
In a focus group setting, test audiences using "dial boxes" communicate in real time their positive and negative reactions at each moment during a test show. By measuring at what point in the show audience reactions turn negative and positive—and the intensity of their reactions—analysts identify where plots or topics need to change, whether a cast member needs to change, if a location should change, etc. Producers and directors use this crucial feedback to improve a show from an average commercial success to a hit.

ANALYTIC #2 – *Getting to Know You: Recommendations & Personalization*

With the explosion of multi-platform distribution opportunities and the increasing role of the 2nd Screen, today's content landscape offers a ripe environment for growing direct-to-consumer businesses. More than



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Data and analytics can provide insight across the content value chain, from greenlighting to post-theatrical sales and licensing.

just offering a new monetization channel, direct-to-consumer businesses give front-row seats to a consumer’s preferences, behaviors and engagement.

But, knowing these insights are available doesn’t guarantee successful execution. Entertainment companies must have the resources to sift through massive amounts of content interaction data and deliver relevant recommendations and highly personalized experiences.

True connection with each audience member is possible only when you can tally all digital clicks and analyze all interactions. But, so-called Big Data analytics can’t operate in isolation. Once you’ve identified relevant patterns, affinities and preferences, these insights need to be integrated back into broader operational analytics to drive meaningful activity:

- What titles should be recommended to a given user?
- How can content be bundled for programming, sale, or promotion?
- What are the best marketing and promotional channels for a series or movie based on audience preferences?

In describing the analytics strategy of YouTube’s #1 Entertainment Network of all time, Machinima’s COO said, “Having great content is critical, but ensuring that content is made visible to the right audience is the game changer.”

ANALYTIC #3 – Getting the Most Bang for Your Buck: Optimizing Marketing Spend
Content creators and studios spend almost as

much marketing their films and television series, as they do producing them. But, as the old adage goes, most marketing organizations know that half of their marketing spend is a waste – they just don’t know which half. Inefficiencies around the creation, planning, tracking and execution of major marketing budgets are commonplace.

Most studios and content creators take waste for granted. When you’re spending tens, if not hundreds, of millions of dollars, of course it’s impossible to track every dollar effectively. Or is it? Across Entertainment – and in many other industries with parallel marketing spends – these inefficiencies can be tied to a simple lack of analytics and apps to manage marketing operations.

Marketing allocations have shifted, with digital competing for an increasingly large share of spend. Marketers need to demonstrate the value of every channel, or risk loss of budget – or worse, damage to the success of a new release or series premiere. End-to-end marketing resource management capabilities allow companies to streamline marketing operations, and enable them to maximize the value of every marketing dollar spent. Essential elements include:

- Plan & Spend Management: for visibility into marketing spend and effectiveness across titles, brands, channels and regions
- Workflow & Project Management: for efficient workflow and reduction in processing time
- Marketing Asset Management: to track

collateral use, eliminate issues with version control, and establish a centralized asset library for lightweight marketing materials

The Creative Quant

From content creation through consumption, the role of data and analytics in enabling, managing and optimizing the new digital supply chain is essential. But, even as reliance on analytics in entertainment becomes more prominent, no one is arguing that there needs to be a wholesale switch from intuition to insight. Really, the opportunity is to educate creative and analytics teams to help them achieve the great harmonic convergence of art and science. Creative teams have directors and producers... it’s time to add a credit for the creative quant.

Creative quants are on the rise because data has become more abundant and meaningful than ever. It’s become a dimension of the content supply chain that’s too big to ignore. Intelligence-driven insight in the hands of a cutting-edge mind illuminates the creative vision as well as the executive decision – to produce artistic experiences with both aesthetic and business value. Engaging audiences across today’s fragmented entertainment ecosystem demands a detailed understanding of the art of both. I close on this quote:

“Any sufficiently advanced technology is indistinguishable from magic.” –Arthur C. Clarke, *Writer and Futurist* ■

Media & Entertainment Spotlight on change

What do advertisers have in common with satellite operators? What links broadcasters with software developers? They all have parts to play in the rapidly changing media and entertainment industry, and all of them — along with cable operators, information services, print publishers, studios and others — live or die based on how well they see and manage trends. Our Media & Entertainment specialists, a key part of our Technology, Media & Telecommunications (TMT) practice, work aggressively to help industry leaders make dramatic change work for them.

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If social media is a forum for customers to talk, then social analytics is a means for media and entertainment firms to listen.

It takes more than talent to create a hit in the entertainment industry. By and large, if you're going to run a profitable entertainment enterprise, you need serious capital investment, a thorough understanding of consumer preferences in both broad and niche markets, and extensive knowledge and experience across numerous industry sectors. This is because the media and entertainment business is not solely about media and entertainment! It spans consumer packaged goods, retail, logistics and, in a sector where thoughts about funding are rarely absent, financial services too. In short, this business is about more than generating brilliant content and finding distribution channels to reach customers and maximize profits. The complexities, already huge, are getting larger. To get it right, at all points of the value chain and in the production and distribution process, you need to know a lot of stuff. Moreover, because the industry touches so many other sectors, each with their own idiosyncrasies and ways of analyzing issues, it's necessary to find systems that can interpret information from many sources and turn it into meaningful insights. No single individual, business unit or arguably even corporation can do that alone. Collaboration is the name of the game.

Voice of the Customer: Through social media, your customer is telling you what products and services they want, and how to market and sell those products to them! Approximately 62 percent of 24-29 year olds and 51 percent of 30-46 year olds use social media to collaborate. Customers continue to spend more time on social networks than other types of sites. Approximately 20 percent of this time is spent on PCs and 30 percent on mobile devices. As social media continues to expand, traditional product development and marketing approaches should evolve. Organizations are now in a different position to capture "social

noise" and distill specific, meaningful customer insights. By coupling social analytics with statistical modeling, organizations are able to provide products that are predictably relevant to their customers. Social analytics can enable an organization to get out of the "fire and forget" delivery model and instead incorporate data-backed analysis into decision making such as pricing and marketing campaign requirements. Social analytics is immensely valuable to understanding how consumers are responding to products.

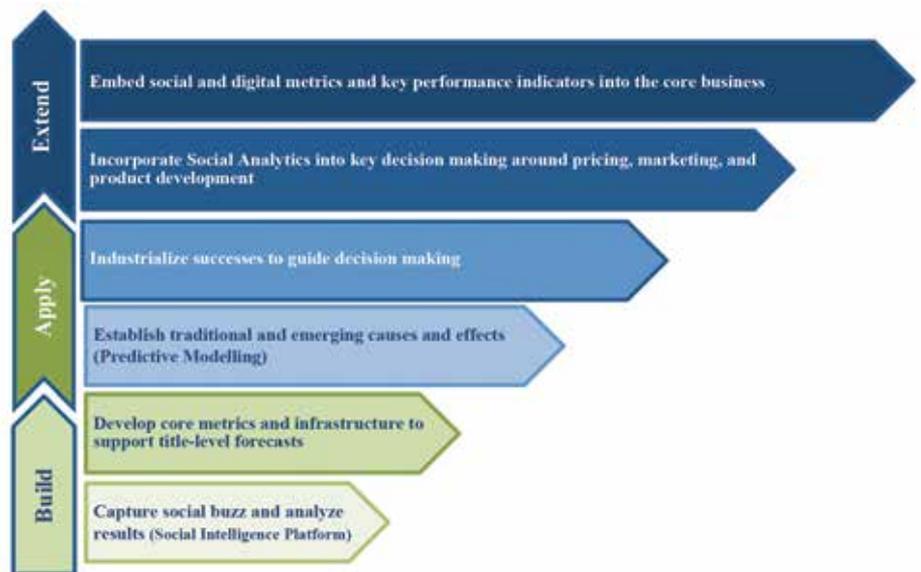
Value Creation: While traditional sources of customer and market research enable strategy creation, social analytics provides a tactical tool to enable real-time decision making. When leveraging social analytics, organizations may discover that traditional research is expensive, dated and less relevant. To properly utilize social data, Marketing and Finance functions will be challenged to create new metrics that will require deeper integration of new technologies to measure customer interactions.

The potential benefits of social analytics

include adjustment of marketing campaigns, sales forecasting, and pricing strategies. As Chief Marketing Officers are challenged with calculating careful Marketing ROI, operating more effectively and efficiently amid shrinking marketing budgets, and shifting focus from traditional channels (print) to the Internet (social networks), having an established social analytics program becomes imperative.

Companies are realizing the importance of leveraging social data to adjust marketing strategies. Consequently, the establishment of key indicators will be based upon the relevance of emerging social metrics. The focus should be less on "what happened" and more on "why it happened."

How to Launch a Social Analytics Program: The convergence of traditional and emerging data sources within media and entertainment amplifies the need to effectively integrate emerging social data into daily business operations. Leveraging a managed social media analytics platform can empower media and entertainment firms to be more efficient and



Using a Social Intelligence Platform to help capture social media analytics.

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To effectively deploy a social-analytics program, organizations should assess the maturity of their existing capabilities.

agile in today's evolving marketplace.

To develop such a solution, media and entertainment firms should look to incorporate social intelligence through building infrastructure to capture social intelligence metrics, applying social cause and effect with emerging social data sources, and extending the use of social analytics into day-to-day business decisions.

Deploying an Effective Social Analytics Program: Across a variety of business functions, organizations are changing existing business processes, and even creating new ones because of social media. These changes have spawned individual initiatives, delivering significant benefits to people in those business functions.

To effectively deploy a social analytics program, organizations should assess the maturity of their existing social analytics capabilities. Many organizations currently fall under Developing or Maturing stages within social analytics capabilities, as availability and breakdown of social data is consumed to understand what has happened rather than why certain events have happened. In order for organizations to progress into the Leading stages of leveraging social analytics within their business, they should assess where themselves along several dimensions:

- **DATA** – Does my organization have large, centralized volumes of multi-structured social data (including competitive data) to inform data analytics?
- **ANALYTICS** – Does my organization have the ability to determine correlations with data to provide insights and predict events or sales based on changes in the social space?
- **TECHNOLOGY** – Are my systems and data sources sufficiently integrated to allow for automated reporting and event-based alerts on social triggers?
- **RESPONSIVENESS** – Does my organization have the capability and infrastructure to allow real-time querying and provide event-based reporting?

By following a structured approach, media and entertainment firms can focus on the following:

Quickly stand up analytical capabilities centered on emerging data sources (i.e. social media)

- **Optimized, consolidated platform and toolset offers full functionality with the ability to incorporate new platforms, data sources, and "add-on" functions as needed**
- **Integrated platform** analyzes streams of data, identifies significant events, and alerts other systems
- **Integrated dashboards** allow users to drill through data points

Make real-time decisions and adjustments to marketing campaigns, product development, and financial forecasts

- **Insights gained from social intelligence are integrated into the organization and the resulting strategies are made actionable across functional business units**
- **Large, centralized volumes of multi-structured data (including competitive data) are made available to the business for predictive purposes**
- **Data is updated on a real-time basis**

Establish cause and effect modeling for both traditional and emerging data sources

- **Ability to determine correlation of marketing activities and sales**
- **Establishment of accurate marketing ROI model**
- **Ability to predict sales based on correlations between competitive performances and social sentiment**
- **Forecasted demand for titles under various scenarios**

■ **SUPPORT** – Will my organization be equipped to handle questions and calls to action that will develop from integrating social analytics to specific areas of operations (e.g., finance, supply chain, marketing, etc.)?

Following the assessment, organizations can create a vision to determine how

far they want to expand beyond their current capabilities. A future state roadmap can be developed to form or confirm an organization's vision for expanding its current capabilities and provide a directional, phased approach guide to achieving the vision. ■



Jeff Mischka leads Deloitte Consulting LLP's Filmed Entertainment Affinity Group in the western region. Over the past decade, Jeff has directed numerous efforts for leading information services, film and recording entertainment companies in New York and Los Angeles. Jeff's contributions are based on more than 28 years of experience as a consultant and information technology executive.



Jordan Wiggins leads a majority of Deloitte Consulting's social media analytics initiatives across the media and entertainment marketplace in Los Angeles, focusing on predictive analytics. He also heads up Deloitte's Studio Controllership Forum roundtable series that is focused on discussing topics of interest for the Controllers, FP&A Executives and CFOs across the major studios.



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Media in the Data Driven Era: Do You Know Me?

Satisfying consumers' individual needs. By Steve Canepa, General Manager,
Global Media and Entertainment Industry, IBM



Abstract: It is no secret that the “always on” consumer of today expects content to be available at all times, in multiple formats and on multiple devices. In order to comply with these demands, media firms are revising the rules that guide how content is created and when and where it is distributed. Yet, as daunting as the transition to ‘digital’ has been, perhaps the biggest change is yet to happen.

The next great challenge for media companies is to transition away from “creative hunches” and “promotional excess” and to transform into truly data-driven businesses. This will require a significant investment of time and resources in order to create a new core-competency around data. Then, having nurtured this new expertise, firms must develop a relentless focus on audience intimacy – that is, understanding individuals’ interest, behavior, motivation and influence.

The notion that media and entertainment organizations can understand and satisfy every audience member’s individual needs may seem a bit overreaching. However, this is not only an attainable goal but ultimately, a necessary requirement. It is increasingly possible to understand and predict not just the type of content people will want, but also to know how and where it will be consumed.

Data will drive these changes. Media companies will need to fully leverage both historical transaction data and data from third-party services, and in addition, integrate an important new data source, which dwarfs all the others combined: natural language unstructured data. This is vital, as consumers aren’t just consuming content on mobile devices; they are publishing information and opinions, too. A new generation of sophisticated analytics software can immediately understand the context in which this content is published, and it can draw valuable conclusions both about the creator of the content and their network of connections.

The new imperative for media companies is not just to chase the ‘hype’ of Big

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Data, but to integrate all of the available data. This will allow them to create more targeted marketing campaigns, to improve demand forecasting and to better understand cross platform usage, as well as to drive advertising optimization. By implementing a 'next generation data architecture,' media companies can use predictive capabilities to get the most out of existing products and services, and to build new ones that reach audiences faster and in the most cost effective manner.

Measuring Social Media

Here's a proof-point of how the concept works: Golf enthusiasts who watched the 2013 Masters Golf Tournament over traditional broadcast television received the very best polish and brilliance that linear television can offer. But those who downloaded the iPad or Android app had a totally different experience: viewers could essentially tailor their own coverage of the event, choose their own camera angles, replay the holes of most importance and dig up specific historical statistics in real time. Additionally, they could share the experience with their friends, family, and beyond. The trick? A finite amount of data presented in a framework that could deliver an infinite number of experiences, and more importantly, a potentially unique experience for each individual viewer.

Social media and the trade off between privacy and participation in the context of media 'value-exchange' is the new catalyst. Data generated by social media networks can be used for everything from marketing to service provisioning (e.g. available insights surrounding certain titles may help providers anticipate how much server capacity they will need to accommodate demand for a streaming, on-demand event).



In the case of theatrical distribution, we've already seen how accurately social media can measure interest for films and provide a more precise picture of the target audience for new releases. We can now collect and analyze data generated across millions of blogs, billions of tweets and countless other actions in real time. Not only can the data help to better predict how a film will fare at the box office, but it offers countless other insights, such as how specific trailers drive social media responses more effectively than others; the sentiment among different personas (e.g. book readers, comic book fans, etc.) and which specific marketing elements

elicited the strongest (positive and negative) responses.

With the right algorithms, it is now possible to train computers to understand and analyze language used in social media to draw an almost infinite number of conclusions. This new paradigm – known as cognitive computing – holds the promise of reshaping the media landscape. It will separate winners from losers and identify the brands, products and services that target the right audience and those that don't.

Why now you ask? Well, once upon a time, producing and distributing media meant investing in specialized and rigid (often proprietary) technological infrastructure and applications. Now, open architectures, cloud computing, and process automation can be melded together into an agile 'Media Enterprise Framework.' This new framework has the requisite redundancy, reliability, security and flexibility to respond to the realities of a rapidly changing marketplace.

Next-Gen Data Architecture

So the race is on to achieve process automation (continual optimization) and technological innovation; to build a 'next generation data architecture' to enhance business performance and more importantly, to better understand audiences. The bottom line is that if you don't know 'who I am' – what I like, who I influence, how I consume and why – and your competitor does, well, we already know how the last act of that story goes, and it isn't a pretty picture. ■



Steve Canepa is responsible for the P&L of a world-wide matrix organization of 5,000+ employees delivering value to IBM clients in the online, social, games, advertising, entertainment, broadcast, cable, publishing, satellite, sports, and music segments. Under his direction, the division has grown into the largest provider of solutions, services and technology to the M&E industry and a consistent top performing IBM Industry group.



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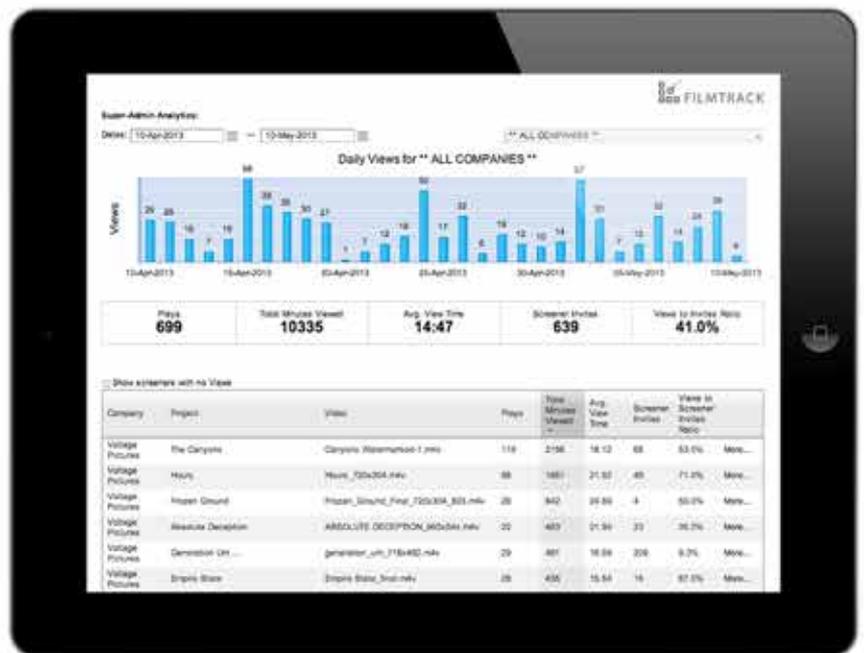
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The Need for Consistent & Uniform Reporting and Analytics

Finding solutions to the challenges brought on by the digital revolution.

