M AND E JOURNAL
Media & Entertainment
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Navigating the Next New

There's always something new in media & entertainment. Here are the next new business practices to watch.

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MESA
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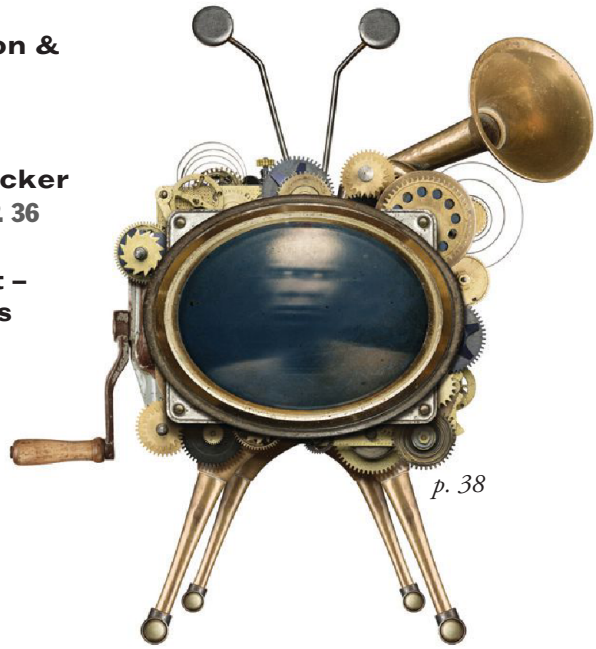

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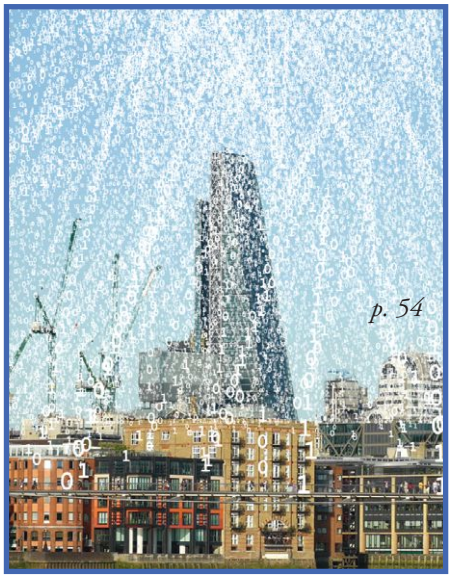

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5 Developments to Watch for in M&E in 2016

By Devendra Mishra, Chief Strategist, MESA; Executive Director, HITS

Disruptive, digital technologies will continue to remake Hollywood

Hollywood's adoption of disruptive, digital technologies for production, distribution and marketing for revenue growth has reached a historic milestone this year. Success has been realized on many fronts as 2015 proved to be a growth story for box office receipts. Here are five key developments of the last year that bode well for 2016:

The Unexpected Driver of Change: Like the perceived threat of the Y2K problem, which forced enterprise-wide review of IT systems, the torturous cyberattack of Sony Pictures in 2014 opened the floodgates for a forensic review of studios. Ironically, one can describe the hack attack as a blessing in disguise for the industry, one in which the actual outcome has been like a CAT scan of the enterprise consisting of people, systems, processes and networks. In addition, the cloud has become a ubiquitous enabler of international market exploitation, even though there was skepticism at the outset. While seeking an entrepreneurial workplace, the organizations in the studios have become somewhat porous. These developments have resulted in replacement of many legacy IT systems with modern and agile solutions from third party technology enablers and service providers.

Digital Distribution Investment and Control: Digital streaming became a dominant delivery method in Q1 2013 when the revenue from Netflix's streaming services in the U.S. exceeded that for DVD. Following a trial of a similar service in Nordic Europe, HBO launched an over-the-top subscription service in 2015, which would allow "cord cutters", "cord nevers", and subscribers to basic cable packages to subscribe to HBO without requiring either a subscription to a pay television provider or to a premium bundle. HBO had decided to invest in building and controlling digital distribution directly to the consumers rather than through television providers. Similarly, CBS delivered more original content and took some networks shows off the air and put them exclusively on its subscription-based CBS All Access.

The launch of excellent streaming media services like Netflix, HBO Go, Amazon Instant, Hulu Plus, Sling TV and Pandora, has made it easier than ever to ditch your discs and embrace streaming content directly to your TV, PC, smart phone and many other devices.

At CES in January 2016, Netflix announced that it went live with its streaming television service in nearly every country across the world—reminding us that we were witnessing the birth of a global TV network—adding programming in 130 countries and 17 languages including Arabic, Korean and traditional Chinese. As a result, the licensing of Hollywood content will grow significantly but the negotiated terms may change.
The opportunity for digital distribution worldwide is huge as the U.S. has about 100 million broadband households, just a fraction of the 730 million total global broadband households. Hollywood continues to build the digital supply chain to deliver to the storefronts of various platforms in global markets by addressing digital rights management, localization for language and ratings and marketing collateral availability as seamlessly and economically possible with minimal time to market. In many instances, third party providers, like Deluxe, Vubuquity and V2Solutions are creating the necessary links.

Data Analytics and Metadata Catalysts: Content has become just one element of the broader consumer experience. Deploying data and analytics is yielding competitive advantages as demonstrated by the solutions implemented by the revenue management group for the theme parks at the Walt Disney Studios. Flixster, Crackle and other direct-to-consumer platforms are making progress.

Technology for New Entertainment Experience: Virtual reality (VR) and Augmented Reality (AR) represent an innovation that may expand the M&E industry. VR represents the potential for the Next Big Thing, the technology that could change the way we communicate and enjoy movies and games. We wonder when the specialized alignment of supporting hardware, that will include the PlayStation VR, the HTC Vive headset and the Oculus Rift apparatus, materialize. By 2025, the market for virtual reality content will be $5.4 billion, according to the Piper Jaffray investment bank. What will it take to build the immersive multimedia for virtual reality systems and environments or gaming hardware, software and accessories designed

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Editorial Director of the M&E Journal and Chief Strategist for MESA, Devendra 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.

Consumers: We Value Your Purchase

By Guy Finley, Executive Director, MESA

To convey this simple message to consumers, the industry must unite around interoperability

I am usually the guy who is up on stage, singing "Kumbaya" and preaching that there is so much that we can do together to improve our individual businesses if we work together as an industry. If we stay vigilant for the opportunity, learn our lessons from other industries (or other entertainment formats) and concentrate on transforming M&E through technology, we all succeed.

Maybe it's the election cycle, but as a digital home entertainment consumer I'm angry and need to vent! From a digital sell-through consumer perspective, home entertainment is so busy trying to squeeze the last drops from the physical media fountain that it has missed the whole point about "going digital." Digital home entertainment is more fractured than ever when you look at it from a "consumer experience" perspective; our home entertainment divisions are not providing the consumer exactly what they want regardless of where they buy it.

So where did we go wrong? And why can't we leverage our collective strength to "stop the insanity"?

The issue is simply that, if you buy a movie somewhere, anywhere, it should be available to you in every ecosystem that you use. As an industry we have missed the fundamental fact that the consumer in this digital age wants their content libraries at their fingertips at any moment and anywhere they go

Home entertainment sell-through is now all about customer service and instant availability. We are seeing the biggest fundamental shift of consumer behavior since the inception of the home entertainment category; it's not about shiny, dangly objects anymore but about how we collectively start to approach this "new" consumer. Content availability has become a customer service issue rather than a monetization strategy and the companies that embrace this change will be the ones that flourish.

Yes, we should applaud and support the innovation and investment being made by all of the existing and emerging (or re-emerging) platforms/services that enable sell-through of Hollywood content. But where we've gone wrong as content creators is in alienating the consumer who purchases a movie in one retail environment without it showing up in others.

The value proposition

Of the eight major digital distribution platforms here in the U.S., two are studio-driven (M-Go/Fandango/Flixster, Disney Movies Anywhere); two are retailer-driven (Vudu, Cinema Now); and four are device/ecosystem-driven and blur the lines between retail and content creator (Amazon Video, Sony PlayStation Store, Google Play, Microsoft Movies & TV). You'll notice that Apple is absent from this list (on purpose) but my theory is that, if we coalesce the entire digital market around the customer service "value proposition", it (Apple) will be dragged along by its customers as well.

At a bare minimum, the content purchased across these eight ecosystems should be interoperable; there is no (good) reason why they shouldn't be. Vudu is the best example because it allows you to collect both DMA and UV titles in your locker (and by-proxy it includes Disney iTunes purchases). Why doesn't Amazon have this same customer service feature? Why doesn't Google Play support UV?

With a variety of small, new players pushing disruptive models our customers' way, the least our industry could offer is a certain level of consumer confidence that we care about how and where they watch our content. This could also help on the piracy front since our complicated business model introduces a risky "piracy window" where the only way to watch online is through a nefarious site.

Consumers don't understand the ins and outs of the deals we make in Hollywood and, frankly, don't care. They live within their own family/friend ecosystems and expect everything that they own to work the way they want it to. Why wouldn't we make ubiquity our industry's ultimate goal? It is time we start delivering a consistent message to all of our consumers: "We value your purchase and it will enrich your life wherever you choose to do business."

As an industry we need to break through whatever is holding back our "negotiations" with the various ecosystem players and collectively start looking at the consumer as our most trusted partner. Once we build the requisite technology and get this message across, we will then sail through this period of disruption and finally settle down to a long, sustainable renaissance of the home entertainment business. ■

Guy Finley is Executive Director of MESA.