By Mike Sid, Chief Executive Officer, and Co-Founder, Mediamorph



Abstract: A decade ago, as digital distribution started gaining traction, there were just a few platforms and consequently the revenues were low. It goes without saying, back then digital distribution was easier to manage and consequences of mistakes were low. With the explosion of a myriad of digital platforms around the globe, workload and revenue significance has increased exponentially.

In the same way the industrial revolution changed how societies worked, we are living through another, even greater shift. The current digital revolution has created newer approaches and processes across most industries while also yielding both greater opportunities and increased challenges.

Specifically, as it relates to the Media and Entertainment industry, the digital revolution is creating immense changes that have led to greater consumer choice, allowing audiences to experience the content they love anytime, anywhere and through a variety of business models along with the ability

to engage in feedback and participate in a global conversation like never before.

For every opportunity, there are also challenges that come with it. The challenges of the digital revolution often include quickly and efficiently filling those distribution channels, understanding the audience and behavior across platform, device, geography and social engagement.

But, as we continue to navigate through this information age, we are sharing more, with more people, at an exponential pace. This leads to an inability for our market to work as effectively and cohesively as is should, creating an ecosystem where companies lack the right information to make strategic business decisions in a timely manner.

Even with all this readily available information, the one challenge that remains for content owners is the ability to fully understand content sales across digital platforms. Not only does each platform report at different times, in different formats and with different processes, but also there is no easy way to get competitive data for digital EST, creating a very challenging scenario for determining how a particular title performs against a competitors' title in the same week.



For more than 10 years, Mike Sid has helped leading entertainment companies such as Sony Music, Sony Pictures, Comcast, Time Warner, MTV, Nickelodeon, Showtime Networks and Clear Channel build their digital entertainment systems and businesses. Mike's experience ranges from leading the Media and Entertainment vertical for a major web integrator and building the infrastructure for digital entertainment at Sony Music to establishing a semantic web start up as the leader in its space.



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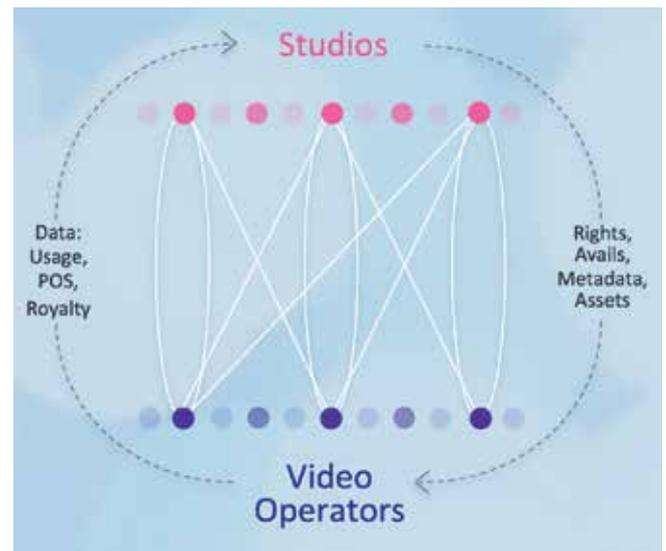
For video operators and MVPDs, the challenge is working with scores of teams to manage thousands of titles from across the studios. That process begins with the receiving of Avails notices to moving content through their digital supply chain partners to getting the content onto their platform. There are also big challenges with how the different companies and teams work together – which still occurs in a very manual way. Those different processes throughout the value chain cause friction in the industry, which in reality can't be "solved," but can be minimized.

In a perfect world, a studio or content owner would release an Avails notice to a particular title once, and that would initiate a process to an automated supply chain workflow and get content "on-air" more smoothly. The reality is that today the management of Avails and metadata between content owner and video operator involves many different report formats, tons of manual work, and lots of communications by phone and emails to validate or correct

issues. The result is high-cost, wasted time and effort, and extra people power.

The good news is that this can and will get better. DEG: The Digital Entertainment Group, an industry-funded, nonprofit corporation focused on promoting the benefits of digital home entertainment, is actively working on solving the competitive data problem with its Digital Data Tracker initiative. Through this initiative, participating DEG member studios will receive cross-platform title rankings to better understand the competitive landscape in digital EST.

This DEG initiative is something we fully put our support behind and encour-



Meidamorph's depiction of the flow of information from studios to video operators.

age. As the industry continues to transition to a more digital native environment and revenues reinforce the significance of that change, the industry needs to work smarter. Not doing so will lead to lost opportunities for us all. And, that's not a scenario I want to see happen. ■

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Move Forward

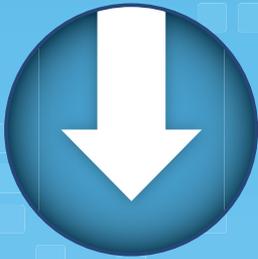
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The hyper-connected consumer today has access to real time content across multiple devices. As a result, Media & Entertainment companies need to collaborate with customers, employees and partners to drive innovation across the value chain and create successful new-age customer relationships. This will result in an "Engaged Enterprise" that rapidly improves products and services while accelerating the time to market.

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Securing the Content Behind the Content

Igniting the collaboration conversation.

By Ryan Kalember, Chief Product Officer, WatchDox



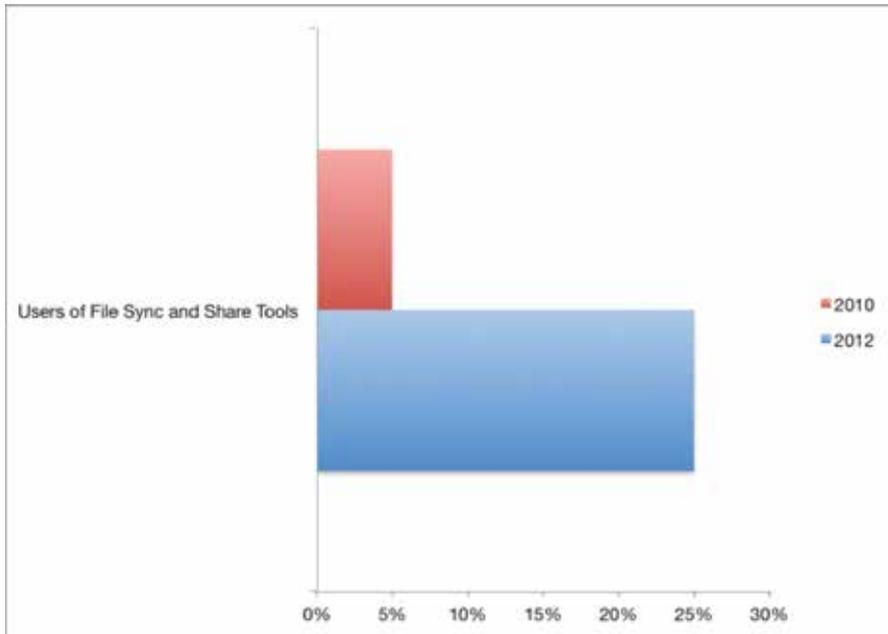
One especially pronounced change has happened in the ways that everyone – businesses and individuals alike – share files. Where once email and custom systems were the norm, along with paper for what was truly sensitive, now 25 percent of global information technology workers use file sync and sharing services, up from 5 percent just two years ago according to Forrester Research. In the entertainment industry, this has impacted critical workflows, from the creative exec who wants to review a script on her iPad to an actor who needs to access an updated call sheet on an Android smartphone.

The tremendous productivity and convenience of these services has led to their rapid adoption in a variety of industries, including entertainment. Free versions abound, and often creep into companies without IT knowing, much less reviewing them for whether they adequately safeguard the critical intellectual property that can make its way into a sync folder with the click of a mouse. This problem becomes particularly pressing in light of the fact that a wide range of the most critical business processes in the entertainment industry are document-based, from script sharing and contracts to the sides, breakdowns and call sheets circulated around during production. In the real world and in the digital world, this file mobility has changed the game. Securing production content has become almost as critical as protecting the finished product itself.

This is all happening in the context of the blockbuster economic model, which is not going away any time soon. “Demand isn’t moving to the tail; it’s moving to the head,” said Anita Elberse, a professor at Harvard Business School recently in *The Atlantic*. As bigger bets are made on a

Abstract: The process of creating filmed entertainment has always been fundamentally collaborative. Even the great auteurs of the 1960s needed actors, crews, accountants and distribution to realize their creative visions. It’s also inherently mobile – even productions with the smallest of budgets shoot on location. The world of information technology is by comparison late to the party. Only in the last few years have the trends toward collaboration and mobility begun to dominate the conversation in enterprise IT.

Rise in Workflow Sharing



25 percent of global information technology workers use file sync and sharing services, up from 5 percent just two years ago according to Forrester Research.

smaller number of films, critical intellectual property like scripts is even more crucial to protect as they move from person to person and device to device. Older, paper-based methods of securing that sensitive information, like couriers sent around the globe with locked briefcases containing scripts, are also correctly being scrutinized as potentially unnecessary costs in an industry with tighter and tighter margins.

Reducing the complexity, cost and risk around sharing sensitive files has the potential to greatly improve some of the most important workflows in the entertainment industry, but doing so can be challenging. Here are three recommendations:

1. Secure data at the file level so controls travel with the file, no matter where it goes. It's virtually impossible to control the ways that a file can move from place to place, whether via email, a thumb drive or mobile devices, all of which make it easy to transfer, remove and share documents. Relying on user-specific or device-specific authorization doesn't help much when the user forwards files to her

personal email address or loses her phone. The most sensible and effective security measure in the face of these technologies is to protect information at the file level. When the document itself is wrapped in a layer of protection, enterprises retain the ability to limit or revoke access, regardless of whether the file moves to the cloud, to a smartphone, to a laptop, or into the hands of an unauthorized user.

2. Store your files so they're encrypted – even from your storage provider. Companies including Apple and Microsoft have recently disclosed that they cooperate with the government on court-ordered requests for customer data, and administrators at cloud storage providers such as Dropbox, Box or Amazon can also view their customers' data at any time. Regardless of where an enterprise stores its critical data, it needs to consider who might be able to access its intellectual property.

3. Adopt security with the same easy drag-and-drop features your file handlers know and love from their consumer

file-sharing apps. In far too many enterprises, users have gone rogue. Fed up with unresponsive or overburdened IT teams, employees have adopted widely available cloud services – and they like what they see in the consumer market. Users don't necessarily ask whether the systems are secure or whether it's safe to share files via Box. All they know is that these offerings are easy to use. If enterprises are to adopt security measures with any hope of employee buy-in, they need to find security solutions that are similarly user-friendly and do double duty as collaboration platforms. These tools should be useful, attractive and intuitive, so that users don't even know they're playing by the rules; they simply know that the tools help them do their jobs better and more easily.

The IT equivalent of digging a moat around the company with firewalls, raising the drawbridge, and calling the castle secure no longer makes sense. We at WatchDox are privileged to work with forward-thinking IT leaders at dozens of studios and other media companies like Deluxe, who have made the move to data-centric security controls for their mobile, collaborative business processes, and are seeing the benefits. When information is so easy to transfer and share, the only hope the entertainment industry has of protecting itself from leaks is to secure data where it lives – at the file level. ■



Ryan Kalember has worked on protecting information since his undergrad days at Stanford. He's held management roles at ArcSight (later HP) and Guardent (later VeriSign).

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Black or White Box?

To best calculate exposure risk, understand the security approach.

By Ted Harrington, Executive Partner, Independent Security Evaluators (ISE)

Abstract: To improve the security posture of digital technologies in the entertainment industry, progressive organizations engage third-party security experts to assess risk and provide hardening guidance. The most suitable approach for the industry is white-box vulnerability assessment. However, confusion about different security approaches has led IT executives to commonly request the notably ineffective approach of black-box penetration testing. Most executives may be surprised to discover that this approach actually undermines the very risk assessment objectives they seek to achieve. This article will analyze the trend, contrast different tests and methodologies, and outline best practices.



Evaluation Types

An evaluation is an investigation of security features and functionality. Although there are many different types of evaluations, the two most relevant to the entertainment industry are vulnerability assessment and penetration test.

The objective of a vulnerability assessment is to determine the full scope of exposures that exist – quite simply, a vulnerability assessment is a risk assessment. Unlike a penetration test, a vulnerability assessment seeks to identify all ways in which asset compromise might be possible. It considers assets, threats, workflow, whole system configuration, and internal defenses, as well as future developments of the infrastructure or application. The threats addressed go beyond the drive-by adversary, and consider the more likely adversaries who would be interested in compromising entertainment assets: targeted attacks, insider threats, advanced persistent threats, and the accidental (perhaps inevitable) security breach. By contrast, the goal of a penetration test is simply to determine if defenses can be breached. In terms of risk assessment, it provides primarily a binary risk rating – *can* be breached or *cannot* be breached.

Beyond definition and primary objective, these engagements typically differ in other notable ways. Penetration tests often rely heavily on automated tools, only leverage known vulnerabilities, and seek to identify low-hanging fruit. Vulnerability assessments use these same tools as part of the process, but incorporate the results into a custom evaluation, and seek to identify all potential vulnerabilities, not just those that can be found through automation.

The most telling difference between these types of

White-box vulnerability assessments provide the most accurate barometer to determine and mitigate risk of digital asset exposure. Recently however, entertainment IT organizations have demonstrated a preference for the far lesser effective approach of black-box penetration testing. This incongruous situation may be a result of confusion, wherein executives procuring security guidance (and even some firms providing such guidance) do not fully understand the distinction between different evaluation types and methodologies. In this article, we attempt to disambiguate the terms and analyze the trend.

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evaluation can be seen in how they are (or should be) priced. As with any service engagement, one pays for time and materials, with a premium for quality and skill. The cost of a vulnerability assessment relates to the effort required for a team of experts with full access to evaluate a system front-to-back, address all threat vectors, propose mitigations, and assign risk. The scope of effort is more or less fixed and limited by the size of the supply chain, infrastructure, application, or subset thereof. Conversely, the price of a penetration test is largely driven by budget: the amount of resources devoted to simulating an attack determines the cost, and budget parameters are met simply by manipulating effort input, irrespective of how the effort input affects result output. Due to heavy reliance on automation, penetration tests typically cost less than vulnerability assessments. However, penetration tests also produce woefully incomplete results, leaving blind spots that are not factored into risk calculation.

Methodologies

In addition to selecting a type of evaluation, IT executives must also select a methodology to apply to that evaluation. The two methodologies most relevant to the entertainment industry are white box and black box.

The most succinct distinction between these methodologies comes down to knowledge. In a white box assessment, the evaluator has full detailed knowledge of system functionality. In a black-box assessment, the evaluator has very limited knowledge, obtaining information only from outputs that result from varying test inputs, and with no knowledge about the inner workings of the technology.

The results of a white-box methodology are of very high value in calculating risk, as it can be determined with high confidence that most or all of the vulnerabilities present in the target technology have been identified. However, entertainment industry IT executives have recently been trending towards a preference for black box. This seems to stem from an interest in having an evaluator assume similar conditions to that of a real-world adversary. This intuition is flawed in that with a black-box methodology it is ultimately the tester that is evaluated, rather than the target system. Results may determine the risk of that specific evaluator succeeding, but proves little

	BLACK BOX	WHITE BOX
PENETRATION TEST	<p>Risk Confidence: Low Goal: Breach Defenses Knowledge: Incomplete Term: Short Scope: Known Vulnerabilities Automation: Heavily Used Suitability: Casual Attackers Results: Incomplete Tailoring: Commodity Pricing: Highly Variable</p>	<p>Risk Confidence: Medium Goal: Breach Defenses Knowledge: Complete Term: Short Scope: Known Vulnerabilities Automation: Heavily Used Suitability: Casual Attackers Results: Incomplete Tailoring: Commodity Pricing: Slightly Variable</p>
VULNERABILITY ASSESSMENT	<p>Risk Confidence: Low Goal: Identify All Weaknesses Knowledge: Incomplete Term: Medium to Ongoing Scope: Entire System Automation: Minimal Use Suitability: Targeted Attacks Results: Incomplete Tailoring: Custom, Manual Pricing: Highly Variable</p>	<p>Risk Confidence: High Goal: Identify All Weaknesses Knowledge: Complete Term: Medium to Ongoing Scope: Entire System Automation: Minimal Use Suitability: Targeted Attacks Results: Complete; High Value Tailoring: Custom, Manual Pricing: Firm</p>

This chart details the two methodologies recommended for companies to best assess security.

about what other adversaries might achieve or about the entire range of weaknesses that may exist. Furthermore, the results of a black box methodology are of lower value in calculating risk: if vulnerabilities are discovered, there is no way of knowing that all vulnerabilities have been discovered, and as a corollary, if no vulnerabilities are found, it does not mean there are not any vulnerabilities.

As with the distinct types of evaluations, pricing also reveals notable differences between distinct methodologies. Pricing of a white-box approach is related to project completion, and scope is scaled to meet budget parameters by adding or omitting components. Although component omission creates blind spots, the existence of such blind spots is known and thus accounted for in risk assessment. Conversely, pricing for a black-box assessment correlates to effort invested, and scope is scaled to meet

budget only by modifying effort input. However, reducing effort (i.e., as a method to reduce cost) only reduces the thoroughness and usefulness of results in determination of risk. Blind spots are unknown, significantly weakening the confidence of the resulting risk assessment.

Best Practices

The most effective calculation of risk is derived from the combination of white-box methodology and vulnerability assessment. A white-box vulnerability assessment enables an IT executive to best prioritize future development cycles in order to address most crucial weaknesses first. The entertainment industry should migrate away from current trend preference for black-box penetration tests, which produce a false sense of confidence in otherwise heavily exposed systems, and migrate towards the more effective approach of white-box vulnerability assessment. ■



Ted Harrington is Executive Partner at Independent Security Evaluators (ISE). He is passionate about business-centric security approaches that harmonize with strategic objectives of enterprise customers.

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Three Rules for Password Sanity

Your first line of defense.

By Stan Stahl, President,
Citadel Information Group



Abstract: Let's start with the obvious. We all hate passwords. Users hate passwords because they are hard to remember and they slow you down, getting in the way of the computing experience. IT staff hate passwords because they're just one more critical thing that needs to be managed, taking valuable time away from keeping computer systems running and users happy.

The information security community hates passwords because they're too often a source of conflict with users who don't want to use them properly. And, truth be told, they are completely ineffective once a cybercriminal has installed a keylogger on the victim's computer. Online bank fraud tools like Zeus and SpyEye install a keylogger to capture user login credentials and the answers to secret questions. Your money is no longer safe once the cybercriminal has your online bank account password and this other information.

According to Microsoft research, back in 2007 the average user had 6.5 passwords, each of which was shared across 3.9 sites. Each user

had about 25 accounts that required passwords and typed an average of eight passwords a day. Demonstrating the challenge users have remembering passwords, the research showed that 1.5 percent of Yahoo users forget their password each month.

Users are notorious for using weak passwords. The most common passwords in SplashData's 2012 annual list of most-common passwords lists 'password,' '123456,' '12345678,' 'abc123' and 'qwerty' as the five most frequently used passwords. A 2011 study by KoreLogic presented at the Austin OWASP meeting suggests that fewer than 10 percent of users have passwords that are complex enough and long enough to resist basic cybercriminal attacks.

Hated or not, passwords are often the only credible line of defense protecting sensitive information.

Which takes us to another obvious: Passwords — at least for the short term — are here to stay.

Therefore, it only makes sense that we learn to live with them ... happily ever after.

Why Do You Use a Password

You use a password to authenticate yourself, to establish that you are who you say you are.

A password is the cyber-equivalent of a driver's license or a passport; it says you're you. Once the computer system or web page 'knows' that it is interacting with you, it gives you access to those files and services that you are 'authorized' to use.

Three Rules for Password Sanity

Rule 1: Keep your password private.

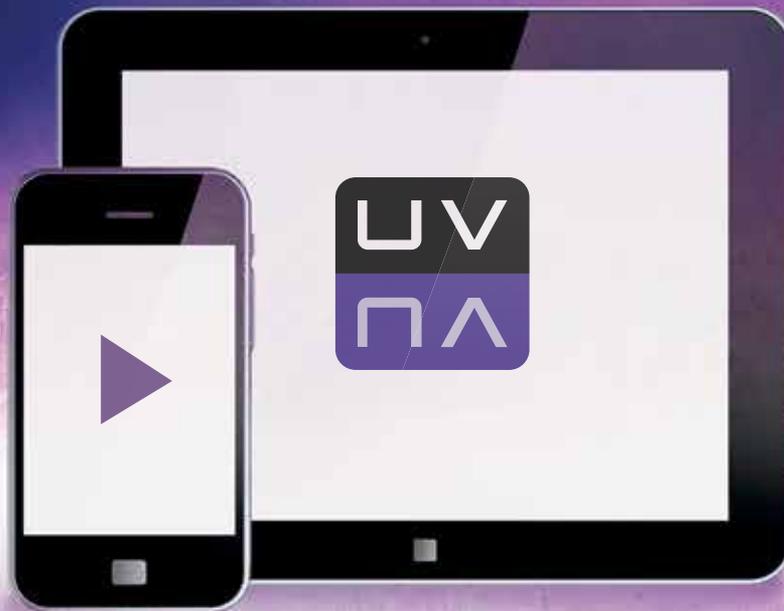
Since your password is used to authenticate you, anyone with your password can pose as you.

With your passwords [and either your easy-to-get name or email address], a cyber-criminal can spend your money at Amazon, send an



Dr. Stahl is a pioneer in the field of information security, having entered the field in 1980. He began his career securing teleconferencing at the White House, databases inside Cheyenne Mountain and the communications network controlling our nuclear weapons arsenal. As President of Citadel Information Group, he brings this experience to business, government, and the not-for-profit community.

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abusive message to your friends on LinkedIn and move money from your bank account.

If a cyber-criminal has your work password, the computers and programs you use will give him the same rights to do things that you get. He can read your files, send email from your account and conduct the same transactions you do.

Putting a password under your keyboard or on a post-it note slapped on your monitor is an invitation to information theft. If you must write your passwords down, store them with the same care that you store your money, your wallet and your passport.

Rule 2. A password used to access sensitive information needs to be long, complex and unique. Passwords need to be long and complex because cybercriminals have several software tools that let them quickly crack passwords that are too short or inadequately complex. Passwords like '1234567' offer little or no protection. Length without complexity is not adequate; the Korelogic study cracked long non-complex passwords like 'Januarybaby2010!' and 'Abcdefghijklmnopqrstuvwxyz.'

To see why passwords need to be unique, recall the theft of 6,000,000 passwords from LinkedIn last June. Users whose bank account passwords were the same as their LinkedIn passwords found their bank accounts at risk.

Citadel recommends a minimum password length of 12 characters, using a mixture of lower-case, upper-case, numbers and characters. They don't need to be totally random but as the examples above show, they do need to be complex. Examples include 'kla45Young##,' 'Plokr/*u1234' and '54175rat-Tar.' One characteristic of all three of the examples is that the letter sequences are all pronounceable.

Rule 3: Consider the careful use of a password manager Imagine only needing to remember one password!!! You can do this with a modern password manager... provided you're very, very careful.

Password managers store all your passwords for you so you don't have to remember them.

All you have to remember is the one master password that gives you (and your programs) access to all the passwords stored in the password manager. Modern password managers integrate right into web browsers: visit a Web site, click a toolbar button and the program logs you in automatically.

Password managers, though, are like dynamite. Dynamite is great when it's knocking down a hill so we can put in a new road. It's not so good, though, when the hill falls on the workers.

The Open Directory Project has compiled a large list of password management programs. Citadel has experience with two of them: KeePass and Roboform. There is no denying the convenience of a good password manager.

There are three key questions to consider in using a password manager.

1: How sensitive is the information being protected? All software — even password managers — have vulnerabilities that expose them to cyber attack. This means that using a password manager necessitates a trade-off between convenience and security. Making this trade-off requires balancing the loss that would be incurred from using a password manager against the gain in convenience achieved from using the manager.

That's why the NSA, for example, wouldn't authorize the use of a password manager without extensive security testing and certification.

The situation is analogous in any commercial environment, businesses, not-for-profits, government agencies, etc. Before authorizing the use of a password manager in a commercial environment, management must consider the risk to sensitive information and operations. This is a cyber-security management function. Users should not be free to install their own password managers but must follow their organization's security policies and standards before using a password manager.

Consumers at home often have less sensitive information than at work. Credit card and banking regulations, supportive of consumers, lower the risk to consumers from using a

password manager.

2: How well does the password manager protect your information? An excel spreadsheet makes a basic password manager; just not a very secure one. A password manager is the key to all the keys in your kingdom. It had better do its job and do it well. A password manager's most important job is security. It is not convenience. It is not a pretty interface, or anything else.

Of particular concern are password managers that store passwords in the cloud. Even though the passwords may be encrypted, they may still be at unnecessary risk. This is particularly true if the master password is also stored in the cloud.

Testing the security of password managers can pose difficult challenges making it hard for consumers to evaluate the security of password managers. I recommend reading several reviews from different sources, honing in on the security testing that was done. Keep in mind that security testing is different from merely listing security 'features.'

3: How well do you protect the keys? No matter how well designed a password manager is, it is worthless if the user doesn't protect it with a strong master password. Citadel recommends users protect their password manager with a complex password that's at least 15 characters long.

We also recommend setting the password manager to self-destruct after 5 – 10 invalid attempts to enter the master password. This is particularly true when the password manager is installed on a laptop, tablet or smartphone as these devices are prone to being lost.

Defense-in-Depth

Passwords are a necessary element in defending access to sensitive information and services. But, as we discussed above, passwords offer no protection against the cyber-criminal able to install a keylogger on a user's computer. Additional defenses — like spam filters and employee awareness training — are also required as a part of any thorough cyber-security management program. ■



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Transforming Entertainment Through Technology

Measuring efficiency gains in digital content distribution.

By Raymond Drewry, Principal Scientist, MovieLabs
and Don Dulchinos, Executive Director,
Entertainment Identifier Registry Association (EIDR)



Abstract: In the new world of media and entertainment distribution in the digital age, a key landmark was reached in August of 2010 with the formation of the Entertainment Identifier Registry, or EIDR, by founding members MovieLabs, CableLabs, Comcast, and Rovi. EIDR provides a Universal Media ID for movie, TV and other audiovisual content. EIDR's mission is to drive out inefficiencies in the supply chain, enabling new business models and workflow processes to support the increasing opportunities and complexities in the digital distribution of content.

The Entertainment Identifier Registry (EIDR) supports its mission by providing not just standalone IDs, but linked sets of IDs that can identify not only a work, but also all of its versions, encodings and related content. These identifiers are backed up by a network-based API that is used to create IDs, discover IDs, retrieve the underlying metadata and follow connections to other identifiers (such as finding a TV Series from the H.263 encoding of an episode, or finding the Spanish-language director's cut of a movie based on the identifier of the U.S. theatrical release). Finally, EIDR supports the inclusion of identifiers from other systems, allowing interoperability across systems that use legacy identifiers.

In the summer of 2013, the EIDR consortium numbered close to 50 member companies, with new members added every

month. Some key members, including Microsoft, Google, and Vudu, are working with studios to define a standardized architecture for digital content distribution and retailing.

This paper explores the value of using an EIDR global unique identifier in the media and entertainment industry supply chain, with a focus on how using a standard content identifier automates and streamlines digital delivery. This paper summarizes a use case that has already been implemented and deployed by EIDR members Warner Bros. and Microsoft on the Xbox Live platform.

Laying the Groundwork

Since the founding of EIDR, all the major studio members and many other supply chain members of the EIDR consortium have engaged in many different implementation exercises. Some examples are given in Table 1 on the following page.

Table 1: EIDR Use Cases

ID CREATION	
Registry Seeding	Participants generate EIDR IDs for existing catalogs. Participants include content owners, metadata suppliers, and film and television archives.
Title Management	Content producers create EIDR IDs at the start of the production cycle, ensuring that the work always has a globally understood unique ID.
Catalog Matching	Existing catalogs are matched against the EIDR database. EIDR IDs are applied to the records in the source database and useful identifiers from the source database are added as EIDR Alternate IDs.
DISTRIBUTION AND METRICS	
Cable Video on Demand	The EIDR ID is used to coordinate assets and metadata from multiple suppliers.
UltraViolet Distribution	EIDR IDs streamline the process of providing the right version of a video asset (HD, SD, with subtitles, etc.) to a specific customer on a specific device.
Uniform Reporting	EIDR is used to track and aggregate box office results for films in theatrical distribution and measure uptake in on-demand systems.
Music cue sheets	EIDR IDs are included in music cue sheets, providing greater certainty than traditional title-based cue sheets when managing music royalties for a video asset and its different versions.

Warner Bros and Microsoft have collaborated to pioneer a new class of EIDR implementations. The pilot covers new release theatrical titles owned by Warner Bros and ordered by Microsoft for sale in the online storefront on Xbox Live. The goal of the pilot was to use EIDR identifiers and APIs to address manual process steps that resulted from a lack of a unique product identifier across the content ordering, delivery, and reporting processes between Warner Bros and Microsoft. These manual steps introduced cost, error and delay into the process.

Several Warner Bros. departments participated in the pilot. The Avails group researches available titles and announces title lists to customers. The Data Servicing team manages Warner Bros.’ master data system and requests EIDR IDs. Digital Distribution Operations manages and supports the outbound digital supply chain, and Distribution Services/DETE manages orders and creates and delivers the digital assets ordered by the retailer.

On the Microsoft side, the Content Management and Operations group manages the

receiving side of the system. The group processes the avails list, orders titles, receives and validates the digital assets, pulls in metadata from various sources, and provides sales and royalties reporting.

The existing system had a great deal of manual collation, review, and decision making within the two companies as well as for the multiple communications between them. The pilot was designed to address a number of key issues raised by this:

- **MANUAL COMMUNICATION BETWEEN STAGES OF THE PIPELINE:** Each stage in the pipeline takes data from the previous stage, and so each stage has a data ingestion and import component. Matching assets to data throughout the workflow has generally the same issues at each stage of the pipeline as it does at the endpoints – human review of assets and data, manual collection of data from multiple sources, etc. The most obvious example of this is what is traditionally called ‘ingestion’ – the receipt by one party of an asset delivered by another.

- **MANUAL QUALITY CONTROL:** Assets

delivered from Warner Bros. to Microsoft must be identified manually since the same movie may be delivered in multiple versions. Other digital workflows (for example digital cinema) address this by standard naming conventions for files, but that is a suboptimal solution to the problem.

- **ASSET QUERIES:** It is difficult to reconcile delivered assets with only title information. For example, the title alone will not provide information about whether the delivered asset is a modified or censored version, what audio and subtitle tracks are available, and so on, all of which are essential for retail presentation.

- **CUSTOMER QUERIES:** Responding to retailer inquiries and maintaining data logs and spreadsheets is bogged down by the need to collate and sift multiple data sources.

- **CONSOLIDATED REPORTING:** Manual searches across multiple sources of data for Product Performance Reporting, Asset Delivery Metrics, Tech Ops Invoicing, etc. are time consuming and error-prone.

EIDR was used in all of these situations,



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from the publishing of avails all the way through the ordering, sales, and reporting process. The common theme at each point was to take advantage of the reliable unique identifier to remove the human element in matching and collation and, when necessary, use the API behind it to support more complex tasks.

Pilot Planning

There were several set-up activities and decisions that had to be considered for a successful implementation. The most important were scope planning, data structure planning and preparation, and the actual integration of systems and work flow.

Scope planning is common across any IT project, and includes appointing a leader and sponsor for the initiative, deciding on the scope of the project, determining which work-flows will be involved, and conducting regular planning and status meetings.

Planning and preparing the data structures for the EIDR pilot had several components. The backbone of this is the integration of the EIDR ID into end-to-end processes. At a high level, this includes generating EIDR IDs for the video assets at both title and version level and including the EIDR ID in the avails and metadata provided by Warner Bros. to Microsoft, the orders placed by Microsoft, the asset files delivered to Microsoft, and the point of sales reports returned by Microsoft to Warner Bros.

Because some of the titles being made available were from back catalog (that is, before Warner Bros. started to generate an EIDR ID for each new title), other EIDR members had registered EIDR IDs for many of the titles to satisfy their own business needs. Hence, the titles needed for the project had to be matched against the EIDR database to see if they already had an EIDR ID. If not, they had to be registered.¹

The last planning step was to design the system to communicate EIDR IDs to Microsoft in the avails so the IDs could be used for ordering and reporting.

Pilot Implementation

Integrating the systems and workflows had several components. The first, of course, was to document the existing process and the detailed work plan for the technical integrations.

The pilot required two new integration points within Warner Bros. First, a new in-

terface had to be designed to obtain an EIDR ID for all new titles and apply the ID in MSB (the Warner Bros. Metadata Management System). This was similar to many other existing EIDR integrations and used standard EIDR APIs and practices. Second, the interface between MSB and the Digital Avails Portal had to be updated to provide the EIDR ID for the avails, allowing Microsoft to use EIDR IDs when ordering and reporting back to Warner Bros. This required modifying the avails list to include a spot for the EIDR ID and involves a process any IT organization will be familiar with.

Both of the integration points can be used as-is with future digital distribution partnerships, and so are a one-time cost.

Making the EIDR ID truly pervasive required touching several systems and protocols

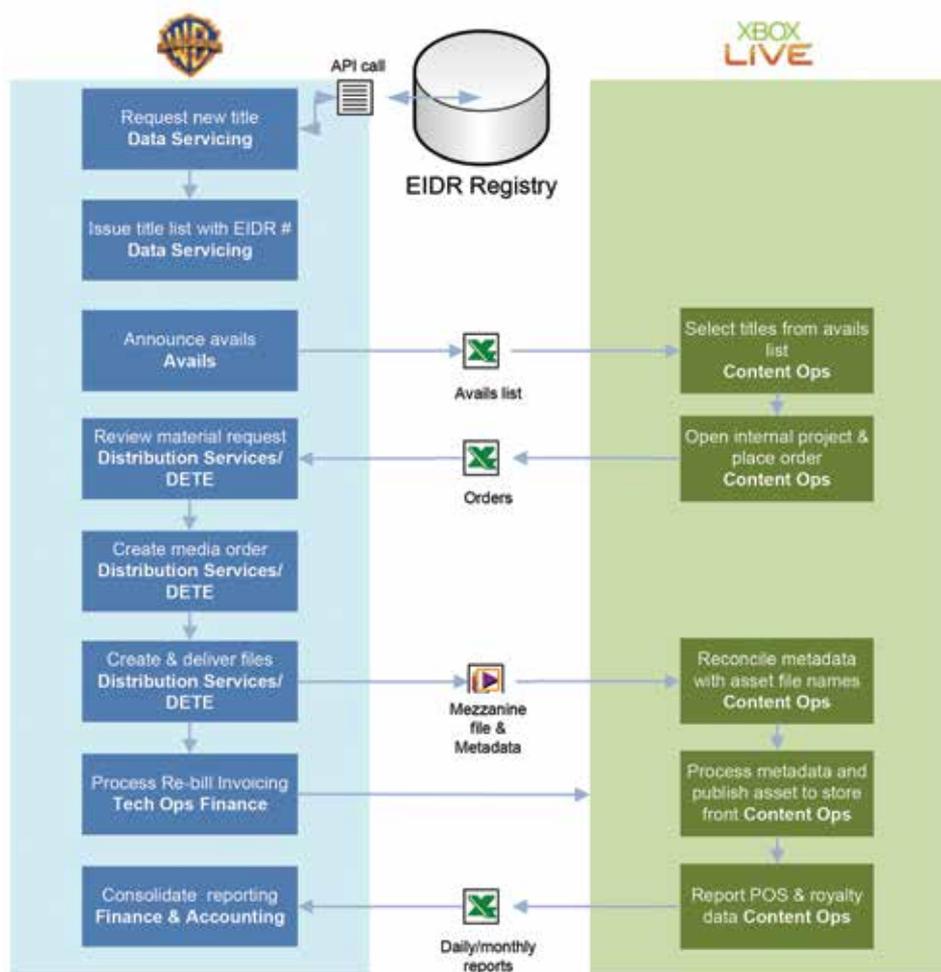
within and between the two companies. It had to be included in the avails list, all meta-data communication, and files and file names to enable coordination of the multiple phase of the pipeline.