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Upcoming Events

May 25

Event: **HITS Spring**
When: May 25, 2016
Location: Sheraton Universal Hotel, Los Angeles
Website: hollywoodITsummit.com

June 14

Event: **THE Summit (Transforming Home Entertainment)**
When: June 14, 2016
Produced by: DEG & MESA
Location: Luxe Sunset Hotel, Los Angeles
Website: THEsummitLA.com

July 26

Event: **2nd Screen Summit: NYC**
When: July 26, 2016
Location: New York City
Website: 2ndScreenSummit.com

Sept 10

Event: **LAmsterdam**
When: September 10, 2016
Location: Yip Fellows, Amsterdam
Website: mesalliance.org/LAmsterdam

Oct 18

Event: **HITS: Fall**
When: October 18, 2016
Location: Loews Hollywood Hotel, Los Angeles
Website: hollywoodITsociety/Fall2016

Nov 10

Event: **HITS: Broadcast**
When: November 10, 2016
Location: New York City
Website: hollywoodITsociety/NYC2016

Dec 7

Event: **Content Protection Summit**
When: December 7, 2016
Location: Marina del Rey Marriott, Los Angeles
Website: contentprotectionsummit.com

MESA's mission is to support entertainment service providers in building efficiencies in the creation, production and distribution of physical and digital media & entertainment.

www.MESAlliance.org

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Content Localization Is Key to Global Revenue Growth

By Jim Bottoms, Executive Director, MESA Europe

Content localization is a huge and complex business, and one that is the key to future growth

Once the production of a movie or TV program has been funded and completed, one of the biggest expenses incurred by the content owner is the cost of localizing that content, in order that it can generate a revenue stream from international distribution.

Content localization is a huge and complex business, and one that relatively few people fully appreciate.

First, let us understand what localization is. At its most basic level, it is creating a local language dub or subtitles, often both. It is also about translating the opening and closing credits.

Editing the content for local markets is also part of the process. This may be to comply with national regulations, guidelines and cultural preferences, or it may be to do with the rules of a particular carrier or distributor. Then there may be localization of some of the images themselves, as a shopfront or sign in a workplace setting may need to be "localized" for any one of a number of reasons already outlined.

When it comes to localization, language translation, which needs to be both current and accurate, is just the start of the complexity.

For dubbed titles, the translators have to be actors in their own right, to professionally deliver the joke or punchline, and very often they need to be engaged for the series or the life of the franchise.

That requires contracts and expensive fees. There is likely to be a Spanish, French and German Sheldon, for instance, playing his part with each episode of *Big Bang Theory* that unfolds. He might not even always be called Sheldon, because for whatever reason that name may be unacceptable in certain markets. Further, there is every likelihood that his catch phrase has been altered in some territories, perhaps because it just doesn't translate.

Security and quality at issue

The descriptions above merely scratch at the surface of this huge global industry, where both security and quality are of paramount importance.

Security, because advance copies of *Doctor Who* have to be shipped to the multiple organizations and people involved in the process, many of which may reside outside the more established markets where security procedures and processes are better adhered to.

Quality, because content rights have been acquired and paid for and program distributors do not want to be "ripped to shreds" on social media for a poor quality dub. No lesser an industry figure than Netflix CEO Reed Hastings recently had to take to the TV to apologize for a poor quality dubbing of a movie being distributed by his company in France. The title was withdrawn. How much damage does that do the companies and brands involved?

One of the key conclusions emerging from the recent MESA Europe Content Localization Workshop was that localization is a business crying out for standards, better technology and best practice guidelines. Another often heard comment was that localization needs to be taken more seriously by M&E–a global industry that is undergoing significant growth, opening up new markets and increasing demand for content.

Localization also needs a higher profile and a greater appreciation as windows continue to shrink and the whole process has to be delivered in a shorter and shorter timeframe, whilst still meeting the quality and security requirements outlined above. It is a process that impacts on the audio, video, text and metadata elements of program production and distribution.

MESA creates a platform for community dialog

To reflect the growing importance of this sector and adequately support its members involved in this business, MESA, led by MESA Europe, is to launch a Content Localization Council in the coming months, in order to provide a platform for the content community and its industry partners to ensure that the industry needs are met in full. ■

Jim Bottoms has been closely involved in the home entertainment sector for more than three decades. As Executive Director of MESA Europe he is an industry advocate working with member organizations whose range of business activities spans the entertainment supply chain.

To access the highlights of the recent MESA Europe localization workshop, or to obtain more details on joining the Content Localization Council, contact Jim Bottoms (jim@mesaeurope.org) or David Millar (david@mesaeurope.org).

The History and Evolution of Awards Screeners

By Bryan Ellenburg, Content Security Advisor, Production & Post Production, CDSA

Entertainment distribution has moved to digital streaming, it's time for screeners to do so too

Every holiday season, the mailboxes and doorsteps of members of Oscars governing body the Academy of Motion Picture Arts and Sciences (AMPAS) and film industry guild members are littered with DVD screeners. They arrive by U.S. Postal Service, UPS, and FedEx. They are typically sent with studio expectations of "signatures required", to preserve a chain-of-custody and to prevent loss or theft. In this past awards season, I received 39 DVD screeners as a member of the Producers Guild of America. I signed for less then 10, with the rest either left on my doorstep or in my mailbox.

The DVDs themselves include stern language on the packaging, inserts, or the DVD menus indicating or implying that the DVDs might be watermarked, and that they are not allowed to be copied, loaned, traded, or uploaded to the Internet. They also ask for the DVDs to be returned or destroyed after the voting period, a request that is unenforceable.

So, how did the M&E industry get into such a fine mess screener with insecurity, and how do we fix the problem? First, a bit of history on how awards screeners evolved.

Up until the late 1980s, Oscar campaigns relied upon private screenings of 35mm prints in theaters around New York and Los Angeles, coupled with plentiful "for your consideration" ads in *Daily Variety* and *The Hollywood Reporter*.

In 1987, Z Channel, a pay TV station exclusive to Los Angeles, aired still-in-theaters *Dirty Dancing* as an unannounced special awards presentation. For the first time, a movie was available in the homes of awards voting members, and this event set the stage for what was to come next.

The VHS era

In 1990, the VHS awards screeners strategy was launched in earnest, primarily led by upstart independents including the Samuel Goldwyn Company (*Wild at Heart, Longtime Companion*), Miramax (*The Grifters*), Avenue Pictures (*The Field*), and New Line Cinema (*Metropolitan*). Warner Bros. was the first major studio to put out a pre-release VHS screener (*Goodfellas*), while more conservative Walt Disney Studios released screeners of *Pretty Woman* and *Dick Tracy,* two titles that had already been released on home video.

With VHS copies readily available, copying and sharing was a very simple task. Macrovision copy protection had been around since 1982, but it was a minor roadblock for illegal copying. An inexpensive video signal modulator from Radio Shack could bypass this "copy protection", and unauthorized copies spread like wildfire. Having a VHS awards screener conveyed status around town, and some talent agencies had their own banks of VHS copying equipment to make them available for agents and their talent.

The DVD era

Starting in 1997, the DVD format entered the consumer marketplace. However, DVD was not a fait accompli as the next-generation consumer format— there had been a prolonged technological battle of rival DVD formats that had just been settled. To complicate matters, a rental DVD format variation, known as Divx, was introduced, which included encryption and digital rights management that limited playback to 48 hours after the initial viewing.

Ironically, the Divx format would have been a great solution for awards screeners.

In 1999, New Line Cinema tested the waters by releasing an awards screener of *Magnolia* on DVD. In these relatively early days of DVD, studios or independents would send both a VHS and a DVD copy, with concerns that the aging members of AMPAS might not be able to play a DVD. This of course only contributed further to potential piracy of these screeners, with a much higher quality bootleg.

By 2001, the DVD screener gained traction — of the 43 screeners sent out that season, 27 were released on DVD. In 2002, 56 awards screener titles were sent out, with 53 sent on DVD. Not so coincidentally, 2002 was also the year DVD sales topped VHS sales to consumers.

The MPAA screener ban

On September 30, 2003, the Motion Picture Association of America (MPAA) as a one-year experiment banned all screeners, pointing to the fact that screener copies had been showing up on eBay, and were becoming the source of high quality bootlegs throughout the world. Opposition was swift, and on October 22, 2003, MPAA partially reversed the ban, allowing VHS screeners only, with their distribution limited to the 5,600 Academy Awards voters. A total of 43 VHS awards screeners were sent.

The limited screener policy did not sit

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Prior to joining CDSA, Bryan Ellenburg was VP of Global Content Security at Paramount Pictures.

Fulfilling the Promise of Big Data in the M&E Business

By Christy King, Strategic Consultant, MESA

In the race to develop actionable data, setting the right goals is key

This year, the volume of voices in the media business talking about "big data" has cranked up to 11. Across the many conferences and industry events I attend, the meaning behind the term is being examined and redefined. We are all drooling over the idea that our unstructured data sets can maybe nicely hook up to provide actionable data.

We believe that these bits of data, isolated in silos across company departments, physical locations, legacy equipment or software, or even in other businesses, hold the promise of revealing mythical answers to tough business questions. The promise of a fact–based crystal ball in the form of an easy-to-read pie chart is an irresistible draw–a Nostradamus in the cloud via an SaaS model that lets us drag and drop failures like rain. Each new service provides a new shiny ball of actionable patterns across sets of mysterious data, theoretically bringing in revenue every time somebody runs a report. Hire another analyst, make more money. Right?

One idea that I think people will see over time is that connecting disparate data sets is a lot less like magic, and lot more like a media asset management and distribution workflow.

Just a few short years ago, metadata for a media asset management system colloquially meant logging what was happening on screen; sports stats, celebrities, famous locations, dialog and closed captioning.

Today's more sophisticated media metadata serves a function a whole lot closer to its original meaning: A method to describe what data sets contain.

In this brave new world, metadata serves as a way to find the patterns you are looking for, across all kinds of systems and databases, without having to stumble through different user interfaces, or login screens.

Everything from stored media, to social media use, demographic relevance, product vertical, and brand placements, plus myriad business data sets like how much revenue (and costs) came from rights, distribution, product ties, production equipment, and sponsorship connections.

Managing technical complexity

The tough part is that innovation may be happening too fast – faster than people can make decisions on what is useful now, versus what will be useful tomorrow. I fear that much like huge enterprise MAM installations that failed more than once before finally serving company needs, we are likely going to see painful mistakes before big data's opportunities have a chance to help save companies more than they cost.

It seems to be that the greatest challenges for businesses to adopt new data and analytics workflows is complexity, and lack of experience in the new technology and business models. Much of this technical complexity can be helped by cloud technologies, but that is another place where we can inadvertently create money pits.

For cloud technologies to help, companies first have to address the challenges such as a lack of experience in the technology, security, and business models.

Company leaders can be overwhelmed by rapid innovation cycles in complex technologies. Media executives will need to work hard to foster collaborative thinking. People will have to help evaluate new technologies and business benefits all the time. Execs will have to get really good at quickly identifying creative technology uses that advance their organization's strategy, or lead to a new strategy. And just as quickly, learn to jump off of platforms or trials that don't achieve the goal.

One concept in all this new technology that doesn't change: Media businesses must be absolutely clear about the goals they are trying to achieve.

Learning "extra" information in connecting (or creating) big data sets is great, and almost inevitable if you have talented analysts. But to prevent the tragic crash and burn caused by scope creep, you have to vigilantly spend time and energy defining business goals.

Big data will provide information that will absolutely change everything about the media business, but if nobody has defined the right questions, you'll be left with meaningless answers given by the world's most expensive Magic 8 Ball. ■

Christy King shares her years of media management expertise to help companies make fiscally responsible decision and design maleable workflows to keep up with a rapidly evolving consumption environment. She previously spent nine years as the in-house technology consultant and tech vendor manager for Zuffa, LLC sports entertainment brands, and recently served as COO for a software company serving the production marketplace.

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Creating Smarter Content with Cognitive Technologies

By Mary Yurkovic, Director, Smart Content, MESA

Cognitive technologies can help companies improve operating performance, innovate and create new experiences, and enhance market position

Metadata has long been recognized as crucial to content and asset management, particularly for search, discovery and distribution. Yet the undertaking of inputting "the data" remains an unenviable task often avoided. Many organizations are still relying on humans to enter this data and usually it is first entered on spreadsheets, then re-entered in another platform, such as an asset management system. Data entry is all too often neglected to the point where the content just does not get tagged properly with information that later is recognized to be critically important to a company and its operations. This is a huge struggle in all organizations and in all industries. With the emphasis on big data and mining "the data about the data", it is critical that organizations have their content curated and tagged properly. Content is king and the data is the gold. We all know this, but very few organizations are actually practicing and enforcing this to make their content intelligent. If technology requires metadata to work, we need technology to create the metadata.

With this strong re-emergence of cognitive technologies, computers are taking over! This is probably much sooner then we think. Artificial Intelligence, machine learning, natural language processing, speech recognition, content recognition technologies, robotics, etc. are making enormous progress. Many solution providers and organizations, including some MESA members, are shifting their focus and significantly investing in these core technologies. It is estimated that spending on cognitive technologies will soar to more than $31 billion in 2019.

Consider this: people expect to be able to ask their magical smartphones for what they want, such as driving directions, the nearest ATM, or Robert Parker's rating of their favorite wine, and receive an intelligent response. These same expectations are driving cognitive technologies into organizations on all levels including making their digital content smarter.

Making smart content effective

Automating aspects of tagging content is primed to become one of the most disruptive forces for content creators, librarians, metadata managers, and just about everyone throughout the entire digital supply chain. Positive or negative, finding the information and content you need quickly is critical to the success of all media organizations (and it limits frustrations!). Content is still being produced at a massive rate and 90 percent of the world's data was created in the last two years. The key to helping organizations get the most from their digital assets is to automate the content "processing" and make content smarter through an effective digital strategy. The only way to advance harnessing all of this is to have cognitive technologies intervene. This will certainly have a huge impact on the content itself and the humans who deal with it.

"Effective" smart content has become the foundation for competitive advantages in all industries. Where speed and scale were once technology's most important requirements, today's challenges are no longer a question of computing and human power. The opportunities offered by mechanizing data and information come with new requirements for accurate data that encompass comprehension, context and connection to content as well as the benefits of analytics. A look at some of the basic cognitive technologies offers advanced solutions.

Cognitive technologies will have an impact on all organizations in the coming years and not just with their content. There will be unimaginable and amazing uses of these technologies. Leaders in the space will find ways to leverage cognitive technologies to improve their operating performance, innovate and create new experiences, and ultimately enhance their position in the market.

The sky is the limit with cognitive technologies and making content smarter. We need cognitive technologies to push the metadata "data entry" envelope to really make our content worth exploiting, not just now but well into the future.

Consequently, the cognitive technologies train is now moving ahead at hyper-speed and is taking us to places (of mining gargantuan data, granular content discovery, repurposing, expeditious decision management, etc.) that we never imagined when the first databases, asset management platforms or business intelligence tools appeared on the market. ■

Digital strategy consultant Mary Yurkovic has more than 15 years' experience in the publishing, entertainment and technology sectors. She has been responsible for providing efficient and effective solutions for major media companies and her deep understanding of technology, content, and digital workflows serves as the foundation for implementing successful solutions. She has helped companies extend their brands to the digital space worldwide.


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FEEL THE WONDER

Virtual Reality: Visual Storytelling's Quantum Leap

Hollywood is investing in the technology and ready to fill consumer demand for immersive experiences

By Ramón Bretón, Chief Technology Officer, 3rd i QC

"I truly believe that VR will be a quantum leap forward for storytellers, just as the motion picture was a century ago... Auguste and Louis Lumière were screening one of their first movies in Paris in 1896. It was a 50-second silent film of a locomotive entering a train station and the audience that watched it was so overwhelmed and terrified by the moving image of a life-sized train coming at them that they screamed and ran to the back of the theater. But in VR, there is no way to hide from that train. Virtual reality is completely immersive. You step through that window and you are in a different world."
–Kevin Spacey, at the AT&T Developer Summit

Abstract: Innovations in visual storytelling technology, such as the transition from black-and-white film to color, have largely been centered on presenting a more detailed, life-like image to the viewer. Now that virtual reality has arrived, filmmakers have the opportunity to immerse the audience in the world they create, evoking deeper emotional connections not possible in traditional presentations. With devices like Google Cardboard democratizing the VR experience, and with the release of more technologically advanced headsets, consumer interest in virtual reality is quickly turning into consumer demand for high quality content, impacting content creators and content owners alike.

Since the days of the first magic lantern shows, the art of visual storytelling has evolved, becoming more lifelike with each step. At the dawn of the twentieth century, slide shows gave way to black-and-white moving pictures; later, synchronous sound augmented the audience's connection to the screen. Color film, which provided a more accurate depiction of how humans view the world, eventually became standard. Technologies such as Cinerama and Cinemascope increased screen size and aspect ratio to fill the theatergoers' field of view, while 3D exhibitions were born out of a desire to immerse the audience in the action.

Home entertainment has undergone a similar evolution, beginning with the phonograph, then radio, then black-and-white television, followed by color. Improvements in image quality, coupled with an increase in the average home screen size, have served the goal of presenting the most realistic images possible to the viewer. Comparing the 1950s home television to today's Ultra HD High Dynamic Range panels reveals how much more immersive the home experience has become.

In terms of immersion, the most spectacular theatrical or home presentation pales in comparison to a virtual reality experience, which, by its nature, fully inserts the viewer into the world presented; the VR viewer is literally surrounded by the environment designed for them. There is nowhere to look that isn't part of the illusion.

More and more storytellers are turning to this new technology to convey their narrative. At the 2016 Sundance Film Festival, there were 30 VR experiences, including

Not only being present in a virtual environment, but to have agency within it – the freedom to move and/or affect one's surroundings – greatly increases virtual reality's already strong sense of presence.

three full-length movies; this was up from nine VR experiences in 2015.

Presence and empathy

The suspension of disbelief encouraged by a compelling theatrical work has its counterpart in the world of virtual reality: "presence." However, instead of simply losing oneself in the story, well-executed virtual reality imbues the viewer with the sensation that they are not simply observing, but that they are actually a part of the virtual world. This presence comes fairly naturally when one is immersed in the technology, and VR filmmakers are taking full advantage of it.

In order to heighten presence, many VR experiences are told in the first person, in which the viewer is the main character. Unlike traditional theatrical and television narratives, in these pieces all actors are directed to engage the camera. In the recent narrative sci-fi short *Defrost*, by writer/director Randal Kleiser, the main character has just awoken from a cryogenic freeze and is confined to a wheelchair. The piece was filmed from the character's point of view, using a mannequin in a wheelchair, with the VR camera replacing the dummy's head. When the attention of the other characters is on the protagonist, in this case, the viewer, the sense of belonging to the story is uncanny.

An interesting byproduct of VR presence is an increased empathy for the characters. Strapping on the headset, or HMD (Head Mounted Display), and feeling immersed in the world because one can look in any direction makes the characters feel much closer to the viewer; closer in the physical sense, because of the illusion of being placed in the same environ as the characters, as opposed to watching the story unfold on a screen, but also closer in the emotional sense. *The New York Times'* VR showpiece is *The Displaced,* a documentary detailing the experiences of three children whose homes are ravaged by war. The sense of connection with these children as their plight unfolds is profound. It is difficult not to be moved when one is placed within a war-torn classroom, daylight streaming in through the bombed-out ceiling, with the very child the classroom was meant to educate. It is an emotional experience unlike what would be possible if this were presented as a traditional documentary.

Adoption and monetization

This is not the first time virtual reality has been offered to the public. However, unlike in the past, the power to drive a VR experience now resides in the pockets of most media consumers: the smartphone. In 2015, consumer exposure to VR reached new heights largely due to smartphone-based viewers, when Samsung released its $99 Gear VR. Perhaps an even more significant event occurred last November, when *The New York Times* distributed the Google Cardboard viewer to each of its 1.3 million subscribers.