Although the initial pilot continued to use some spreadsheets, the inclusion of EIDR IDs in those spreadsheets reduced the time, effort, and errors associated with manual matching of titles and versions. The presence of the EIDR ID in the transactions paves the way for full automation of many of the communication paths.

Case Study

After the pilot was deployed, Cognizant was commissioned to work with Warner Bros. and Microsoft to write a case study that analyzed the costs and benefits of the

EIDR IDs for Warner's Back-Catalog



¹Warner Brothers is currently working on a project to get EIDR IDs for their entire back catalog. Once that project completes, this step will no longer be necessary for them.

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Summary of Realized Benefits

PROBLEM	SOLUTION	SAVINGS
Manual Communication: Asset Ingestion/Manual Quality Control	Use EIDR ID for avails, ordering,	270 hours/year per partner
Manual Communication:	Use EIDR ID for ordering, delivery, and delivery confirmation	375 hours/year per partner
Delivery Reporting/ Asset Queries	Use EIDR ID for avails, ordering, Customer Queries and delivery	7 hours per year, plus fewer distractions in day to day operations

approach. Cognizant worked with both companies to identify participating departments, key contacts in each department, and the affected workflows and processes. After initial meetings to understand the previous and EIDR-based processes, questionnaires were created and customized for each department to capture the following information:

- Initial investment activities and efforts for planning, data preparation and integration of EIDR into the workflow.
- Workflow changes and corresponding qualitative and quantitative benefits from EIDR.
- Additional benefits realized including elimination of spreadsheets, organizational improvements, or lower vendor fees.

Finally, the case study collected information about any hardware and software costs required to support the EIDR integration.

Direct Benefits

The case study determined that the pilot had numerous immediate benefits with respect to the issues that had been raised before the pilot.

REDUCED MANUAL COMMUNICATION – ASSET INGESTION

Inefficient transfer of data between stages of the pipeline was given as a significant problem. Here we examine the particular case of transferring the assets that have been ordered from Warner Bros. to Microsoft.

In the original system, assets had to be manually inspected, files opened, and so on to determine which asset was being delivered,

and then collated against the order sheet. This was addressed by providing EIDR IDs in the avails list, adding the EIDR ID to the name of the delivered file, and using EIDR for matching the mezzanine files. With that in place, Microsoft only had to match the EIDR ID in the file name to the EIDR ID in the avails list.

Warner Bros delivers approximately 5,400 files per year to Microsoft, each of which took 1-2 minutes for quality control on the matching. The new system effectively removes that effort, saving 270 hours/year or approximately .15 FTE.

REDUCED MANUAL COMMUNICATION – DELIVERY REPORTING

Another case of inefficient communication involved the asset delivery reports from Microsoft to Warner Bros. These reports state which of the assets that Microsoft has ordered

have been successfully delivered to the retailer.

In the original system, these reports were based on fuzzy matching between the delivered titles and the ordered titles. This was improved by matching the EIDR ID of the asset that was ordered to the EIDR ID of the asset that was delivered. This is an exact match, not a fuzzy string match that requires human confirmation.

There are about 100 ad hoc requests for delivery reports per year, which took on average five hours per request. Conservatively, this was estimated at 375 hours per year, or approximately 0.22 FTE.

Asset Identification Queries

The customer (Microsoft) would often have questions about asset identification and delivery, for example when a fuzzy matching algo-

Continued on next page



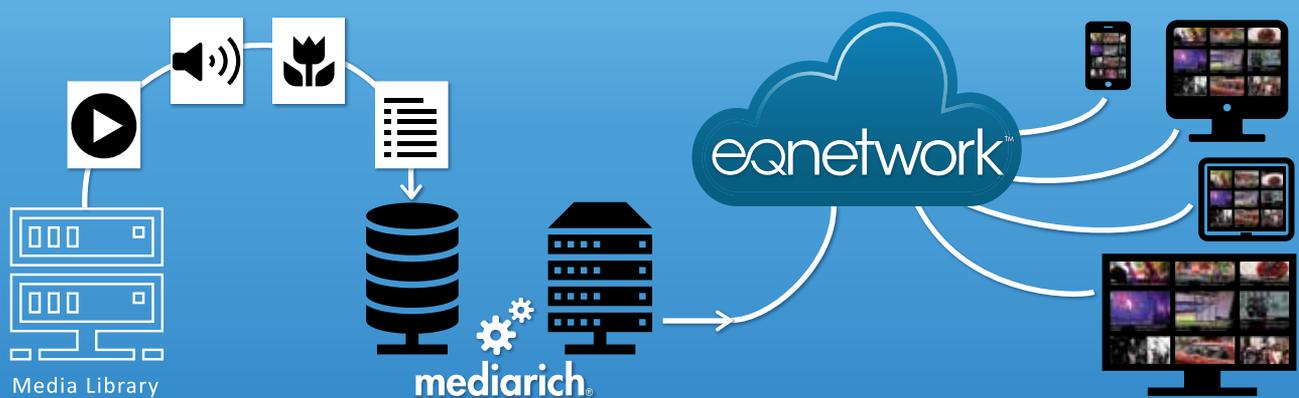
Don Dulchinos is responsible for growing and extending the use of EIDR as the top-level Universal Media ID for all movie and TV content. EIDR's mission is to drive out inefficiencies in the supply chain, while enabling new business models and workflow processes to support the increasing opportunities in digital distribution of content. EIDR is an independent non-profit entity with Founders including Cable Television Laboratories, Movie Labs, Comcast, and Rovi.



Raymond Drewry has been in the industry for 25 years primarily as a technologist. He has designed and implemented systems that range from the first fully interactive digital cable network in Europe, through the first-ever networked digital video system for journalists at an international sporting event, to real-time robotics systems for special effects and mechanical-industrial performance pieces.



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Making the digital pipeline more efficient and less costly will encourage the creation of new and innovative businesses based on digital distribution.

rithm gave non-intuitive results or when an expected asset was not delivered.

In the original system, Warner Bros. had to spend time researching these queries based on the various identifiers in different parts of the pipeline. By using EIDR IDs in the avails, ordering process, and file names, the number of queries has been reduced and the queries that do occur are easier to resolve.

The benefits from this are mostly intangible – Microsoft does not disrupt its workflow to make the queries, and Warner Bros. does not have to answer as many customer requests, manage the accompanying logs, and so on. Microsoft had been making 50 or so queries a year, each one of which took 5-10 minutes to resolve. This equates to about seven hours per year per partner – not a lot in the grand scheme of things, but certainly reducing a source of frustration.

Future Benefits After Full System Integration of EIDR

The integration of EIDR into the workflow has already led to improvements in efficiency and quality, as described above. There are several other areas beyond the initial scope that can be tackled now that EIDR IDs are flowing through the system.

Manual Invoicing Processes

Currently, Warner Bros. must manually match internal invoice line items with retailer product identifiers. To do this, Warner Bros. exports invoice data to spreadsheets and manually links every title to the retailer's ID or IDs. This process determines the material servicing and delivery fees.

The solution to this is to more fully integrate EIDR IDs into Warner Bros.' order management system. This will reduce the need to extract line items from invoices, research retailers' product identifiers, and do manual title matching.

It currently takes two days to process large files and an additional day to complete the per-item research. It is estimated that automating this process can save a further 1,000 hours per year, or approximately 0.5 FTE, based on the reduction in the time taken to do title matching.

Manual Performance Reporting

Currently, sales performance reporting is based on raw data files from retailers and involves manual title matching, and translation of retailer IDs. The work is particularly complex when developing business intelligence that covers multiple versions of assets or the relationships of episodes, season and series.

EIDR maintains a hierarchy that connects related records, such as particular versions or digital encodings of a title. The solution is to use this hierarchy all the way through to point of sale and in point of sale and royalty reports. This will reduce error in the reports and make them simpler to generate.

Currently, there are 3-4 high complexity reports per month, taking one to two days each, and 16 low complexity reports per year, each taking 2-4 hours. This totals approximately 96 hours per year, or about two weeks. The main benefit, however, is expected to be from more accurate and timely reports leading to better business decisions. It has been shown in many industries and circumstances that the availability of timely, correct, and relevant reports tends to drive improvements in the underlying business.

Next Steps for Standardization of Digital Video Distribution

For both Warner Bros. and Microsoft, the savings described in this study are per partner, not one-time events. Both Warner Bros. and Microsoft expect future business partners to benefit from this initial effort as well. The effort and pain of integrating in a unique

way with each successive business partner is greatly reduced.

EIDR Momentum Continues to Build

This case study documents a first step in the quest for greater efficiencies, some of which have been described above. As this article was being submitted for publication, EIDR members Microsoft, Google, and Vudu were meeting with the Hollywood studios under the auspices of the DEG: The Digital Entertainment Group on a Cross-Studio Digital Distribution Model that will align around EIDR as one of many elements of a modern and efficient ecosystem for digital distribution that includes operational processes, transactions, data and systems.

Such efforts in the digital distribution world are also expected to generate benefits for other players in the media and entertainment world, including Technical Services Organizations, Cable Service Providers and Broadcasters and Ad-Supported Digital Streaming Channels. Making the pipeline more efficient and less costly will encourage the creation of new and innovative business based on digital distribution.

The EIDR ID as universal identifier was a long-awaited concept. It has not taken long for various interested parties to develop numerous use cases for the identifier, setting the stage for efficient, streamlined work flows to support the new world of entertainment everywhere, anytime, on any device. Additional content owners, service providers, and media services companies continue to join the EIDR organization every month. Membership information, tools and resources are available at www.eidr.org.

Thanks to Cognizant Research, which was contracted to EIDR to document this case study, and to our colleagues at Warner Bros. and Microsoft. ■

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The One Screen Solution

A case study for digitizing the home entertainment industry.

By Atul Patel, Chief Executive Officer and Founder, OneScreen



Abstract: Answer this question honestly: When was the last time you purchased a DVD? Of course people are still buying them since the home entertainment industry makes big money – \$18 billion at the end of 2012, to be exact (*Wall Street Journal*). But considering the decline the industry has experienced since its 2004 peak of \$22 billion, it's clear that the ways audiences are consuming video are changing dramatically. From major production houses to niche producers, the home entertainment industry needs to find ways to stay relevant in the era of Netflix and Roku.

One may ask why big studios like Disney or 21st Century Fox should care about digital. Disney raked in more than \$10 billion overall last year, and there are always going to be people who want to own hard copies of blockbusters like “Iron Man” or “Thor”. But the number of DVD buyers will continue to shrink as adoption of streaming video increases and monthly subscription fees for unlimited “rentals” and more economical pay-per-view access become more appealing than paying \$19.99 to own the Blu-ray. I believe the DVD industry will follow a similar path to music’s digital progression; I’m using Google Play and Pandora with no CDs in sight.

The trend is evident:

- Netflix reported U.S. streaming revenues of \$2.19 billion in 2012 (with moderate growth through each quarter), while the U.S. DVD business totaled \$1.14 billion and declined each quarter during this period (*Bloomberg*).
- Netflix has grown its subscriber base to 38 million users worldwide, received 14 Emmy nominations for its original programming, and recently surpassed HBO’s paid subscriber base.
- More than 6 billion hours of video are watched on YouTube each month.
- *eMarketer* predicts that by 2014, digital TV and movie streaming will



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I predict we will see more large production content made available digitally because studios know they need to be where their audience is watching – online.

surpass 50 percent of the U.S. Internet user population.

There's money on the table when it comes to digital video; the major production studios are well aware, which is why Disney has a massive library of content available on Netflix, and at the time of writing this, Paramount Digital Entertainment made the digital version of "Star Trek into Darkness" available for download on iTunes before its DVD release. I predict we will see more large production content made available digitally because studios know they need to be where their audience is watching – online.

Straight-to-DVD companies are likely having a harder time finding their digital footing. There's little demand for content like seasonal holiday specials, self-help, or specialty fitness on streaming video services, and when buyers aren't spending as much time in the store, product awareness is hard to come by. Small DVD producers are competing against thousands of others who are also trying to find buyers on Amazon and iTunes; they need a digital method to connect with their fragmented buyers.

Reaching Digital Audiences Through Applications

Whether you're Lionsgate or a health and wellness video producer like Gaiam cross-device video applications are powerful tools for establishing a home for the DVD business model in digital. The U.S. consumer has an average of five connected devices for viewing video, and apps or "channels" are the primary way to reach audiences on these devices. Furthermore, nearly 33 percent of U.S. adults reported watching over-the-top content daily, and 59 percent reported using OTT weekly. Having a video application on these living room devices (e.g., Google TV, AppleTV, Roku, Boxee, Chromecast) and their tablet and phone counterparts enables DVD businesses to make entire libraries of their content available online,

through a single application where audiences can preview, watch, and, most importantly, buy content.

So, How Do You Monetize?

Traditionally, video applications in device marketplaces like Google Play and iTunes are either free (and monetized through advertising) or paid, which gives you ad-free access to the application's content. However, in-app content purchases can empower DVD businesses to map over monetization structures comparable to their DVD ends of their business.

OneScreen recently had the opportunity to develop a Google TV video application with NatureWindow.TV, a producer of high-definition nature and landscape videos. The application is free to download in Google Play and allows users to "preview, purchase, and play" NatureWindow.TV's video content on their TV. By integrating with Google Wallet, single videos can be purchased for \$1.95, or users can buy NatureWindow.TV's entire catalog for \$19.95. We decided to build the application around in-app purchasing instead of monetizing through ads or subscription fees because in-app purchasing enables NatureWindow.TV to sell its content rather than "rent it out." Furthermore, we wanted to take advantage of the behavior that casual gaming has established where users install and experience some content for free with options to purchase virtual goods and unlocked levels as incentives for deeper engagement.

Why Migrate to Digital Now?

Although a single video application will likely not make up for the eventual decline of DVD sales entirely, there are several reasons to make the switch now. Even if you are only bringing in "digital pennies" compared to "analog" dollars, pennies are still valuable. Your investment during this transitional period will fuel audience adoption

and lead to more revenue down the road.

■ *Technology can streamline digitalization of your media business* – To power NatureWindow.TV's video application with content, we ingested its entire video library, over 40 hours total, into OneScreen. This has several benefits for the client. NatureWindow.TV now has a central platform where they can manage and organize its digital assets, from video files, to metadata to device encoding. And because we have NatureWindow.TV's complete content library, we are able to efficiently roll out applications across other devices without having to track down and organize its assets each time. By simply creating a video application, the right partner can provide DVD businesses with centralized digital hubs for managing content.

■ *Devices and platforms are empowering digital audiences to consume everywhere* – The number of choices audiences have for consuming video content is immense – from buying the DVD to watching on one of many streaming video services. Tracking down and purchasing a DVD seems complicated (and archaic) when you consider that the same or similar content can often be watched instantly online through a simple search. However, although someone may not want to track down and purchase single DVDs, they may be open to purchasing that same content when they can instantly buy and watch single videos and even entire collections on their favorite devices.

Internet-to-TV video viewing doubled in 2012, and online video traffic is predicted to account for 69 percent of global Internet traffic by 2017 (Cisco) while DVD purchases continues to decline. It's safe to assume that online video will eventually catch up and even outpace revenue from other forms of video consumption. At least by creating video applications for their content now, home entertainment companies will have a presence for digital audiences to find them and will be well-versed in digital workflows by the time their success or failure depends on digital sales. Whether your library has 10 or 1,000 videos, it's time to digitize your business. ■



Atul Patel is the CEO and Founder of OneScreen, a business-to-business digital video service that empowers publishers, producers, and advertisers with a network to discover opportunities, a platform to manage operations, and a marketplace to transact business. Atul has more than 12 years experience in strategy and product development in video, display, mobile, and direct response advertising.

Is managing Studio Avails stressing out your team?

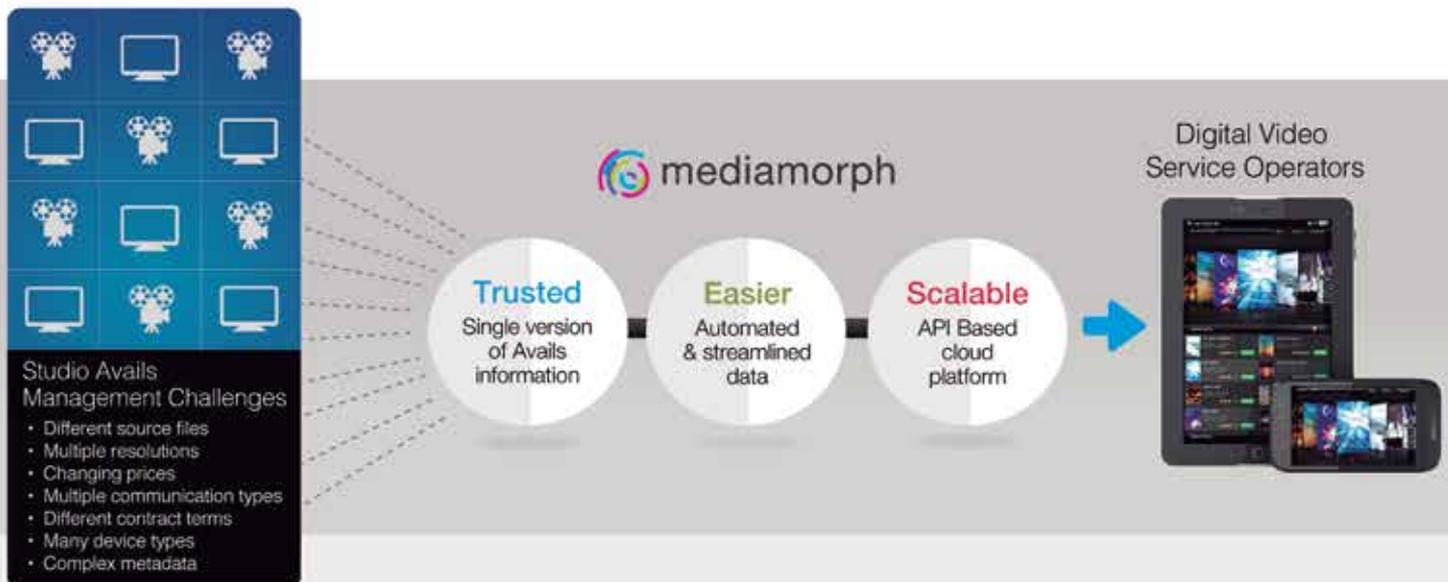


Why managing Studio Avails is challenging

Delivering licensed content from multiple providers to your video platforms can be challenging and complex. Differing Avails report formats, contract terms, languages, territories, window dates, devices, metadata formats, and asset formats all must be pulled together. What's more, content volumes are growing and the number of content providers each video service works with is rapidly increasing. Manually handling this information can lead to mistakes, time delays and, in the end, additional costs.

Mediamorph Connect

Mediamorph Connect offers the easiest way to optimize and scale the management of your Avails information from the Studios into your system. Our software and managed service team will automate the process and information flow to your team in a trusted single version of the Avails information, making it easier for your team to make content and scheduling decisions, with the added confidence that the information is correct.



About Mediamorph

Mediamorph's industry-leading platform is the solution to these types of challenges; helping Media & Entertainment companies prosper in a rapidly changing environment. We began by working with content studios to help them collect rights, performance, and social data on an industry-wide scale. Today every major Hollywood studio and leading television networks use our software to automate and streamline their data, allowing them to operate more efficiently and effectively.

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Supply Chain Stages of Maturity

Utilizing maturity models to assess M&E capabilities and guide operational strategic development.

By Doug Reinart, Senior Advisor, ContentBridge Systems, LLC



Abstract: Maturity is a term that carries positive, neutral, or negative connotations depending on context. As adolescents, we are eager to demonstrate our maturity. When we achieve certain age milestones, we are less inclined to advertise our maturity. We all probably know a few individuals who have made systematic efforts to avoid maturity altogether.

In business, we are all familiar with the concept of industry life cycles (development, growth, maturity and decline). We understand that, intrinsically, industries evolve through phases of maturity. We like to think that our media and entertainment industry has found renewed growth as it progresses through a massive digital transformation.

“Maturity” becomes a more insightful concept when describing the capabilities of an organization, measured against the industry as a whole. Maturity models offer a useful lens to assess a media and entertainment company’s existing capabilities and guide operational strategy development. To see this, let’s examine a prospective maturity model for content owners as they deal with a rapidly evolving content distribution landscape.

Content Supply Chain Landscape

For much of its history, the film and television industry enjoyed relative stability in the distribution of its product. Standards largely developed and controlled by the major studios and broadcasters greatly reduced operational complexity. From 35mm film print and broadcast television to digital cinema, VCR, DVD, and Blu-ray, content owners could build operations around well-defined deliverables.

Media and entertainment businesses have experienced a staggering increase in operational complexity with the advent of the “on demand” content supply chain. File formats and delivery specifications are in constant flux. New services and business models continue to emerge. Content owners no longer control or benefit from unifying standards of distribution and exhibition in the emerging digital world.

THEY ARE STRAINING TO:

- Create digital file-based assets (if they were not already natively digital)
- Store, retrieve, and track those assets through production and distribution (functionality commonly part of a digital asset management system)
- Reformat assets and package them to satisfy the unique requirements of a varied and expanding set of distribution output partners
- Archive those assets in a manner that maximizes future sales while minimizing storage costs

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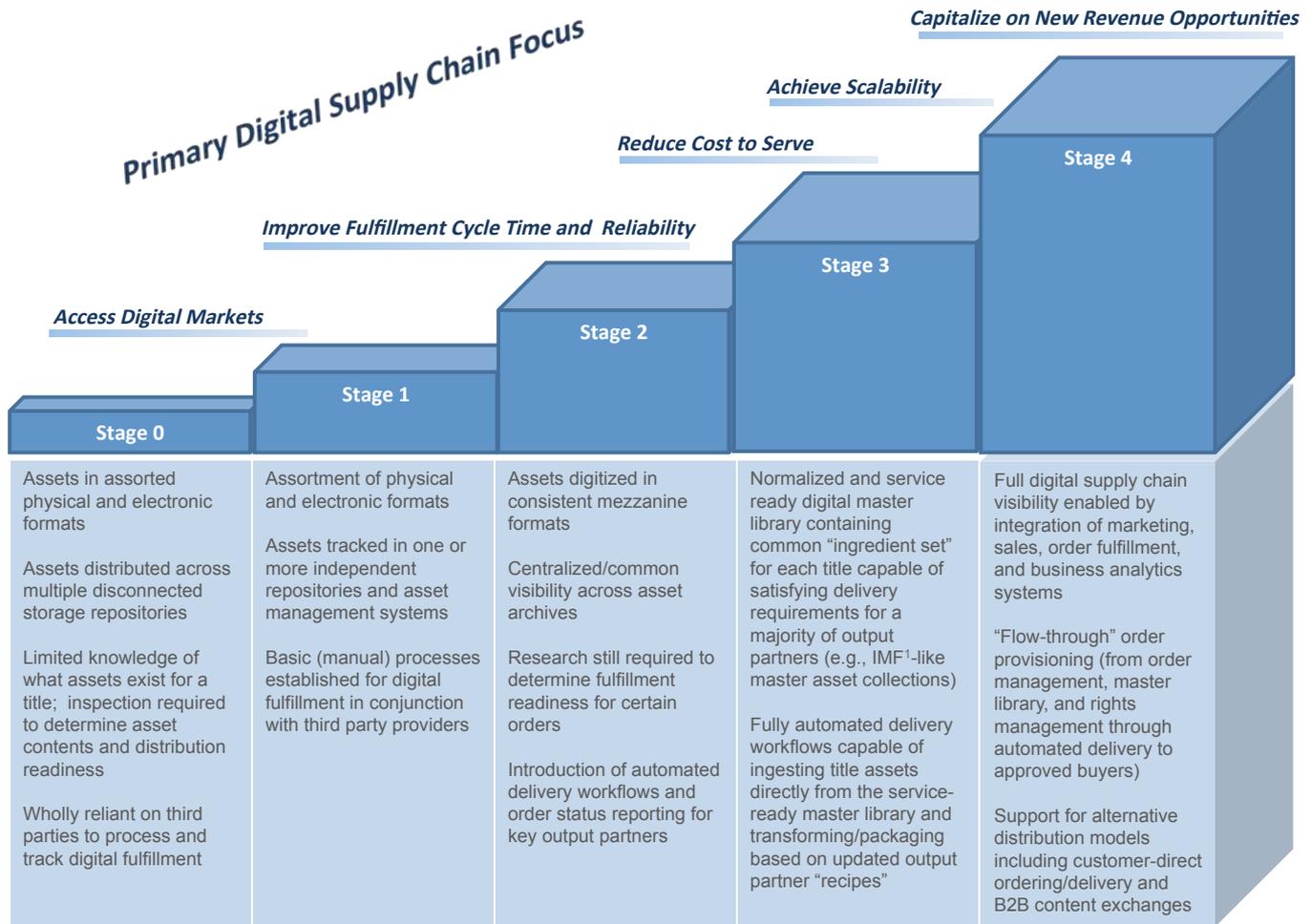
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	CD Burning	●	●		●	
 DVD	DVD Authoring		●			
	DVD Burning		●		●	
 Blu-ray Disc	Blu-ray Disc Authoring		●	●		●
	Blu-ray Disc Burning		●	●*	●	●*

*with 3rd party burning tool

Our media and entertainment industry has found renewed growth as it progresses through a massive digital transformation



¹ Interoperable Master Format currently under development within SMPTE Standards Committee

Operational complexity has robbed many content owners of focus on their core business: acquiring, producing, marketing and selling shows. The industry as a whole is quickly realizing that this is not sustainable. In fact, what we are witnessing is a natural progression through stages of (digital) supply chain maturity.

Stages of Maturity

Maturity models have existed for many years in other industries. The Software Engineering Institute's Capability Maturity Model (SEI-CMM) dates back to the late 1980s and

describes stages of software development maturity. Aerospace companies make extensive use of Technology Readiness Levels (TRLs) that describe the maturity of technologies before insertion into systems. At my old firm (PRTM) we used a stages model to success-

fully aid companies in evolving their product development and supply chain capabilities. Above is an example of what a Maturity Model might look like from the standpoint of content owners within the media and entertainment industry. ■



Doug Reinart is a senior advisor with ContentBridge Systems, LLC, focusing on digital supply chain innovations. He was Vice President Global Studios for Technicolor, where he led cross-service initiatives at major studios, and was active in defining new digital content distribution strategies. Doug also served as EVP Worldwide Operations for Paramount Pictures Home Entertainment, and Partner at PRTM Management Consulting (now part of PriceWaterhouseCoopers LLP).

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 **SCANAVO**

The New Digital Supply Chain

Taking a big data approach to delivering digital assets.

By Matt Turner, Chief Technologist,
Media and Publishing, MarkLogic Corporation

Abstract: To meet the demands of the diverse and complex digital market place, media and entertainment companies are streamlining digital servicing and building a new generation of digital supply chain applications using a Big Data approach to collect and manage digital products and assets. This new generation of applications provides users with the complete picture of all digital products across the organization, while creating workflow applications that reduce the effort of delivering digital products, power new innovative viewing experiences and provide data to report on and analyze utilization and efficiency.

Using real-world examples from studios and media companies, this paper will look at the challenges organizations have faced transforming workflows with traditional technology and how taking a Big Data approach brings new flexibility and agility to finding assets and delivering digital products. This approach changes the game and allows media and entertainment companies to make digital assets truly accessible within their organization and power the mass customization needed to stay ahead in the digital product race.

As the M&E industry expands with more content and channels, the complex problems of TV and film production, management, distribution, and monetization are rapidly becoming more challenging. Brevity, a two-year-old start up based in New York City, has introduced a breakthrough technology that combines workflow management, collaboration and more. Brevity transforms file-based workflows through a Web-based video management system that utilizes automated project-driven workflows, advanced compression algorithms, virtual storage and teraflops of computing power.

Across every sector of media and entertainment, digital adoption and changing media consumption patterns are changing the way organizations create, manage and deliver their digital assets.

What's needed is a new digital supply chain that leverages the complete picture of digital products across the organiza-

tion. From the metadata on the source digital assets to the title, product and rights information and including the external usage, organizations that can leverage this data will be able to take advantage of the opportunities in the digital marketplace.

However getting the complete picture of digital products remains for many organizations a far-off goal with multiple systems and traditional technology holding them back.

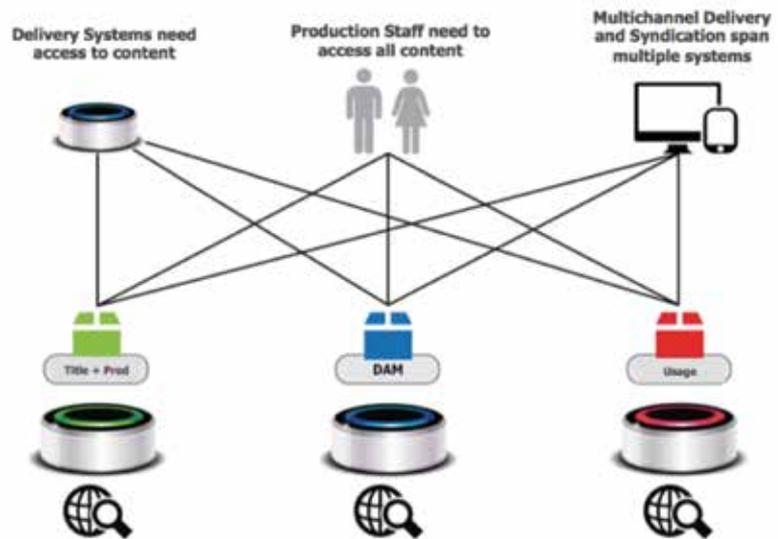
The Complete Picture

In today's digital marketplaces, getting the complete picture of digital products can have big implications for an organization.

Consider this scenario: a technical operations team is charged with delivering access to digital product information to:

■ Product teams that need access to assets to re-use them to create new products based on existing assets

Users and processes need to span multiple systems



divisions) to find assets and digital product information and piece them together in order to complete their tasks.

With this type of segmented workflow that is so reliant on human memory it can be difficult to scale to the demands of today's marketplace. With manual retrieval it can also be difficult to have an accurate log file of which types of assets drive the most revenue and what topics or types of assets are trending,

The Challenge

In the above scenario, the technical operations team has relied on digital asset management system(s), search technologies and federated search technologies. The team has found that all three solutions have serious drawbacks to providing access to the complete picture of the digital products.

All three solutions require pre-defining the data models and schemas for all of the information the systems that must also address the ways in which that information will be accessed. This pre-definition also determines how end users will search and query that information. As source information or workflows change, schemas then need to be up-

dated, otherwise these types of systems may not accurately reflect the new data sources.

Finally, to accommodate new data sources or to add new features, it often requires creating a new data model, creating delays of months or even years.

Because the operations team in our scenario is supporting teams that need to gain access to accurate, up-to-date digital product information from many different sources, these traditional approaches are not a good fit.

A Big Data Approach

Instead, our technical operations team is looking to address their challenges with a new generation of technology – created to handle the needs of today's information projects by taking a Big Data Approach.

Big Data is often defined as data that does not easily fit into the standard databases found in most organizations because of at least one of the following characteristics:

- Volume that can be overwhelming to traditional systems
- Variety of data that can be challenging to traditional systems

Continued on next page

- Servicing teams that need to collect and package assets for delivery to partners
- Management that wants to track usage and value of digital products

Like many organizations, the assets and metadata, information about the assets, are in many different systems including:

- Digital asset management systems
- File systems and local storage
- Rights management systems
- Product and title management systems
- External usage feeds and social media

Users need to login between these different systems (or worse, request colleagues in other



Matt Turner is the Chief Technologist for Media and Publishing at MarkLogic where he develops strategy and solutions for the Media, Publishing and Information Provider markets and works with customers and prospects to create leading edge information and digital content applications with MarkLogic's Enterprise NoSQL database. Matt works closely with MarkLogic's customers including McGraw-Hill, Warner Bros., Conde Nast and LexisNexis.

Our team is faced with a large amount of data that could grow in unpredictable ways with external data feeds and social media data, the data is from multiple complex sources, it is expected to change; and the users need to see this new data immediately for the system to be successful.

Traditional relational databases are terrific for singularly-purposed jobs – but do not scale to handle the Big Data complexities mentioned above. Instead, a new generation of Enterprise NoSQL database addresses the shortfalls of traditional technologies while changing the way data projects are developed, allowing teams to:

1. Work on original sources data instead of transforming data into application schemas
2. Have schema flexibility to address multiple and ever-changing data sources
3. Load data first and creating the views and user interfaces on that data
4. Provide search as the interface point across the different types of data

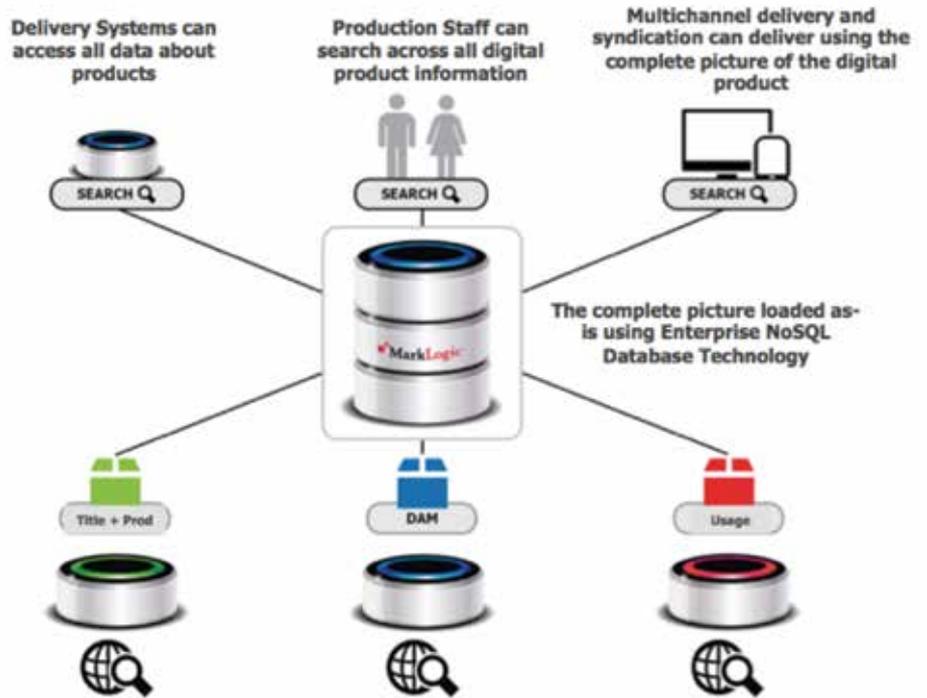
This approach matches the goals of our team – they need to address information from multiple, changing systems, provide users with search using the complete set of data from the source systems and do it quickly and keep the system current.

The Solution

To take advantage of these techniques, our team has chosen to use the Enterprise NoSQL. The solution our team has created leverages features that include:

1. Flexible schemas to accommodate many different types of data
2. Data loaded ‘as-is’ to maintain the integrity of the original data sources without having to transform or change the data to fit a single schema
3. Search to allow for discovery of data across all the sources
4. Application services to create APIs that the

Enterprise NoSQL Database Solution



end-user interfaces can use to tailor the experience to users

5. Security to ensure data access and integrity
6. Operational features for easy management of the system

The first step in creating the solution is to load the data from the source systems into the database as-is. This is a dramatically different approach than designing a data model and fixing in place how that data model can be used in the applications. Instead of months or even years, the team is able to quickly, in a matter of weeks, ingest all the data required to power the applications.