2016 will see the release of three advanced computer-based VR headsets: Oculus Rift, the Sony PlayStation VR, and the HTC Vive. Market penetration of virtual reality HMDs will increase as technologies improve, costs decrease, and consumer awareness turns into demand. According to ABI Research, combined shipments of VR devices are expected to reach 43 million by 2020.

Smartphone-based VR, while fully immersive, is currently a largely passive experience, due to the present limitations of mobile technology. The increased processing power of computer-based VR, however, permits the viewer to move within and interact with the virtual world. Not only being present in a virtual environment, but to have agency within it – the freedom to move and/or affect one's surroundings – greatly increases virtual reality's already strong sense of presence. It is precisely this interactivity and increased connection to the virtual world that will help shift VR from a no-cost-to-the-consumer marketing tool to a paid-for, premium experience. One such example is *The Martian* VR Experience, where the purchase price is justified because the viewer is not just immersed in the alien setting of the film, but is also an active participant in astronaut Mark Watney's survival and escape. In exchange for their money, the viewer is not only transported to another planet, but given something to do, to be part of the story and feel the emotional connection that comes with the success or failure of the mission.

Given the presence and agency of interactive VR, storytellers can weave a rich, multi-character fabric that can only be fully appreciated when the viewer watches the story unfold from the viewpoints of various characters dispersed throughout the virtual environment. Instead of the traditional convention of cross-cutting between scenes of simultaneous action or dialog, the viewer is tasked with exploring, to discover the narrative for themselves. Such an experience not only encourages repeat viewings, inviting the consumer to co-direct the story, but ultimately promises a more satisfying experience, as it engenders a deeper emotional resonance than is possible with a traditional linear presentation. A compelling experience such as this will have a direct monetary value to the consumer.

Also promising for monetization are interactive narratives tied to established IP. What Star Wars fan wouldn't want to board the Millennium Falcon, first viewing the action unfold in the cockpit, then making their way to the gun well to witness a dogfight with a TIE fighter? How much would a Trekkie pay to be fully present on the bridge of the Enterprise, then choose to either beam down to an alien planet with the away team, or instead ride the turbolift to engineering to see what transpires there?

Industry impact

The VR ecosystem – content creators, equipment manufacturers, software designers, and distribution platforms – has exploded in the past five years, with over 130 companies emerging, *Venture Beat* reported last October.

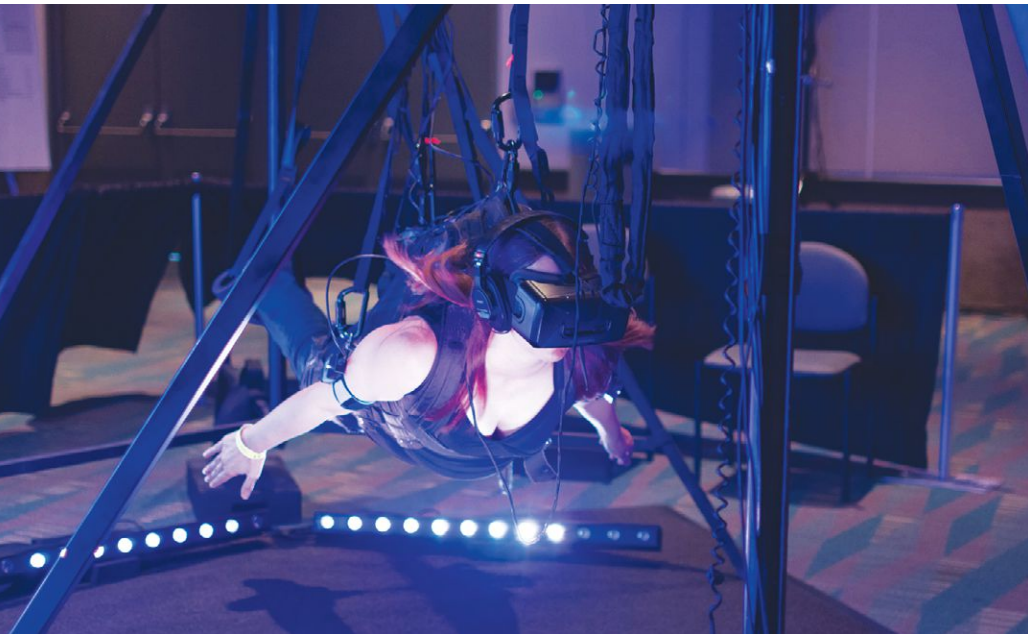
Continued on page 92

Prior to his 14 years at 3rd i QC, a pioneering company in the field of quality assurance for the home entertainment industry, Ramón Bretón spent 10 years in the music business as an audio mastering engineer, giving him over twenty years of experience contributing to quality entertainment for consumers.

How Entertainment Will Be Altered by Immersive, New Consumer Experiences

Fulfilling new technology's promise will require the development of new skillsets

By Bob Eicholz, CTO Production Services, and Gaël Seydoux, R&I Lab Director, Technicolor



Abstract: Immersive reality-based entertainment will completely rewrite the rules of engagement between content creators and consumers. It fundamentally alters the relationship that audiences have with the content that will be presented to them as we shift to putting people "inside the experience" rather than "in front of the experience." It will require all of the key disciplines in entertainment – art, science and business – to be explored anew.

The interest, energy and excitement currently building up around entertainment experiences based on virtual and augmented reality (VR/AR) is now palpable throughout the industry. Content creators, service providers and device manufacturers are all placing major bets that a new era of immersive reality will transform entertainment. In so doing, the industry is looking forward to new and profitable opportunities to connect more intimately than ever with consumers.

The excitement in the M&E industry about virtual and augmented reality is reflected by the optimism expressed across the spectrum of industry analysts who appear to be signaling that now is the time to make the immersive reality plunge. According to most analysts, 2016 is the year we will not only see new VR headsets launched, but also major rollout initiatives for broad consumer introduction.

ABI Research, for instance, believes the aggregate market for virtual reality devices will grow at an average combined annual growth rate (CAGR) of 106 percent between 2016 and 2020. By the end of the decade, the folks at ABI expect 43 million devices to be shipped per year. On the content side of the equation, Juniper projects that AR apps in the mobile games market will generate 420 million downloads annually by 2019, up from 30 million in 2014. Indeed, as many as 23 million American adults – or 11 percent of the online adult population – have already tried virtual reality according to YouVisit's Virtual Reality Appetite Index.

These are all heady numbers that are based on sound analysis. That said, there is a tremendous amount of work for the entire ecosystem to engage in collaboratively if consumers are to see the full promise of immersive experiences available at the price points that will stimulate demand.

Engaging all senses

At Technicolor, we believe immersive reality represents a new art form altogether. Artists will have to understand what it means to engage all human senses (visual, audio, tactile... even smell). What we are already learning is that there is very little margin for error throughout the content creation, distribution and rendering process. The slightest performance anomaly not only disrupts the all-important willing-suspension-of-disbelief, but also creates a level of disorientation that can actually make people sick.

As a result, artists will not only have to develop an extremely high technical command of the new medium, but also establish a deeper biological understanding of how audiences respond to the multi-sensory experiences.

The role of three-dimensional sound will

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Artists will not only have to develop an extremely high technical command of the new medium, but also establish a deeper biological understanding of how audiences respond to the multi-sensory experiences.

also play an extremely important role in the storytelling process, since it will likely be the key tool for engaging and properly focusing the attention of audiences who have a 360-degree field of vision within the experience. Mastering the technology to make people look up or down, left or right, or directly behind them when desired will be critical to maintaining some semblance of control over the narrative process.

The artistic palate is also expanded in immersive reality entertainment with the inclusion of haptic technologies that enable audiences to actually experience a sense of touch. Integrating these effectively into the process is a skill that must be mastered so that stories are advanced and enhanced; the risk of misusing haptic elements can cause distraction or cognitive dissonance.

These are just a sampling of the new skillsets that will have to be developed to create the next generation of compelling immersive reality experiences. But there is good news. While these are all new fields of knowledge and expertise, the highly evolved state of today's filmmaking and videogaming industries offer a strong basis from which we can move forward. In short, our collective skills are 100 percent transferable.

Meeting technological milestones

From a science and technology perspective, immersive reality represents a new frontier of research and development that is extremely exciting. There is, however, pressure to reach a few key milestones as quickly as possible to ensure that these entertainment experiences effectively reach consumers between now and the end of the decade.

The industry desperately needs new immersive reality authoring tools that allow us to capture, manipulate and edit content so that we can deliver compelling experiences to global audiences. Specifically, we need to create intuitive tools that are interoperable so that they can be used by the entire creative community – and just as importantly – can be picked up by each ensuing link in the value chain to consumers in theaters, at home, or to where ever they happen to access content on mobile devices.

This leads to the need for improved bandwidth management and optimization. The amount of bandwidth that is needed to get an experience to theaters, the home, or mobile devices is huge. This is because the 3D, 360-degree perspective associated with putting consumers inside the entertainment experience exponentially increases the amount of data that must be delivered.

Moreover, the image and sound fidelity that will have to be supported is extremely high. From a resolution perspective alone, it is likely that we will need to send far more than 4K resolution; we will need 8K or more...per eye. This has significant implications for the wired and wireless network infrastructure that will have to deliver this payload to consumers.

With massively higher payloads comes a requirement for better processing power in the home and on the go. We are going to need more computing power for whatever technologies catch the data from the network (such as set-top-boxes), and we will need to make sure that the display technologies (such as mobile phones, tablets and head mounted displays) can render and deliver these immersive reality experiences according to extremely demanding performance parameters.

A little further down the line, progress will have to be made in developing comprehensive haptic experiences that can be seamlessly integrated into the storytelling process. Work is even underway to develop olfactory and air motion technology to further enhance the compelling immersive experience for consumers.

New economics of immersive reality entertainment

As important as it is to master the art and science of immersive reality, it will be even more important to develop an end-to-end ecosystem that allows value to be aggregated and elevated as the experience works its way to the consumer. Constructing effective industry-wide business models will be the only way to bring the market compelling, blockbuster immersive reality experiences that will be expensive to create, require significant enhancements to infrastructures, and drive the need for new innovations in customer premise equipment (CPE) and consumer electronics.