The second step is to create the interfaces and access points that will be used to create the user interfaces to the system including:

- Search and query functionality leveraging all the elements of the data that can be tailored for each application
- Asset delivery based on the exact data from the source systems. Users that inspect rights

records, digital asset metadata and product information can see the entire, accurate record from those source systems and partners get the exact metadata from the source systems to maximize the impact of the digital products in the marketplace

- Analysis reports to give the business visibility into digital product usage and costs

In this scenario, the team can then create multiple applications. The first application may be an application to search across the digital product information and quickly find assets, see their product and title history as well as check rights. The second may be the syndication systems needed to deliver assets to partners. Third may be new interactive views of the data presented to end users and more.

In addition to these applications, ongoing analytics of the data in the system provide the executive business owners with a view of their digital products. ■

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The Business of Managing Royalties

Key digital players look to streamline the complexity of the supply chain to better address royalty management.

By Martin Redington, Senior Vice President, Delivery & Product, Microgen and Olly Parkhouse, Marketing Specialist, Microgen



Microgen* Microgen plc

Abstract: There was a time long ago, probably before anyone currently on the earth, when music and acting performances could only be enjoyed in public venues such as music halls and theatres. Since the advent of vinyl records, television and eventually the Internet, creators of entertainment and those who broadcast it have fought tooth and nail for their share of the revenue. As the outlets for media products become more numerous, thanks to tablets, smartphones, e-readers and the like, the need for modern systems to effectively manage distribution and supply chains while tracking the royalties owed will become increasingly pressing.

In the days of video rentals, the whole process was much simpler. Physical copies of the film were ordered, printed and delivered en masse to retailers no differently than any other product. The films themselves were constrained to their physical medium (VHS/DVD/Blu-ray) and could be either rented or sold to the customer. Any agreements concerning royalties were a great deal simpler due to the fewer number of transactions that were involved. Today, where services such as Netflix offer a seemingly infinite catalogue of content to a global audience, the potential for profits in the entertainment industry has never been greater. However, the process of managing and operating the agreements about who gets a share of these profits has grown along with the potential to make them.

So how has the digital method of media consumption and distribution made everything so complicated? One of the most prominent reasons is the number of business models used to sell a single piece of digital content. For example, it could be paid for, downloaded and kept, rented, streamed for a one-off fee or accessed as a result of an annual subscription. This means a number

of different prices for a single piece of content, which means the royalties will need to be calculated differently for each purchase variant. Build in a range of differing charges based on customer type, bundling and jurisdictional/geographical regions as well as the sheer volume of transactions and you end up with the unenviable challenge of having to figure out exactly who's owed what and why...per download. If this wasn't enough, digital distribution channels are much more dynamic, with prices fluctuating constantly and digital service providers bundling content in a greater variety of ways. These changes will almost always affect royalty calculations.

Before services such as Netflix, the issue of organizing royalties was largely the preserve of the studios that had curated the content. For a provider such as Netflix to host studios' content, they have to pay a huge license fee – for example, hosting Disney's movies for a year costs upwards of \$300 million. However, once they've paid that, it is up to Disney to organise any participation and residual payments to producers, actors, writers and other contributors. These are often calculated through a wide range of

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Mapping the many players in rights and royalty management.

complicated metrics including the magnitude of each person's contribution to the film as well as the depreciated value of the movie. A new film loses value in the same way a new car does. This challenge affects the entertainment industry at a time when providers are striving to reduce the cost of getting content to market.

Business Requirements

- Track town-to-party relationships and (rights contracts)
- Track sales against contracts
- Granular sales reporting
- Calculate revenue shares and royalties
- Post accruals
- Reconcile invoices from supply chain
- Manage payments made to supply chain and collected from consumers
- Manage reporting and analysis

Royalty management challenges are no longer limited to the big studios. Take "House of Cards" for instance, Netflix's initial foray into the creation of its own material. It cost around \$100 million to produce the series and get it in front of the public (a lot less than the cost of a Disney or Warner Bros. license) and also helped them grab around two million new customers, which significantly contributed to a 17 percent increase in revenue from the previous year. With such positive results, it seems likely providers will look to offer more home-grown content in the future although, for the time being at least, they'll be dependent on studios for the majority of their catalogue. However, providers who choose to offer their own content will have to tackle the same royalty management issues as the studios, while continuing to pay for licenses and reimburse collection societies and agencies such as Harry Fox that aid in the provisioning of the material. To do this effectively will require an increasing focus on optimizing or upgrading the systems in place to deal with royalties.

So Who's Currently Addressing this Complex Problem in the Digital Media Industry?

Digital music providers have led the way in developing systems to calculate royalty payments to the various collection agencies and claimants who require a percentage of the sale of any given song. Microgen works with digital service providers to implement systems that can accurately calculate and efficiently report to rights holders and collection societies about which songs have been sold. In the digital music industry, existing systems can limit how efficiently suppliers can report sales, reconcile representation rights and calculate royalty expenses. Inertia in the adoption of global communication standards (like DDEX) and the lack of universal song identifiers burden this process. Managing cash flow is often a major challenge for digital service providers who need to accurately forecast outgoing royalty expenses. With new purpose-built royalty management systems, many providers have cut sales reporting time from weeks to hours, and can more easily resolve disputes with rights holders, ensuring that they are paid promptly and correctly.

So what can be done to streamline your royalty management processes? In many ways, the challenges are the same regardless of whether you're selling digital movies, applications, music, news or books. A royalty management system should automate the process of generating sales reports, ingesting invoices from content providers, reconciling rights, and generating accruals. An appropriate solution should be flexible enough to manage new business models and ways of selling content in an industry that has the potential to do anything but remain static.

The current state of the digital media industry is characterized by complex supply chains, widely distributed content and varying rights agreements. The arguments rage on about the fairness of how royalties are calculated and distributed but, regardless of their value, they still need to be accurately reconciled to avoid disputes and potential costs later on. By the support for and use of supply chain messaging standards and by getting the systems in place to deal with these and future business processes efficiently, content creators, distributors and providers can better work together to get great products in front of a paying audience. ■

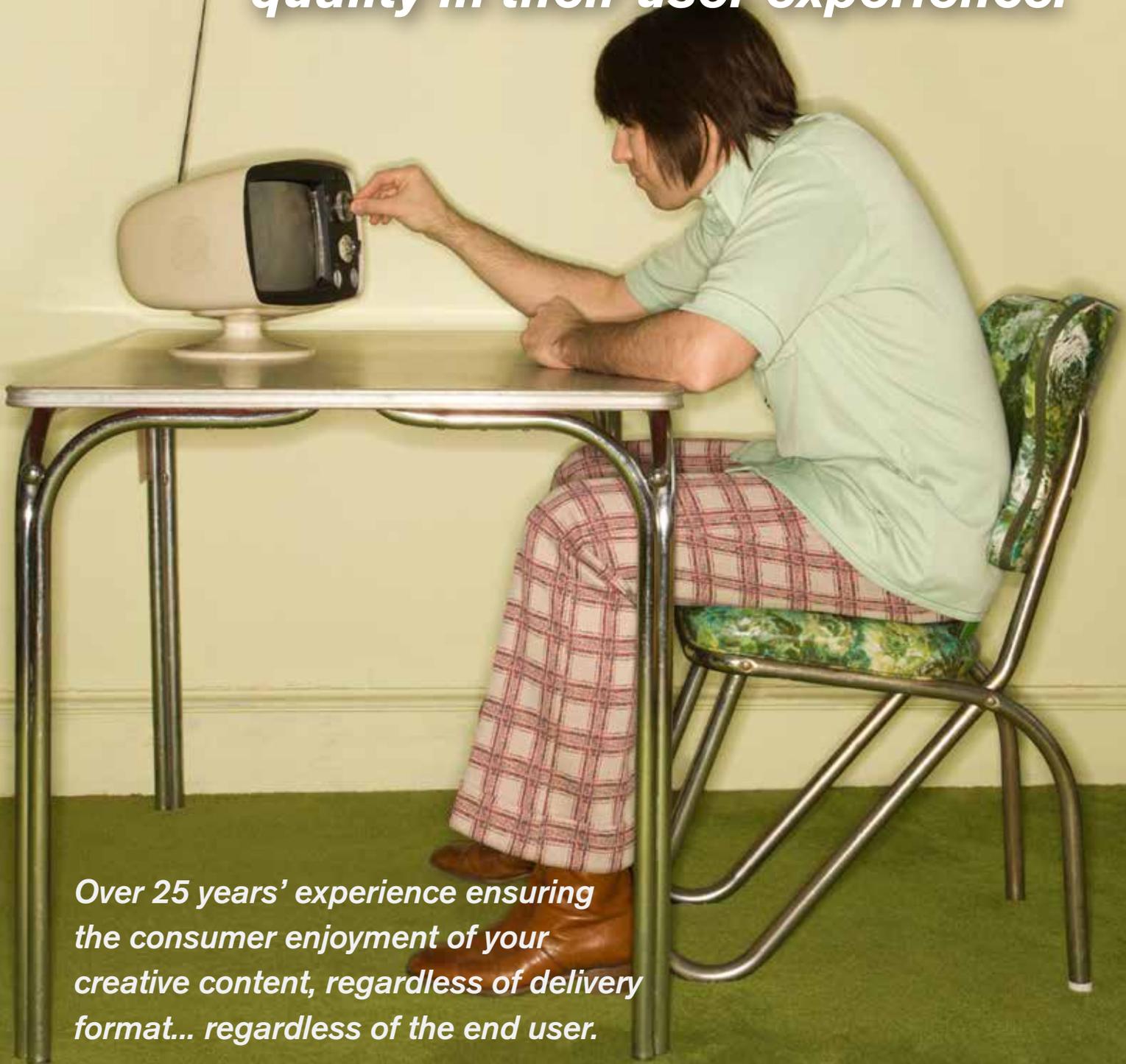


Martin Redington is Senior Vice President at Microgen, and has over 20 years of experience leading transformative IT projects. Martin led the development of the Microgen Royalty Management products used by digital service providers to manage and action royalties, rights and revenue sharing agreements. Martin is a board member of Digital Data Exchange (DDEX), a consortium of leading media, music licensing organizations, digital service providers and technical intermediaries.



Olly Parkhouse is a technology marketing specialist for Microgen. He researches the approaches that large and leading enterprises are taking to better understand, account for and drive their businesses forward. Before joining Microgen, Olly completed a Master's degree at London Metropolitan University and held several search engine marketing (SEM and SEO) roles.

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The Art of Moving Media

An update on advancements in media file movement.

By Katie Staveley, Vice President, Marketing, Signiant

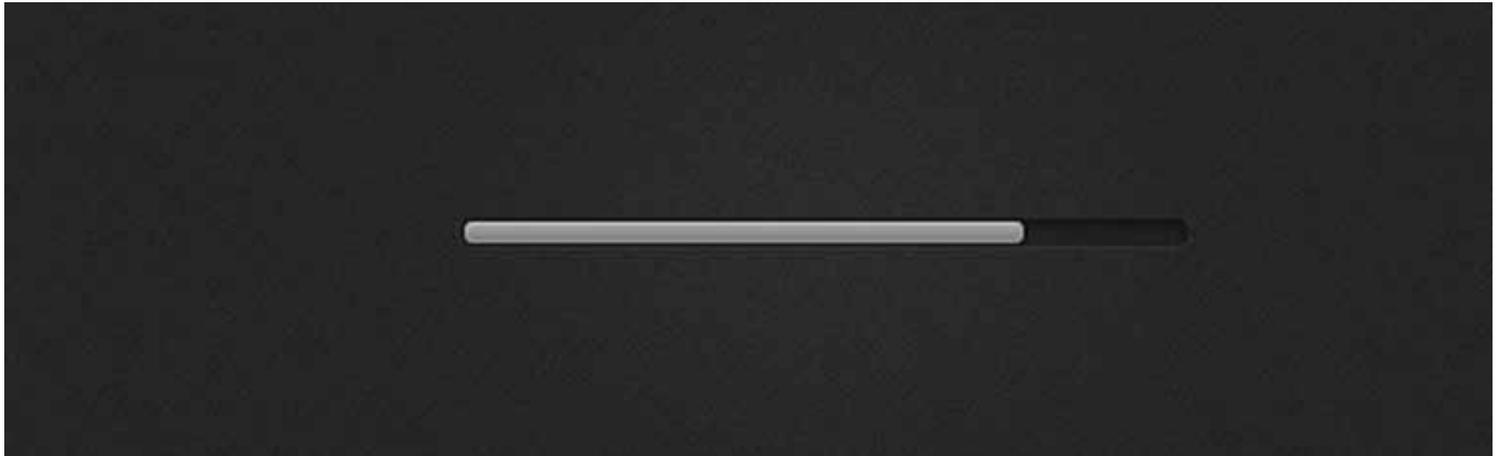


Image: GhostlyPixels

Abstract: Media file movement is a critical business process that's part of most, if not all, media organizations today; and it's becoming a larger part of other enterprise organizations, if not with media then with moving other large digital assets. While some processes require complex workflows that integrate systems and distributed teams, oftentimes there are instances where moving media files is much more complex and painful than it needs to be.

Media professionals have many options when moving files today. However for large media files (file size over 2GB and growing), there are fewer reliable solutions available and therein lies the root of complexity. Among this small pool of solutions, many of them are limited in different ways – usability, accessibility, transfer speeds, security, and so on. And, to add another layer of complexity, the emergence of consumerized solutions in the workplace has prompted the use of online file sharing services (like Dropbox, Hightail, and others) because they are easy and popular. But at the end of the day these solutions were not built to handle the demands of the enterprise especially when it comes to moving large media files.

With all these different solutions readily available and each with its own set of limitations, media professionals are forced to spend too much extra effort and time to figure out how their content is going to get to where it needs to be, on time. On any given day, they may need to use several different solutions, depending on which content they are working with and where it needs to go.

For example, a major sports team may send and receive game footage with their national sports league affiliate through a high-powered automated workflow system; but on the same day they

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may also need to share footage with local television stations, recruiters, coaches, universities where players had attended, and many others where there is no workflow system in place and no need for an automated workflow.

The reality is to get the job done they will use a combination of FTP, Dropbox, Hightail, email, etc. to move all this content around – and have to put up with slow transfer speeds, potential transfer interruptions, security risk, difficulty enabling access to the content, limitations with file size, and usability challenges; all of which adds up to inefficiency, lost time, loss in productivity and lack of control.

Unfortunately, while this example seems specific, many media professionals are faced with the same challenges of moving media files to a variety of different internal and external constituents throughout their unique organizational ecosystem. It's complex, but it doesn't have to be. Consolidating to a simple, enterprise-ready file transfer solution – especially when it comes to large content files – will help streamline processes and enable media teams to easily stay in control of all their content and users, and ultimately move faster.

It really goes without saying that in the media industry content is the business, and subsequently having control over the content is very important and in most cases critical. When content is shared through online files sharing services, it is immediately at risk. Not only will the content be stored within an external cloud network, access to that content is not managed by corporate protocol. If a person has terminated their relationship with the company and should no longer have access to that content, it is very difficult to remove access. While it's necessary to keep control, the thought of keeping tabs on all the content and users can seem daunting and high maintenance especially when that has to be done across multiple, disconnected systems. It doesn't have to be, with the right solution.

So What is the Right Solution?

In media organizations where content is directly tied to your bottom line and an important part of your business, the right file transfer solution must include the fundamental enterprise-ready elements like security, scalability, flexibility, acceleration, tracking,

resource management, and a simple user interface. On a daily basis media professionals juggle countless tasks and projects each with hard-delivery deadlines. Juggling technology, tools, and logins to just get their content where it needs to be is a thing of the past. It's a demanding job that requires a consolidated solution that is easy to use, easy to manage, saves time and makes their job easier.

As recently reported, Dallas Audio Post displaced several different file delivery solutions and consolidated on Media Shuttle, one solution that meets all their needs and resulted in happier clients. Not only did the cloud delivery and underlying acceleration technology of Media Shuttle help them save time within their production schedules, they found the solution to be highly intuitive and easy-to-use, which allowed them to give their clients a better experience with their company.

The size and quantity of media files continues to grow exponentially. Moving that content will always be a critical business process, but it doesn't always have to be challenging. Implement a simple, consolidated solution for all your file movement to alleviate the complexity and focus more time and resources on making great content. ■



Drawing from her extensive experience marketing technology solutions for B2B companies, Katie Staveley leads worldwide marketing for Signiant - a market leader in intelligent file movement software for M&E.

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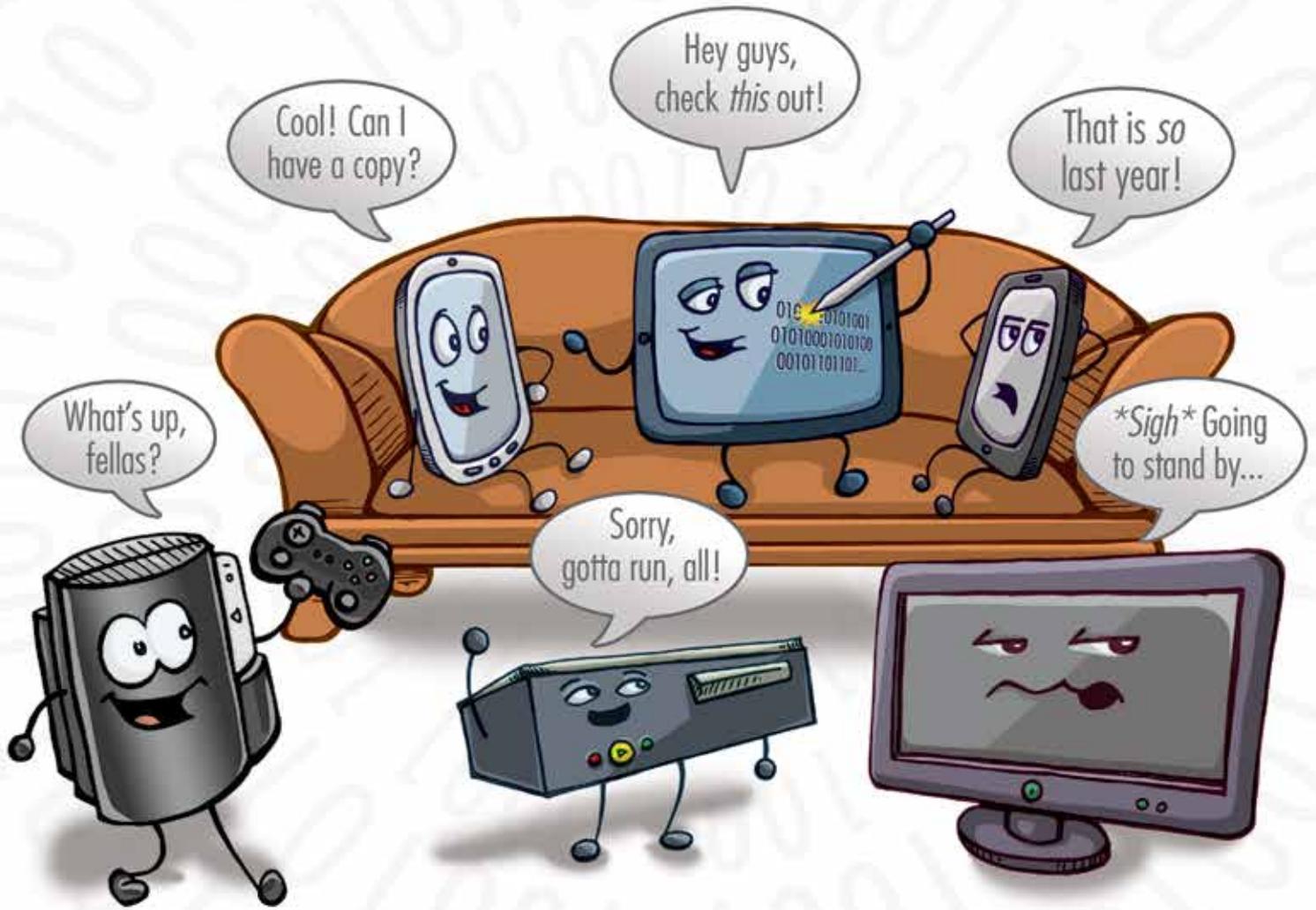


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Driving New Digital Revenue

Utilizing automated media asset lifecycle management.

By Daniel Kenyon, Vice President, Business Development, Equilibrium



Abstract: Equilibrium (EQ) provides automated solutions to simplify asset utilization and exploitation for Media and Entertainment enterprises. EQ enables end-to-end management and process automation by providing a single solution for acquisition, transcode, preparation, distribution and dynamically targeted multiscreen ad delivery.

Seismic shifts are occurring in entertainment industry IT. Heavy iron and custom-built systems are being replaced with SaaS offerings and standards-based technology. Silicon Valley is taking notice, and is betting real money that this underserved market will thrive with the help of cloud-based startups.

For more than 10 years, EQ has worked within media and entertainment, providing technology that simplifies industry challenges associated with media asset management (MAM). EQ's technology equips studios, broadcasters and digital media publishers with solutions that rapidly process, distribute and deliver digital assets: from text documents and images to HD video assets. The system automatically transforms common file types for multiscreen device viewing, provides video on demand (VOD) and streaming on secure private channels or through digital broadcast over-the-top (OTT) and social networks with data capture.

Paradigm Shift

Viewers are rapidly adopting alternative-access services for first-run, premium content with optimized, go anywhere, multiscreen viewing. Digital revenue from premium content is growing rapidly, video ad revenue is up, and 2nd Screen engagement is skyrocketing, indicating that digital viewing is dominating — yet, the bulk of Media and Entertainment revenue is still generated from conventional

distribution windows like theatrical, broadcast TV and cable. Despite the digital home entertainment trend, Media and Entertainment enterprises are still clinging to conventional wisdom and betting on the status quo.

However, as the digital paradigm shift continues with consumers, the industry must wean itself from the stagnant growth of conventional analog dollars and embrace the accelerating growth and more profitable business of digital pennies.

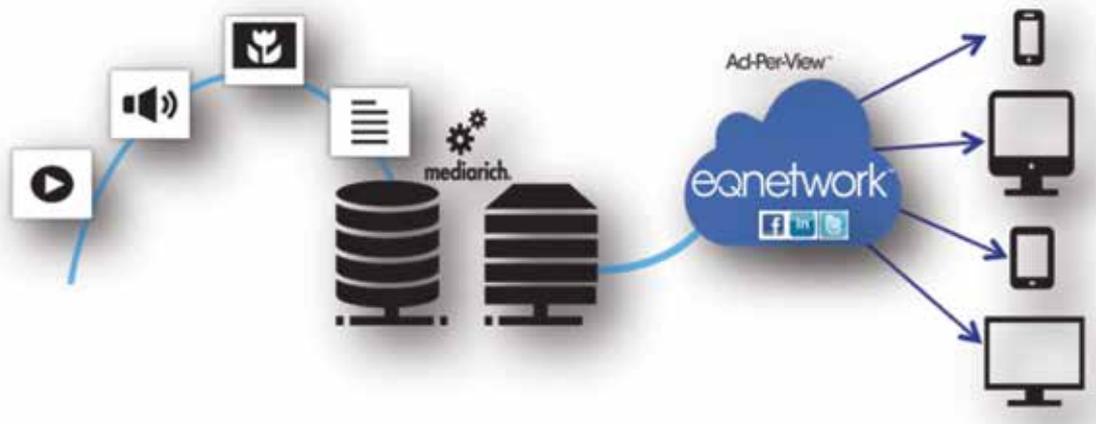
To accomplish this shift, a new mechanism must be adopted, one that can provide, low-cost asset management, preparation and delivery to viewers with monetization and data capture. This new mechanism is end-to-end automation, and closely resembles the paradigm shift that altered the financial services and telecommunications industries years ago.

By adopting a new approach: an automated end-to-end media asset lifecycle for the entire content acquisition to delivery process, the Media and Entertainment industry can finally achieve low-cost content delivery, higher-yield monetization, and more profitable revenue models for digital distribution.

Hooray for Hollywood

Major Studios and other media and entertainment organizations have enlisted EQ to provide technology that helps them achieve end-to-end MAM automation, from preparation, to distribution, storage and delivery of premium content to users throughout their

The MediaRich Workflow Acceleration



internal and partner organizations.

A major Hollywood studio uses EQ's MediaRich universal asset processing engine to transform media assets directly from their digital asset management (DAM) system. The technology is used to automatically access and centralize millions of original assets and to instantly create new derivative assets on-the-fly at request. With this technology, their DAM simultaneously handles text processing, thousands of images, as well as the transcoding of hundreds of videos daily.

As a result, the studio was able to significantly increase the availability of media assets to subscribing business units at the studio, including:

- Domestic and international theatrical
- Networks, home video distribution
- International television
- Consumer products
- Corporate marketing and advertising
- Corporate image archives

MediaRich accelerates the workflow within their application frameworks and allows their media access services to be instantly available to users throughout the participating business units within the studio. Their DAM has many direct users, as well other partner organizations worldwide that can now access this media and download images, including authorized press organizations for widespread use. Creative teams working with the DAM noted that the system exceeded defined expectations by processing hundreds of thousands of assets and millions of downloads by thousands of direct and portal users.

Another major Hollywood studio uses

MediaRich technology to power its direct-to-consumer media processing app. This product required a cloud-based service engine that could manage the compositing and transformation of media automatically, and broadcast this media directly to the web or via social networks. MediaRich is the heart of this PaaS system enabling the composition and transformation of images for multiple formats of consumer media on-the-fly.

After public release of the cloud-based PaaS media transformation service, the technology was able to transform media assets and create millions of derivative versions in a fraction of the time originally required.

By Association...

MESA worked with EQ to solve their conference video delivery challenges. The MESA organization needed a quick way to deliver to a select audience — HD quality video to each member of the organization in private and public viewing channels on demand for conference events. Additional requirements included low-cost, low-overhead, uniform video delivery into a multiscreen environment, as well as seamless insertion of promotions and other segments, and the ability to automatically embed video into the organization's Web site.

They implemented the EQ Network (EQN) service to help deliver conference video. EQN enables MESA to easily upload, curate, transform and store in their confer-

ence video library, and instantly make videos available to members or the public through VOD.

Additional Use Cases

In the entertainment industry, dailies require production staff to upload, compress, upload again, send, and then wait for the receiving parties to review and comment on the clip. This process curbs production workflow, takes hours, and wastes time and resources. Through secure, private channels EQ allows the creators and collaborators to upload their video directly into EQN (in any common format), which automatically compresses the video and notifies the recipient instantly that the video is ready for viewing and commenting — on smartphones, tablets, laptops and OTT TV devices, all in HD quality. This end-to-end process reduces time, costs, and eliminates production lags associated with viewing venues.

On the flip side, when delivering directly to viewers, the system can automatically drive advertising campaigns with on-the-fly, in-stream loading and viewer micro-targeting for local, hyper-local and dynamic targeting for highly relevant ad delivery. Ad supported viewing is managed via dynamic ad insertion functionality. The Ad-Per-View system enables digital advertising campaign management, so an advertiser can execute campaigns with extremely low upfront costs by eliminating pre-preparation of videos and ad insertions.



Daniel Kenyon is VP at Equilibrium. He oversees strategy for Media & Entertainment, Publishing and Advertising industry products. He previously held executive positions at Oracle and PeopleSoft.

EQ's Video Platform Workflow



From Rich to Richer

EQ's MediaRich technology provides customizable, automatic preparation, transcoding, dynamic editing, versioning and delivery. This scalable, universal media-processing engine enables media and entertainment enterprises to implement their workflow with visualization and instant media manipulations. The system is capable of processing assets at accelerated speeds from multiple formats to a wide variety of devices with dynamic media templating.

EQN's video platform operates in the cloud and enables organizations to create a worldwide, video-broadcasting network or individual privately shared, secure channels. EQ Network has a campaign manager to enable instant auto-assembly of videos in any channel, such as:

- Pre-roll and post-roll inserts for branding
- Promotion
- Copyright
- Dynamic, hyper-targeted, advertising insertion

The End Result

New digital solutions need to be more than a best-of-breed collection of high tech tools; they must actively encourage creativity and drive revenue for the profitable growth of studios, broadcasters and digital publishers. The new digital paradigm requires technology that can automatically manage the entire media asset lifecycle, end-to-end.

Automating MAM workflow and applications with integrated video distribution enables media organizations from small digital production companies to the major studios, to substantially reduce the cost and time for producing, distributing and delivering digital media.

End-to-end flow through automation of MAM with viewer delivery lets media and entertainment enterprises free up valuable capital to invest in more projects, expand promotional effectiveness and increase revenue and profitability. ■

WHY SHOULD MANAGING VIDEO BE SO HARD?

EDITOR'SNOTE / *continued from pg 4*

ganizations are the thrust of their digital marketing effort. Hollywood's innovations are creating engaging virtual experiences and customer relationships through multiple electronic channels, such as the Web (including social networks and online communities), email, Web-enabled phones, mobile applications, kiosks, point-of-sale terminals, interactive television (iTV) and gaming consoles. Their goal is to consistently unleash relevant experiences across all consumer intent segments, geographies and channels—be they digital, social, mobile, traditional, in-store or in-person.

Digital delivery of movies into theaters, a goal of studios and theaters, achieved a major milestone in October when the Digital Cinema Distribution Coalition (DCDC) said its distribution platform “went live” serving 17,000 screens at 1,200 theater locations across North America. The Coalition was formed by the nation's top three theater chains, Regal, AMC and Cinemark, along with Universal Pictures and Warner Bros., to provide the industry with the latest digital distribution technologies. Today the Walt Disney Company, Sony Pictures, 20th Century

Fox, Paramount Pictures and Lionsgate have joined the coalition, as have Southern Theatres and National Amusements. This will make obsolete the current practice of most movies being delivered on digital hard drives and physically shipping them to theaters across the country, a costly and time-consuming process.

In the “Field of Dreams” of innovations, I find Machinima to be an enterprise of the new economy as a global video entertainment network for young males, delivering a multi-platform, worldwide, anytime, anywhere approach to their content. The company's scale, programming strategy, vast network of influencers and valuable engagement tools leverage data to get more scientific around the concept of “influence.” Characteristics of this agile, consumer-obsessed, entrepreneurial company of millennial employees are worth analyzing for innovations in organizations where the studio system has been around for decades.

In the disruptive digital world we live in, Hollywood is engaged in what it does best—telling a story and delivering it in the most creative ways known.

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PHYSIGITAL / *continued from pg 6*

speaking the same language?

When you reinvent an entire industry's way of doing business along a complicated product lifecycle you impact all divisions of the enterprise and all their individual processes. While marketing is adapting to new social analytic systems and big data, creative is inventing new forms of multiscreen engagement; while finance is dealing with digitizing everything from payroll to vendor management, anti-piracy is identifying and trying to eliminate new vulnerabilities in the digital distribution pipeline. And while our industry searches for the holy grail of metadata, we can still concentrate on putting our house in order so we can handle the

workload that will happen once metadata helps open up the content pipeline to serve new and unprecedented numbers of global consumer platforms.

That's the role that MESA has been directed to serve. The groups we manage, in both the U.S. and Europe: HITS (serving Hollywood's IT departments and their partners), 2nd Screen Society (developing a new consumer engagement experience) and CDSA (championing digital content protection and anti-piracy efforts) are all involved in various SIG projects to get these business basics settled now. And when everyone else finally comes together around metadata, we'll make sure the rest of the business systems are ready to go. ■

The Hollywood IT Society (HITS) is a community of IT technologists representing the Studios of the MPAA and supporting information technology, partners, vendors, and services firms.



Mission

- To enable the business transformation of the entertainment industry through information technology by developing, advancing, and disseminating best technology practices, knowledge, and research for the physical and digital media.
- To foster the development of supply chain innovations to enable efficient, customer-centric B2B relationships through supply chain management innovations.
- To encourage and promote collaboration in IT solutions for shared and outsourced services.
- To create a community of thought and practice leaders from the business, professional association and academic information through exchange, shared services and collaboration.

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Content Management and Digital Workflow

Seamless integration between systems can bring enormous operational and cost benefits.

By Hariprasad Sirivaram, Solutions Architect, iGate and
Scott Spector, Corporate Vice President, Global Head Communications,
Media & Entertainment Vertical, iGate



Abstract: With the growing needs surrounding digital products, it is imperative that Content Management Systems can effectively drive an organization with benefits that are multifold – such as operational efficiency, faster time to market, better customer experience, and monetization of content.

Over the years, the production and consumption of entertainment content has exploded multi-fold, and media companies are often confronted with huge expectations and obligations to go beyond the traditional Web Content Management Systems and provide a true Web/Customer Experience Platform. For these reasons, it is absolutely imperative for companies to have a flexible and scalable Content Management System as they deal with a wide variety of media content, diverse audiences and multi-channel delivery. All of that said there is a direct line between Content Management Systems

and Digital Asset Management Systems. A seamless integration between these two systems can bring in enormous operational and cost benefits plus a single, centralized repository for the rich library of assets.

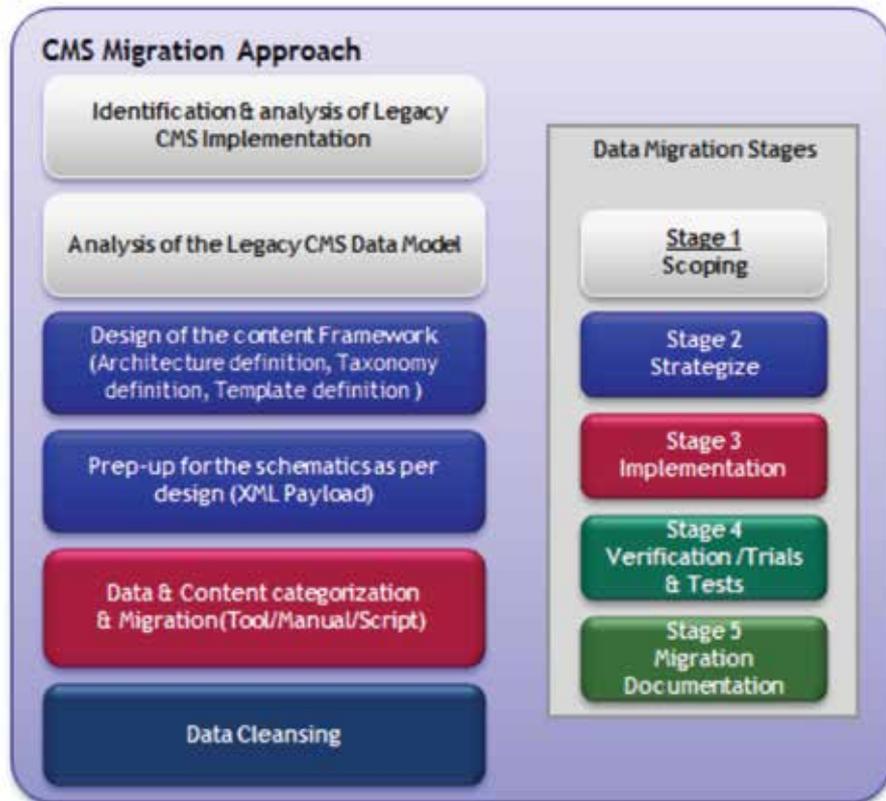
There are tactical considerations from the technology and integration perspective that need to be considered to leverage the comprehensive benefits of an enterprise Content Management System.

There are a series of business goals needed to help drive these considerations: An enterprise-wide Content Management System with an infrastructure to efficiently manage content from production to distribution, a unified view to search and view content across the organization, reduction in operating costs for content preparation, distribution and publishing; maximized revenue streams related to asset library. Goals also include a reduction in manual effort involved in running a content supply chain, a global digital catalog, a reliable content library and efficient workflow systems, and finally, providing the ability to gather and mine user and market data for media analytics.

The solution should co-exist within the organization's ecosystem and enable them to seamlessly integrate their upstream and downstream systems while leveraging the benefits of multiple stable heterogeneous systems.

Technology and design also play a crucial role in driving success, so architecture drivers that will lay the foundation for an effective system should be considered.

A number of factors drive the architecture, such as having an industry-proven framework, orchestrating the integration and leveraging an enterprise service bus for downstream and



This chart outlines the stages and steps necessary for CMS migration.

upstream interfaces of dependent systems. Other drivers include creation of a solid workflow framework with configurable business rules that can adapt to changing needs and editorial workflow, an intuitive rich graphic interface with responsive design, performance and scalability with the right architecture, design and capacity planning and the ability to meticulously assess and design the content migration strategy.