It is for this reason that we believe an ongoing and comprehensive, multi-disciplinary dialog needs to take place. If we are to bring the best and most demanded experiences to market, then the entire ecosystem will need to demonstrate a commitment to: 1) innovation in order to develop technologies that interoperate through the value-chain; 2) industry-wide collaboration, to define business models that create opportunities for all segments of the value-chain; and 3) delivery of truly exceptional and engaging immersive experiences to consumers.

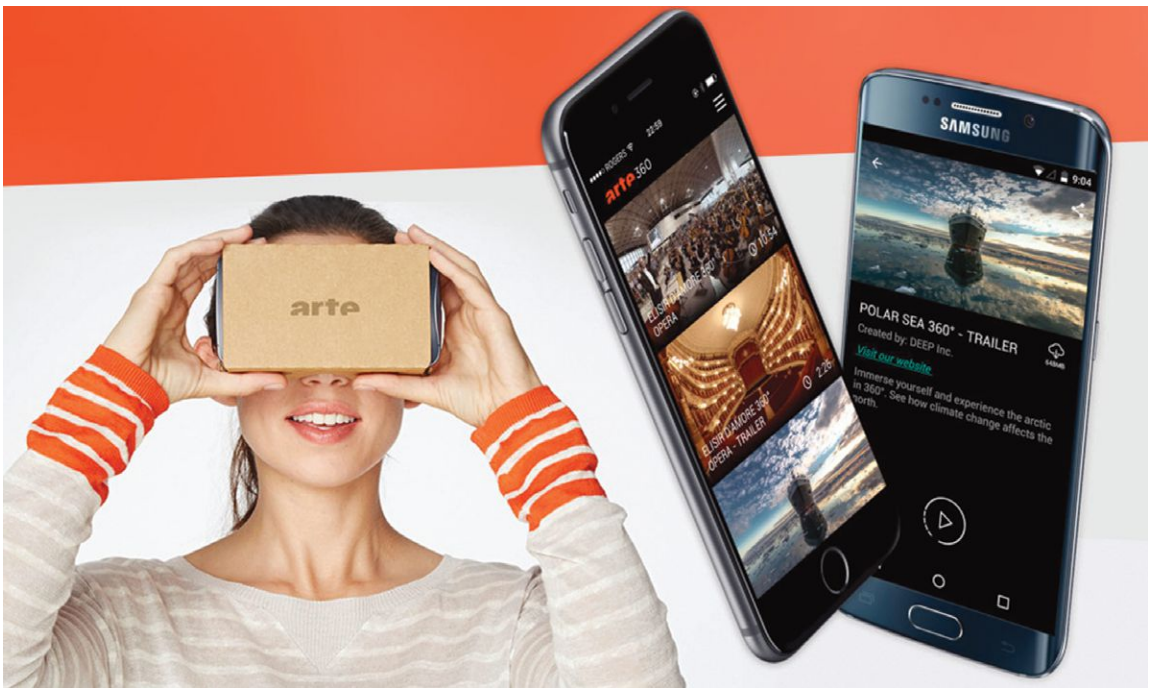
This last point is critical, because the expectations of consumers have truly been raised to stratospheric levels. If the content fails to meet these expectations, delivery is inadequate, or complexity is introduced at the point of consumption, then we put at risk the ability to deliver on the promise of immersive reality. ■

Bob Eicholz *leads the strategic technology direction for Technicolor's Production Services worldwide, strengthening the company's technical leadership by increasing industry collaboration, furthering systems and architecture compatibility and reinforcing content security practices. He also leads Technicolor's Virtual / Augmented Reality initiatives globally.*
Gaël Seydoux *manages a team of 65 people dedicated to Immersive Content (AR and VR), CGI/VFX authoring tools and Light Field. He has 15 years' experience creating narrative projects, immersive Omnimax 3D movies and visual effects for movies and TV series.*

Virtual Reality Creates New Broadcast Opportunities

The number of TV broadcasters and producers entering this bold new realm is beginning to spike

By Nicole Greiner, Research Analyst, VAST Media



Cultural channel ARTE's VR productions can complement on-air programming or stand alone.

Abstract: Virtual reality can do more than provide 360-degree bonus or behind-the-scenes material to extend TV shows. In the future, the technology could change the shows we watch entirely and enable participatory, truly immersive narratives that let viewers join battles, explore fictional worlds and help catch the bad guys. The TV experience could completely alter for viewers, as they can engage with series in a way that was simply not possible before.

Virtual reality is gaining momentum. While some years ago, the technology still seemed futuristic and inaccessible to consumers, VR has come a long way and is starting to enter our living rooms. Thanks to a range of new and upcoming headsets, the technology is officially a trend, and no longer reserved for technology freaks and experts.

At the end of January, Google for the first time revealed some numbers around the adoption rate of its Cardboard, the low-cost DIY headset that turns nearly any phone into a VR viewer: since its introduction in 2014, 5 million of these devices have been shipped and users downloaded more than 25 million Google Cardboard apps from the company's Play Store. Ten million of these downloads occurred between October and December 2015 alone, according to Google's company blog, indicating a clearly growing interest in VR.

In the same timeframe, Samsung in November launched its $99 Gear VR powered by Oculus. The headset sold out on Amazon and Best Buy less than 24 hours after its release. 2016 promises to become a huge year for VR with both Oculus VR and HTC releasing the consumer editions of the Oculus Rift and HTC Vive Pre. The Oculus Rift, which costs $599, might have dampened the VR euphoria for some users as it is not exactly priced for the mainstream, but nevertheless the dawn of consumer VR is here and

Startups and more established companies such as NextVR, Jaunt, Ovrture, IM360 and many more received millions of dollars of funding from media companies including Comcast, Time Warner, The Walt Disney Company and Sky.

people are hungry for more.

For VR to really become a consumer product, however, the content ecosystem is key. We now have the devices (and their prices are expected to decline over the next months, as they usually do with new hardware), but there is still a lack of compelling content to make a broader consumer base want to purchase the more advanced headsets. Gaming is discussed as the key driver for VR's rise and the first industry to adopt the technology, but other industries engage in building VR experiences as well. Both Samsung and Oculus, for example, jumped into VR content production themselves and launched their own VR movie studios. But the TV might actually be the medium that will eventually let virtual reality break into the mainstream.

Numerous companies specializing in the production of VR content have emerged in the last couple of months. Startups and more established companies such as NextVR, Jaunt, Ovrture, IM360 and many more received millions of dollars of funding from media companies including Comcast, Time Warner, The Walt Disney Company and Sky. They assist broadcasters in developing new experiences for viewers that give a glimpse of what the future of television might look like.

At Vast Media, we are constantly on the lookout to provide our clients with case studies of unique and creative new projects in digital television and storytelling. In the last couple of months, we observed that the number of TV broadcasters and producers entering the bold new realm of virtual reality is beginning to spike. There are several ways in which VR could reshape television and the way we watch and interact with its content, as some early adopters in TV and their VR projects illustrate.

Sky News began VR reports last fall with a look at Europe's migrant crisis.

Copyright: Sky UK / Jaunt Inc.

A 360-degree view of the world

In early December 2015, Franco-German culture channel ARTE launched its own dedicated virtual reality app and platform 'ARTE360' to provide viewers with easy access to all of its 360-degree productions. 'ARTE360' is available on the web, as an app and on the Samsung Gear VR. It was designed and developed in cooperation with DEEP Inc., a studio dedicated to exploring and defining the evolving language for cinematic storytelling in VR.

Users can immerse themselves in concerts, short films and documentaries – all shot using special 360-degree camera technology. The content can be explored from different perspectives by moving the mobile device or swiping the screen; users with a VR headset can switch to VR mode to take full advantage of the immersive videos. 360/VR storytelling is now a regular part of the channel's content offering. The films are either a complement to ARTE's on-air programming or short stand-alone productions that transport the audience into space, deep down into the ocean or to operas.

Documentaries, nature films and concerts are all perfectly suited for experimenting with VR technology. As they usually aim to introduce the audience to an issue or world as vividly as possible, virtual reality is a useful and altogether different way of doing so. In the future, actually travelling the world and exploring different places could to some extent be replaced by putting on a headset in the comfort of one's own home.

Before joining VAST Media, a media research and consulting company based in Berlin that provides international television industry leaders with qualitative competitive market analysis of digital entertainment and content marketing, Nicole Greiner worked as an analyst in market research and social media monitoring. She studied in Bayreuth and Milwaukee and holds an MA in Media Culture & Management.

Live streams in VR could become the norm for sports broadcasts.

News in VR gives the whole picture

Pay-Tv operator Sky is also embracing the possibilities of virtual reality technology. In mid-November, Sky News launched its first VR report titled *Migrant Crisis - The Whole Picture,* designed to give viewers a first person look at Europe's migrant crisis. The report from journalist Alistair Bucknall was made in collaboration with Jaunt, a pioneering virtual reality company in which Sky invested last year, and filmed using the new Jaunt ONE VR camera.

Bucknall provides commentary and shows users around different locations in Greece. That way, users get an impression of what it looks and feels like on a crowded beach where refugees just landed. He also takes viewers inside a tent where refugees reside. One way to watch the report is by downloading the Jaunt app and using a Cardboard headset. Users without a Cardboard can still experience the video in 360° on Sky News' Facebook page or YouTube channel. Virtual reality can make the news become more "real", providing a whole new perspective on issues and events and giving a much deeper impression of what situations look like.

Closer to the action with live VR

FOX Sports, in partnership with live VR startup NextVR, hosted a live VR stream of several Premier Boxing Champions matches on January 23. The streams were available for free through the NextVR app for Samsung Gear VR headsets. Coinciding with the live broadcast on FOX Sports, Gear VR owners were able to virtually step inside the Staples Center in Los Angeles to experience three matches– Danny Garcia vs. Robert Guerrero, Sammy Vasquez Jr. vs. Aron Martinez and Amir Mansour vs. Dominic Breazeale--closer than ever.

To realize the project, several cameras were set up inside the Staples Center, allowing viewers to follow the action right from the ring or from within the crowd. Additionally, graphics and fight commentary were integrated into the live stream.

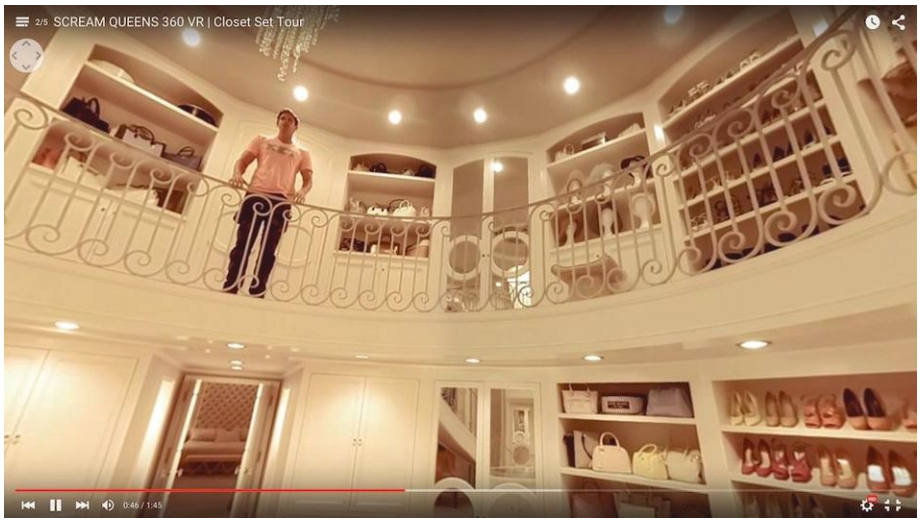
Live streams in virtual reality could not only become the norm for sports broadcasts, but also for other live events, as demonstrated by German broadcaster ProSieben, which streamed a season finale of *The Voice* in 360-degrees on the show's website, and the *2015 MTV European Music Awards,* which were fully available as a 360-degree live stream as well. Through VR, live entertainment and sports on TV might be revolutionized as viewers can experience the events in a whole new way and get a sense of being there themselves.

Step into your favorite TV shows

In November, Fox's horror comedy series *Scream Queens* released a "360 Closet Set Tour" of one of the character's bedrooms on its Facebook page. The virtual set tour marked the beginning of "Scream Queens 360 VR," an exclusive weekly VR experience that takes fans behind-the-scenes of the series and is also available on YouTube 360. The immersive videos are produced by VR production company SuperSphere.

The 360-degree set tours provide fans not only with a unique look behind the scenes of the show (e.g. the wardrobe trailer), but also let them step into the world of their favorite series as they can look around and explore the settings (e.g. the bedroom and closet of Chanel) from a new, inside perspective.

So, is VR the next big thing of the TV industry or will it face the fate of 3D television, which was also considered the future but failed to enter the mainstream? VR has made considerable progress in the past couple months, with more and more broadcasters jumping on the VR bandwagon and experimenting with the new storytelling opportunities the technology offers. It has by far not reached mainstream adoption yet, but over the next years, it could be the biggest game changer for how TV viewers consume content. ■



Fox's *Scream Queens* uses VR to go behind the scenes.

Local Relationships: The Bedrock of Global Success

It's not too late to capture global OTT market share with new strategies

By Teresa Phillips, Senior VP, V2Solutions

Abstract: For all the excitement and growth we're seeing every year in OTT, very little localized content is available in individual local markets. Instead, English-language, American content is being continuously repackaged and resold across local markets with insufficient regard for the cultures and audiences in those markets. The result: major players in the industry risk forgoing long-term success in the global marketplace by failing to establish a foothold in local markets because their catalogs are often out of touch with regional consumers.

In January, many of us were surprised by Netflix's announcement at CES that it had launched its streaming television service in 190 local markets across the world. It marked a major step forward in the ever escalating battle for supremacy in capturing a bigger share of the diverse local markets for video content and has been one of the most widely covered new stories of the year.

But lost amidst the company's bold declaration was an unacknowledged part of its message. Though the service is available in these markets, very little content is actually available in many of those 190 countries. Moreover, across those 190 countries, Netflix content is translated into just 21 languages, meaning that most of what's available now is English-language content with little appeal to local consumers.

Of even greater significance, however: until Netflix made its announcement, few people in the industry were even aware that there are 190 different viable local markets. The top five global over-the-top (OTT) providers—Apple, Google, Amazon, Microsoft, and Sony—distribute to just 107 of those countries, with Apple and Google leading the way and the others trailing significantly. And very little of what any of them

Invalid Ratings by Country

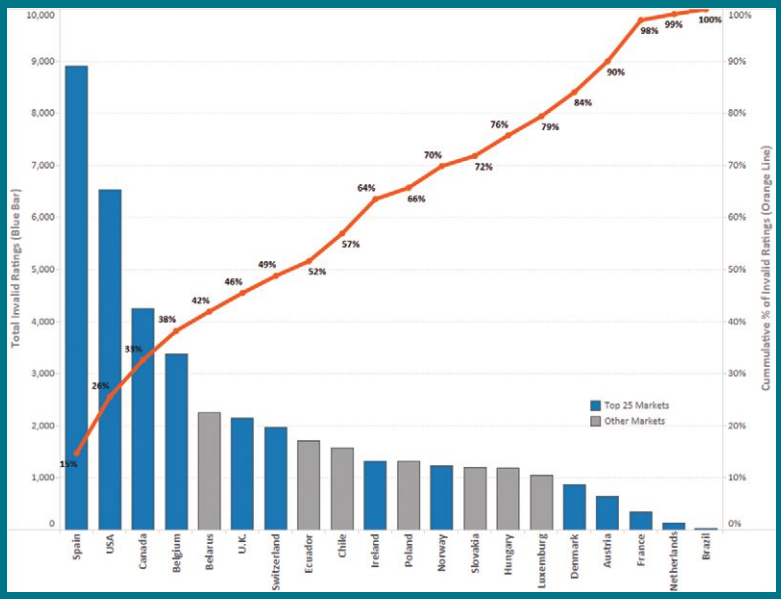


Figure 1: 42,000+ OTT film titles were shown to have invalid or missing ratings in 2015.

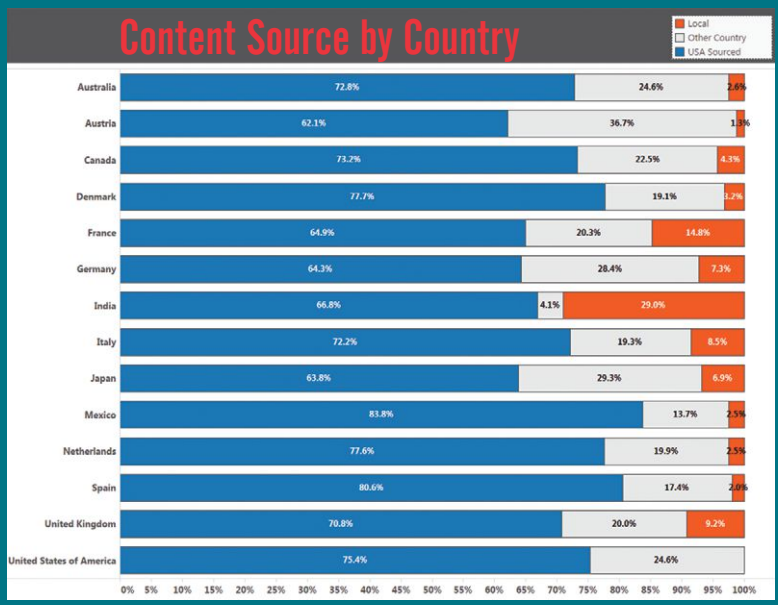


Figure 2: Origin of film content in big-5 OTT stores by country in 2015.

distribute to those markets is content that has been truly localized, holding, at best, limited appeal to those consumers.

Content providers and retailers are behaving as though this is a simple land grab, focused mostly on getting their titles into a given market with minimal localization.

A clear example of the failure to cater to local consumers can be seen in the growing number of incorrectly rated titles across various countries. Tens of thousands of titles are given a rating that does not comply with local country guidelines or is simply released on storefronts without a rating at all. Absent meaningful, local ratings, retailers and content providers fail to inform parents accurately about the nature of programs, hampering them from making viewing decisions suitable for their families. Figure 1 illustrates one way in which OTT distributors are crippling themselves even as they attempt to create global traction.

Of course, despite this data, there are still some in the industry that believe it simply doesn't matter. The truth is, however, that it matters a great deal, and we're seeing the evidence of that across the globe. To much public fanfare last year, Google Play Singapore was forced to remove several of its titles from stock by the local censorship board one week after launching in-country. The situation was exacerbated by local video retailers who were caught up in the same restriction and were kept from selling those same banned titles in their stores. When content providers and retailers don't abide by local policies, censorship boards are swift to take action—often unraveling corporate strategies created in boardrooms on another continent.

Sony Pictures Networks India EVP and head of digital business, Uday Sodhi, has noted how few of the millions of Indian OTT consumers are actually willing to pay for the content they view. "One report states that there are 25 million OTT subscribers in the market today, of which pay subscribers would be less than 5 percent," he explains, further noting that 90 percent of revenue at the box office in India is from titles made in India. The conclusion is clear—when the content is geared towards the culture of that region, consumers there will pay for it.

This same axiom holds true in Japan and South Korea as well, where more than 60 percent of annual box-office receipts come from homegrown films. Japan alone posted box-office revenues in 2015 of over $1.8 billion. Both of these regions are extremely tech-savvy, with consumers eager to embrace OTT. Yet inroads there have been slow for the big five U.S. OTT distributors, due in large part to their lack of locally-sourced or meaningful localized content.