The design for the future and open framework accomplishes myriad effects. Among them are automated asset and metadata integration, coupled with automated editorial publishing workflows based on content type for serving diverse distribution channels. Effects also include a standardized method for ingesting and syndicating content, streamlined business processes for editorial and publishing workflows; and seamless integration between asset, authoring and publishing systems.

The platform should enable and empower users to create and use business processes packaged as services throughout their lifecycle. The product should support open architecture and enable customers to allow different sources to exchange data and participate in end-to-end publishing processes. It is also recommended to perform proof of concepts to validate the platform for its flexibility, extensibility, integration and usability.

It is suggested that companies use Enterprise Service Bus (ESB) as a software architecture model for designing and implementing the interaction and communication between interacting software applications within the organization's ecosystem. Additional process suggestions are:

- Orchestrate all business processes to pro-

vide an efficient ingest, enrich and publishing workflow with a generic workflow manager pattern to enable seamless extensibility and configurable admin utilities.

- Leverage rules engine integration to empower users to change the rules based on changing business scenarios without developer involvement and perform hot deployments as needed.

- Leverage web analytics for user profiling and customer sentiment analysis.
- Use a generic and dynamic workflow manager with the provision of creating workflows using roles and permissions, customer profiles, content type and attributes, distribution/publishing profiles, and states of content life cycle.

Continued on next page



Hari Prasad Sirivaram is a Solutions Architect with 15 years of experience in multiple domains (Media & Entertainment, eCommerce, Asset Intelligence & Insurance Solutions) and is currently responsible for Solution Delivery of projects in through iGATE's Media and Entertainment Vertical. Hari has extensive experience in Solution Architecture & Design and Service Oriented Architecture (SOA) etc.



Scott Spector is an entertainment industry executive with extensive experience in global business development, global sales & marketing, corporate development, digital distribution, major studio operations, professional video/audio, 3D digital cinema, global alliances, television and film distribution, broadcast network operations & business strategy.

Additionally, companies should aim to design a solution that provides seamless management of images, videos and metadata, supports multiple file formats via a common ingestion process, and can enhance the workflow. The solution should automate the workflow initiation based on the content type and customer profile, providing visualization of workflow status and with graphical state charts and appropriate notification. It should also have the ability to modify workflow instances without code changes or dependency on developers, in order to facilitate a more flexible publishing workflow, and also provide secure use of valuable assets that ensures scalability for widely distributed audience.

Best Practices

As most Content Management Systems evolve over a period of time - some are home grown, while some are built around an product with

basic features, so invariably migration becomes a mandate when the re-platforming journey starts.

Choosing the right tools and frameworks is very important as the system should enable and empower business users and editors to quickly adjust workflows to meet changing business requirements.

There are several other tips for choosing these tools. First, devise a solution for better metadata management and powerful intuitive search. Then, embrace proven methodologies and strategies for data migration to de-risk switchover, integrate the latest trends in CMS & associated systems. Next, look for ready-to-deploy accelerators, as there is an abundance of community provided modules and accelerators to get users quickly ramped – e.g. Drupal, an open source community product for content management.

iGate also suggests building a solution that provides following benefits:

- Assisting content production and management
- Driving traffic acquisition
- Improving user experience and management
- Enabling multichannel delivery
- Copyright infringement detection (IP rights)

With this solution in place, editors can seamlessly target content to a specific customer base, publish to multiple consumers, deliver segment-based content, achieve SEO optimization through metadata profiling; and search securely. Geo tagging of content prevents users from searching unauthorized content. iGate also advises automating all services involved with distribution workflows that are labor intensive, repetitive, utilize file based digital assets, and do not require any creative decision making. ■



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MADISON&VINE / *continued from pg 42*

3) Cross Platform Demographics: With advertisers increasingly focused on hyper-targeting of audiences, across demographics, geography and even real-time weather conditions, the challenge for networks is to integrate granular-level viewership data across platforms accounting for duplication. The true benefit of a cross-platform advertising solution will come from a network's ability to structure offerings around campaigns focused on narrow segmentation to maximize the effectiveness of advertising spends.

4) Cross Platform Products: The other question that is keeping the networks awake today is the concept of cross platform products. This is not a mere technical issue but a complex mixture of legal, commercial and technological issues. While rules and regulations governing airing of content on TV vary across time zones, genres etc., the digital space allows much more free access to content. Similarly, tracking rights and as well as royalties across multiple brands and media properties can create its own challenges commercially and legally.

We can logically expect that new cross-platform products will evolve with time along with regulations and commercial contracts that are more adept at addressing an integrated landscape.

While the ecosystem enabling the cross-platform advertising begins to take shape, TV networks that want to benefit from the first-mover advantage need to start investing and enabling in the following key areas:

Integrated Data Analytics:

With an eye on cross-platform targeting and reporting, networks need to start investing in an integrated view of its audiences across platforms at a granular level as well as analytics around the conversion of metrics across linear and non-linear media. A consolidated view of the client is also a prerequisite to enabling a consolidated sales team.

Integrated Sales:

These systems have common and real-time view of inventories, ad scheduling and fulfillment systems. This may initially start with standardization of systems on the linear and non-linear sides with a combined real time view. But eventually it must evolve to a truly integrated system that will ensure optimization of processes and eliminate duplication even as ad agencies themselves reorganize their media planning and buying functions in response to this imminent change.

Integrated Delivery Platforms:

With an integrated content and rights management platform, the delivery of content between linear and non-linear channels is asynchronous and independent of each other. However, the prospect of integrated content and rights management/delivery platforms seems an absolute necessity. The economics of such a solution itself may provide a great impetus for its adoption. Currently the ad-serving solutions incorporate a range of digital channels and smart/connected TVs and have not been incentivized to integrate linear television into their solutions. Integrated-ad operations that are capable of maintaining and acting on multi-platform ads is one place where there is scope for optimization and cost savings for the networks and could become the genesis of some of the more evolved technical solutions that are anticipated in the industry.

To summarize, we see that an integrated ad platform for networks is a medium to long term investment that is going to have profound impact on how an ad sales business is run. ■

Better targeting should lead to better experiences for consumers, as advertisers learn what makes them tick.

BACKSTORY / *continued from pg 122*

weren't grabbing a snack. Or checking their email. Or fast-forwarding. Which is why John Wanamaker's famous comment about knowing that half the money he spent on advertising was wasted, he just didn't know which halves were true today.

2nd Screen Can Change That

When consumers interact with ads, by saving them to an ad locker or bookmark list, they are letting us know how well an ad is working. And since they are saving them to their individual (rather than household) accounts, we know a whole lot about who they are and what their habits might be.

Over time, the anonymized data we build

up around individual viewers becomes a very powerful tool. We can test which versions of an ad worked best against which demographic, know exactly how many people bought a car because they saw an ad for it on TV, how many made appointments to visit a showroom and how many clicked through to the website and then dropped out. That data helps advertisers create better experiences and also helps better target consumers: CBS could, in essence, sell a 30-second TV commercial to Lowe's along with a spot in the ad locker of men who had recently saved or bookmarked an ad for lawn-care products.

Better targeting should lead to better ex-

periences for consumers, as advertisers learn what makes them tick. On another level, it should also lead to more accurate fees: advertisers will pay networks to reach the people who might buy their products, not a random sampling based on demographics. This will lead to fewer and more targeted commercials that sell at a higher price.

This scenario is everything that makes the 2nd screen ad market so exciting, because everybody wins: marketers get better targeted consumers, networks get better prices for their slots, and consumers get fewer, more relevant commercials. With the coming 2nd screen ad market, everybody wins. ■



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2014 Event Calendar

	Supply Chain	Information Technology	Content Security	Second Screen
January	CES SuperSession Las Vegas, 1/7/14			2nd Screen Summit @CES Las Vegas, 1/6/14
February		HITS Breakfast Los Angeles	Content Security Briefing New York City	2nd Screen Summit @MWC Barcelona, 2/23/14
March	ESCA Digital w/DEG, Los Angeles			
April		Hollywood IT Summit w/Variety, Los Angeles		2nd Screen Sunday @NAB Las Vegas, 4/6/14
May	MetaData Madness Los Angeles		Content Security Briefing Los Angeles	
June		HITS: Burbank Think Tank Los Angeles		2nd Screen Summit @CE Week New York City
July	MESA Executive Retreat			
August				
September	Academy on UltraViolet w/DEG & DECE, London			2nd Screen Summit @IBC Amsterdam
October		HITS: Digital Marketing & Analytics w/Variety, Los Angeles		
November		HITS Breakfast Los Angeles		
December	Forecast:Hollywood 2015 Los Angeles		Content Protection Summit w/Variety, Los Angeles	

For more information contact: Guy Finley, Executive Director, [917] 513-5963 Guy@MESAlliance.org

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With HEVC, the future of entertainment is now, offering multiple opportunities for improved video quality, cost efficiencies and greater consumer satisfaction.

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deliver optimized software decoders to build support into personal computers and higher-end mobile devices.

According to a report titled “HEVC Decoding in Consumer Devices,” senior analyst Michelle Abraham from Multimedia Research Group, Inc. estimated that the number of consumer devices that shipped in 2011 and 2012 that could be capable of HEVC playback with a software upgrade totaled around 1.4 billion; with more than a billion more expected to be sold in 2013.

■ Capitalize on Opportunities for Companies that Will Benefit the Quickest

The industry needs to focus on building device support for companies that stand to immediately benefit from the reduced demand on networks and transmission cost savings that HEVC provides. This includes companies involved in providing Internet video streaming services over wired and wireless networks to both tethered and mobile devices.

■ Minimize the HEVC Compatibility Risk by Building Necessary Checks and Balances to Ensure Compatibility

Much like any new compression standard, there will be multiple suppliers of HEVC encoders and decoders embedded into systems. And without a comprehensive mechanism to ensure playback compatibility among the various disparate systems, there is the probability that consumers will experience incompatibilities between HEVC-encoded content and HEVC software and hardware players. It is critical that the industry manages the



The flow of the new and expanded industry ecosystem.

complexities when deploying HEVC and creates the necessary checks and balances to ensure HEVC content “just works” and that consumers enjoy all the benefits without any incompatibility headaches.

■ Cultivate Suppliers that Can Manage Video Distribution Chain from Creation to Consumption

A key to ensuring HEVC content interoperability will be the availability of suppliers that can manage the video distribution chain from creation to consumption. These suppliers must use a common set of ‘HEVC video profiles’ or specific parameters for various HEVC resolutions. Controlled HEVC profiles will help ensure compatibility by giving content producers a standard for encoding files and device manufacturers a specific set of criteria to target-test playback.

■ Implement Device Certification Programs

As part of ensuring device compatibility, it is also critical that vendors provide sophisticated testing or device certification programs that allow for a systematic approach to testing both performance and compatibility. This will ensure that HEVC content will reliably play at full quality on any given device.

With HEVC, the future of entertainment is now, offering multiple opportunities for improved video quality, cost efficiencies and greater consumer satisfaction. By fueling HEVC content availability, driving device support and helping mitigate the risk of playback incompatibility, the industry can help accelerate adoption across the video value chain. If we take the right steps, the rewards of HEVC can be a reality far sooner than most anticipate. ■

Monetizing The 2nd Screen

Creating a 2nd Screen ad market.

By Alan Wolk,

Global Lead Analyst, Pikel

Abstract: The brave new world of 2nd screen experiences has the potential to vastly improve the consumer experience, creating richer and deeper options for storytelling. It also has the potential to create an explosive new market for advertisers, where brands can look for similarly rich and deep interactions with consumers.

In order for that marketplace to take off, however, a number of changes need to take place in the way the current ecosystem is structured.



At present, most 2nd Screen experiences are owned by third-party app makers like Zeebox and Viggle or by content creators like NBC and HBO. This is not unexpected, as the industry is still new and no clear leaders have emerged.

As a result, there is no standardized system in place, but rather a patchwork of diverse platforms with little in common beyond the fact that they are looking to capitalize on our continued love affair with TV. As the number of apps – and the number of viewers – has grown, so has advertiser interest. Given the lack of commonality between the existing platforms, promotions have emerged as the 2nd screen ad vehicle of choice. This makes sense given the current state of the market: promotions are easy to measure – how many people checked in, used an audio or recognition app to connect to the ad, tweeted or posted to Facebook about it – and can work on just about any platform. But ultimately their dominance will fade and promotions and contests will be just one of many tools that advertisers use on the 2nd screen.

The turning point for the 2nd screen ad market will come when the MVPDs – multi-screen video programming distributors – create a standardized platform on which the various networks can hang their 2nd screen experi-

ences. (The functionality of the various third party apps will be rolled up into the network apps.) A standardized platform – even if it just reaches 60 percent of US pay TV households – will allow for national ad buys, which is the magic ticket needed to create a full-fledged 2nd screen ad market.

This will then open up a range of options for advertisers. The first, and easiest, will be sponsorships. It's easy to see say, a beer brand like Budweisers sponsoring the stat-driven 2nd screen experience for an NFL game. Or a women's fashion brand like Anthropologie picking up the additional content around an episode of *"The View."*

Supporting the First Screen

It is our prediction, however, that 2nd screen advertising will evolve beyond sponsorship into a more substantial medium where 2nd screen ads and experiences support first screen ones.

A key to this is the growth of functionality that allows viewers to save or bookmark an

ad for future interaction. "Jennifer Aniston's Sweater" – the notion that viewers will click on items and buy them as they are watching a show – is a fantasy. Viewers are too caught up in watching TV to stop and buy things, especially during scripted programming.

Viewers will, however, interact with ads and brands after they're done watching TV and can shift their attention to shopping, which is a very different activity. This will parallel evolving viewer habits with regard to 2nd screen content in that, for most types of programming, viewers will check out the additional content either before or after they watch the program – not during it, when they want to keep their attention focused on the show.

An interface that allows viewers to interact with brands once they are done watching TV and in a different mindset allows brands to create an experience that feels much more like shopping than watching advertising. It also creates a vast reservoir of data on which we can draw.

Right now, we have precious little data about an ad. We know when it ran and how many people should have seen it. If they

Continued on pg 118



As Global Lead Analyst at Pikel, Alan Wolk has become one of the most influential thought leaders and futurists in the space. He was recently named by Wired as one of the Top 20 Thinkers In Social TV and 2nd Screen. His blog, The Toad Stool, is widely read and has become a forum for discussion around the changes coming from Hollywood, Silicon Valley, Redmond, London, New York and beyond.



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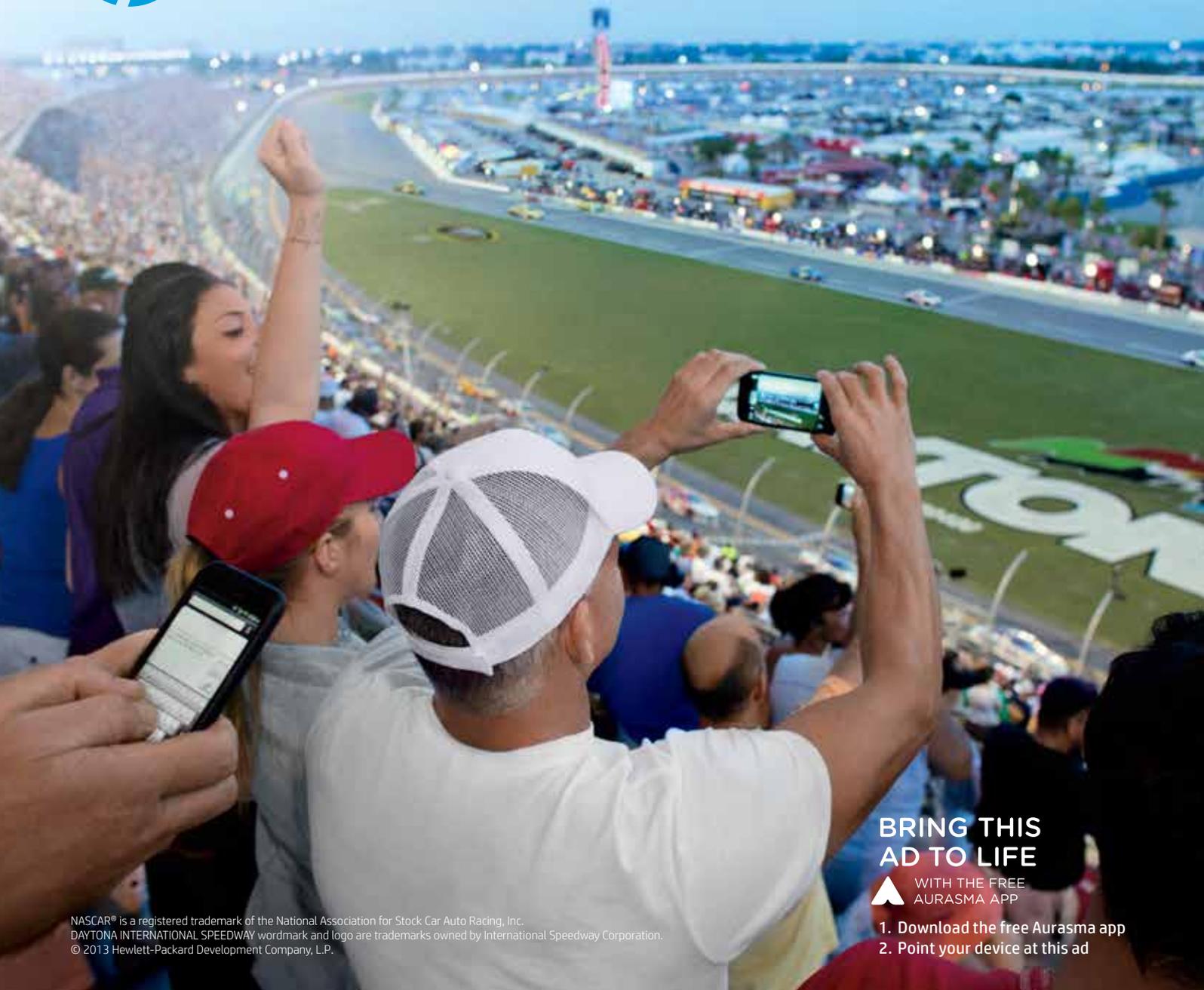
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