In all three of these countries—all of them major movie markets—locally-produced content makes up the clear majority of what drives in-cinema ticket sales. Yet when those countries are analyzed in terms of their OTT stores, only a small percentage of the titles there are locally sourced. The industry simply is not giving consumers in these and many other global markets what they want to watch and pay for.

As shown in Figure 2, outside of India and France, locally-sourced OTT titles made up less than 10 percent of catalogs in local markets in 2015.

Netflix commits to local content creation

If one thing was made clear from Netflix's landmark January announcement, it was that it at least has an awareness of and appreciation for the value of reaching these disparate markets simultaneously. Opening the pipeline is its first step; global licensing of content and creating meaningful, original content will be the next steps. Much as it has already done in the U.S. with Netflix-exclusive content such as *House of Cards* and *Orange is the New Black,* Netflix appears committed to bringing local content to each market by producing it themselves. During his January CES keynote, CEO Reed Hastings declared that Netflix will spend $5 billion in 2016 in creating original content, second only to ESPN. To provide perspective, HBO is expected to spend $2 billion on content in 2016, up 20 percent over previous years, in response to Netflix's bold ambitions.

With 78 percent of global box office receipts in 2015 coming from international ticket sales, Hollywood studios understand that local relationships are imperative for success. Even a cursory survey of the industry shows that studios have realized this—consider Warner Bros and China Media Capital, Walt Disney and Shanghai Media Group, Fox International Productions in Russia, and Sony Pictures Entertainment in India. Major studios are partnering with local filmmakers and production companies to create content that will better serve local audiences worldwide.

For most global OTT distributors, creating their own content isn't a viable option, of course, but there are other strategies to employ that can enable them to take advantage of the enormous opportunity before them—serving local markets in a locally attractive way.

Our own experience at V2Solutions has shown us that local relationships are the bedrock of global success in the industry. Three

Continued on page 92

Teresa Phillips has more than 20 years' experience in product, operations and business intelligence. Before joining V2Solutions, she founded Graspr, an instructional video network, and also worked at Yahoo! and Time Warner Cable.

US Video Consumption & Viewership Trends

For pay-TV providers, the skinny bundle is the new "single"

By Greg Boyer, U.S. Entertainment & Media Consulting Leader, PwC

Abstract: As consumers' demand for video content continues to grow, the share across pay-TV, mobile and web continues to shift. The quality of original content paired with faster broadband speeds has enabled mobile and web content providers to challenge pay-TV over the last several years. With the availability of skinny bundles, TV Everywhere and new partnerships, pay-TV continues to battle to retain and attract consumers. The shifts in viewership across each platform vary by demographics, but there is one characteristic that remains the same–consumers want personalization and control across the large libraries of available video content. The winners will be those who look to leverage their content strategically across each platform while meeting the consumer's growing demands.

Terms like "all you can eat" and "binging" were once relegated to the analog domains of inexpensive food buffets and college keg parties. Today, however, these descriptors are much more likely to be applied to American consumers' increasing appetite for and consumption of digital video content. Today's viewers, across all age demographics, want more and are getting more as a result of more affordable traditional pay-TV services, OTT (over-the-top) streaming services, faster home Internet connections, and unrestricted wireless data plans. The era of doing more (watching) with less (spending) has arrived and it shows no signs of slowing in the near future.

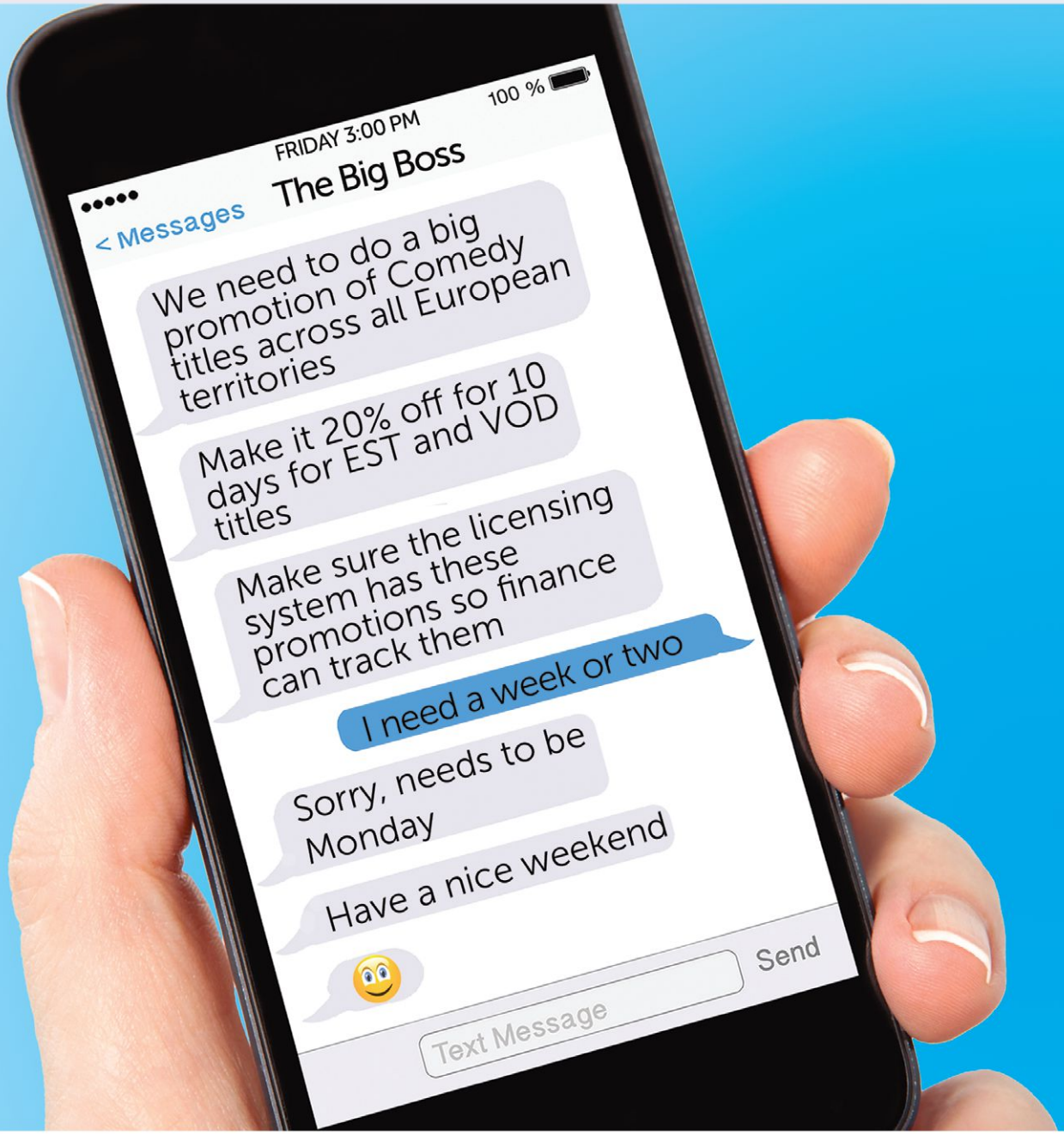
Competing via consumer customization

According to a survey conducted by PwC in Q3 2015, 79 percent of U.S. consumers subscribe to some form of traditional pay-TV service and 79 percent of those customers reported that they could see themselves subscribing to cable in the following year. However, of those customers who subscribe to a traditional pay-TV service, nearly one in four—23 percent— had recently scaled back the cost of their pay-TV package.

The good news for pay-TV providers is that cutting back does not always result in the complete cancellation of service, or cord-cutting. Customers may trim their cords by "slicing and dicing the 500-channel package into customizable and smaller pieces." Cord-trimming is an emerging practice increasingly offered by traditional pay-TV providers as a "skinnying" solution for price sensitive and value conscious consumers. Like the near obsolete $18.99 compact disc, which often contained twelve songs, but only two or three which truly mattered to the consumer, the average pay-TV bundle offers 194 channels, but the customer only watches seventeen regularly.

For pay-TV providers, the skinny bundle is the new à la carte single. Verizon CFO Fran Shammo recently reported that the company's "Custom TV" skinny bundle was proving successful, with one-third of new FiOS video subscribers signing up for the service. "It will put pressure on the top line, but will improve our

Mediamorph, the complete digital distribution solution



A single platform to easily manage contract data, pricing, promotions, and avail publishing, ensuring finance can track sales correctly

In order to maximize digital distribution revenues, you need a flexible system that can support pricing and promotion changes quickly and easily. Once you have made changes, you have to ensure that your partners have received them and detailed sales are tracked. Why make changes if you can't be sure you are being paid correctly?

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profitability from a programming standpoint," Shammo told investors.

This financial improvement extends beyond Verizon. According to the equity research firm MoffetNathanson, cable was estimated to end 2015 with a loss of about 514, 000 subscribers, notably less than half of the subscribers lost in 2014, and less than a third of the subscribers who churned in 2013. This trend suggests that to remain competitive, traditional pay-TV providers must continue to explore more segmented, affordable video bundles capable of proving value, slowing churn, and, ideally, spurring growth.

Consumers choosing to shave all or some of their pay-TV expenses are not always responding to price sensitivity. They may be reallocating their entertainment spend for what they perceive as a higher value alternative, in this case, OTT streaming services. OTT provides on-demand streaming services which deliver film and television content via the Internet, without the need for traditional cable or satellite TV subscriptions. The average US cable bill cost viewers $99.10 per month in 2014, according to the Leichtman Research Group, whereas the average monthly Netflix, Hulu Plus and Amazon Prime subscription fees are $8.99, $7.99 and $8.25, respectively. In our survey, 78 percent of respondents subscribed to at least one streaming service, and, of those who subscribed to pay-TV, 70 percent also subscribed to at least one streaming service. OTT's consumer value proposition appears to be both compelling and sustainable, as the number of OTT services and subscribers is expected to grow in 2016.

Content portability through strategic partnerships

Another primary way in which OTT services resonate with consumers is in their lack of a tether. Not only can OTT services be played from smart TVs, smartphones, and Internet-connected tablets, recent partnerships have taken them where traditional pay-TV providers have significant barriers to entry: into hotel rooms with Internet-connected televisions and onto Wi-Fi enabled in-flight airplanes. One hospitality company launched a limited partnership with Netflix to allow guests to stream their favorite television shows and movies on Internet-connected TVs in their rooms. The company is expected to provide this "portability" perk across its properties.

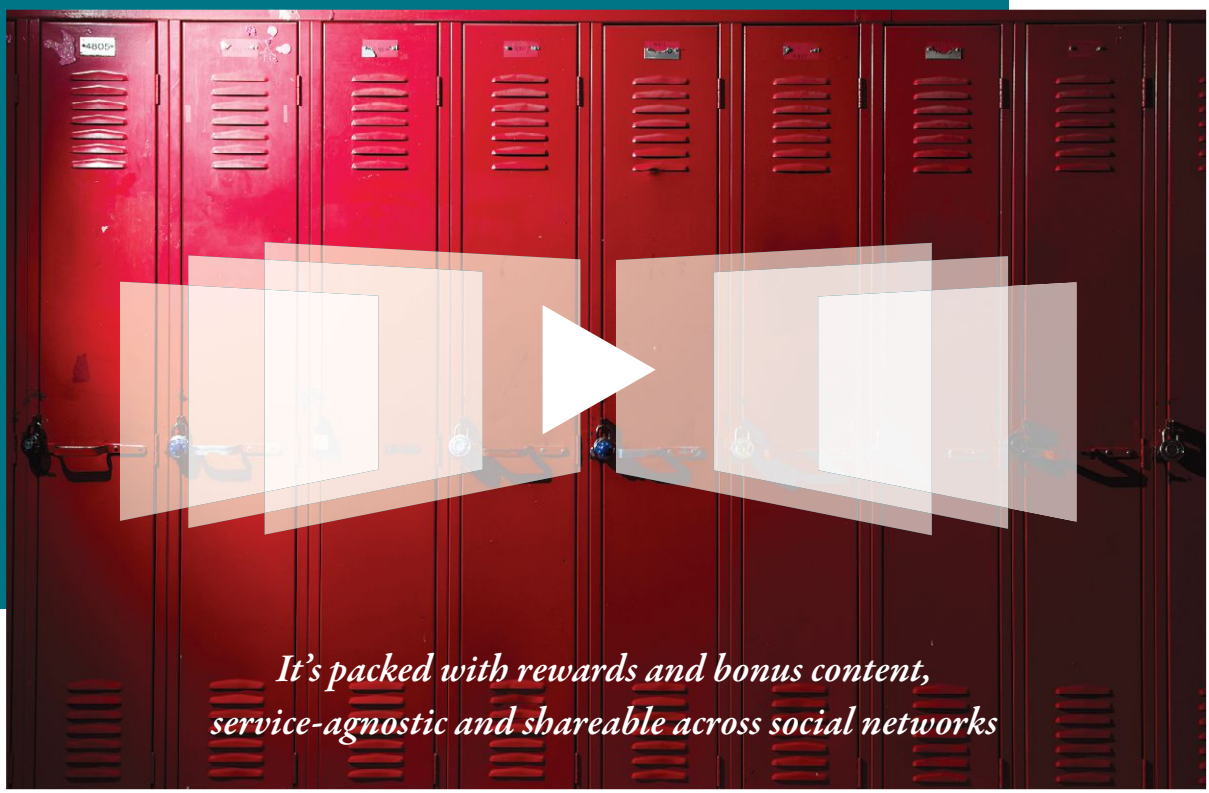
In September, Netflix and Virgin America teamed up to offer free Wi-Fi and unlimited video streaming to Netflix subscribers who were flying on Virgin America's new ViaSat Wi-Fi-equipped planes. The sentiment driving Netflix's on-demand distribution strategy is made clear in this comment by Bill Holmes, Netflix's global head of business development, "Our members tell us they want to watch Netflix anytime, in any place where they have an Internet connection." Then, in November, Amazon and JetBlue activated a partnership that allows Amazon Prime members to stream video free of charge on over 150 JetBlue aircraft with Fly-Fi broadband Internet. In addition to being lower in total cost, OTT streaming services allow for viewing in advertising-free and advertising-light environments, providing a viewing experience with fewer commercial distractions.

Recognizing the value of content consumption as a decision driver, wireless carrier T-Mobile made video viewing easier than ever in 2015, launching Binge ON, which allows customers with a 3GB data plan or larger the ability to stream unlimited video on services such as Netflix, Hulu, Sling, ESPN, Showtime, and Starz, for

Continued on page 93

Greg Boyer has more than 15 years of experience across the entertainment, media and communications industries. He specializes in helping clients reach breakthrough results by focusing on revenue enhancement, operating model design, performance improvement, business integration, and technology strategy. His clients span advertising, music, broadcasting, publishing, Internet services, and sports entertainment.

Behold the Future Locker



It's packed with rewards and bonus content, service-agnostic and shareable across social networks

By Jason Keane, CEO, Saffron Digital

Abstract: Saffron Digital is very optimistic on EST category growth, not simply because the statistics point to the fact it's the fastest growing category, but because it has the potential to be the platform for immersive and engaging digital content that entertains real fans who have committed with their wallet, whilst also opening up a new entertainment economy that will enable us to learn from our digital past and bring back an old fashioned pastime... collecting our favorite movie and TV box-sets in the virtual era.

The premium video digital entertainment market has evolved beyond all recognition over the last decade from side-loads to UV to 4K streaming and beyond, with 360-degree video and virtual reality on the horizon.

Cast your mind back to the turn of the century. I'm sure your home, like mine, was defined by the DVDs and CDs displayed on the living room shelf with pride. There lived common denominators *Pulp Fiction* and *Reservoir Dogs*—movies and soundtracks, of course. The shelves represented a canvas of who we were—our entertainment taste identity.

Over the last five years, the world vastly changed to one in which subscription video on demand (SVOD) services have challenged the collectible mindset. The digital era did not incentivize ownership or the notion of collection.

Fast forward to today and all signals indicate that electronic sell-through (EST) is growing significantly, kick-started by early release window strategies. In fact, it is projected to be one the fastest growth categories through 2019, with a compound annual growth rate (CAGR) of 16 percent. A global marketplace worth $3.2B today, it is forecast to grow to $4.2 billion by the end of 2019. So for EST, it genuinely feels the time is now.

The question is, how can the digital world emulate the old DVD/Blu-ray collectible world? Or can it? Well, it can and must, but it will be very different. While some consumers will be migrating a physical collection into the cloud, the under-25 year-old generation will migrate nothing. They simply want a deeper, richer and more rewarding experience to validate paying full price for

EST is projected to be one the fastest growth categories through 2019, with a compound annual growth rate (CAGR) of 16 percent.

an EST title. And therein lies the opportunity to design the future locker so that it essentially incentivizes consumers to collect (EST titles) and unleash network effects experienced so well by the gaming and digital communications industries.

Saffron Digital has been at the forefront of EST design for a decade, powering services past and present for the likes of Samsung, HTC, British Telecom and Carrefour and we see the future locker opportunity as a game changer. Out with static catalog locker list pages and in with an immersive ecosystem that brings the product and consumer lifecycle across both theatrical and home entertainment together to enable users to enjoy collecting movies in an environment that is dynamic, rewarding and, most importantly, a platform to share their collections across social networks.

Successful gaming companies like King.com can generate paid average revenue per user (ARPU) of up to $290, vs OTT stars like HBO, which generate $34 ARPU. The gaming companies do so because they are excellent at mining their core paying customers with engaging content. The simple formula of sign-up, complete a task, get rewarded, earn points, move to the next level, repeat and buy "extras" to accelerate their journey, has seen the likes of *Candy Crush* become a global phenomenon or a global addiction.

By no means is the future locker one big game, but it can leverage gaming mechanics that power an immersive environment to essentially transform the locker into an entertainment portal of engaging content around titles consumers have self-selected to enjoy. No longer does EST remain a single transaction. Now it becomes a dynamic longer-lasting (CRM powered) relationship with the retailer, which ultimately increases the lifetime value of each customer over time through continuous engagement.

So what does the future locker look like?

In essence, the future locker is a platform that is built upon four core pillars:

1. Content and collections

- First and foremost, this is a locker service to keep your EST titles in perpetuity and access on any connected device, anytime, anywhere–a place to buy and keep your favourite movies and TV shows.
- The future locker will also deliver access to an array of dynamic bonus content including video extras, games, exclusive content rewards and potentially future formats like VR scenes for certain titles.
- Depending on the title and its genre, the EST menu of extra content will vary, but all will add value to the core title experience.
- The key difference here is that the viewer will be rewarded for consuming, reviewing and sharing content.

2. Community and rewards

- After content depth comes community. The DVD shelf of old was not just about collecting content, but also about showing it off to friends. The future locker will enable users to present and share their catalog with friends under certain secure rights rules.
- Once users are enabled to share their personal locker catalog with their friends across social networks, they will become eligible for a key ingredient to peer-to-peer growth... a reward currency. Consumers will be able to unlock extra content for completing various tasks such as watching a movie in full, sharing a review or evangelizing a new release across their social network.

3. Communication and the consumer lifecycle

One of the key differences with the static locker services of today is that the future locker will also be a marketing communications platform on which:

- Users can share their locker across all social networks and be rewarded for it.
- Content owners and retailers can market and reward their transacting customers with such incentives as early release windows, catalog bundles and exclusive content packs and promotions.
- Value-chain lifecycle partners are enabled to manage the communication of the title/franchise lifecycle, such as a cinema chain selling a ticket to a franchise sequel or super ticket in conjunction with the content owner/retailer.
- Advertisers and sponsors might sell contextually relevant product to highly targeted audiences; for example, Samsung sponsoring the *Spectre* early release window.

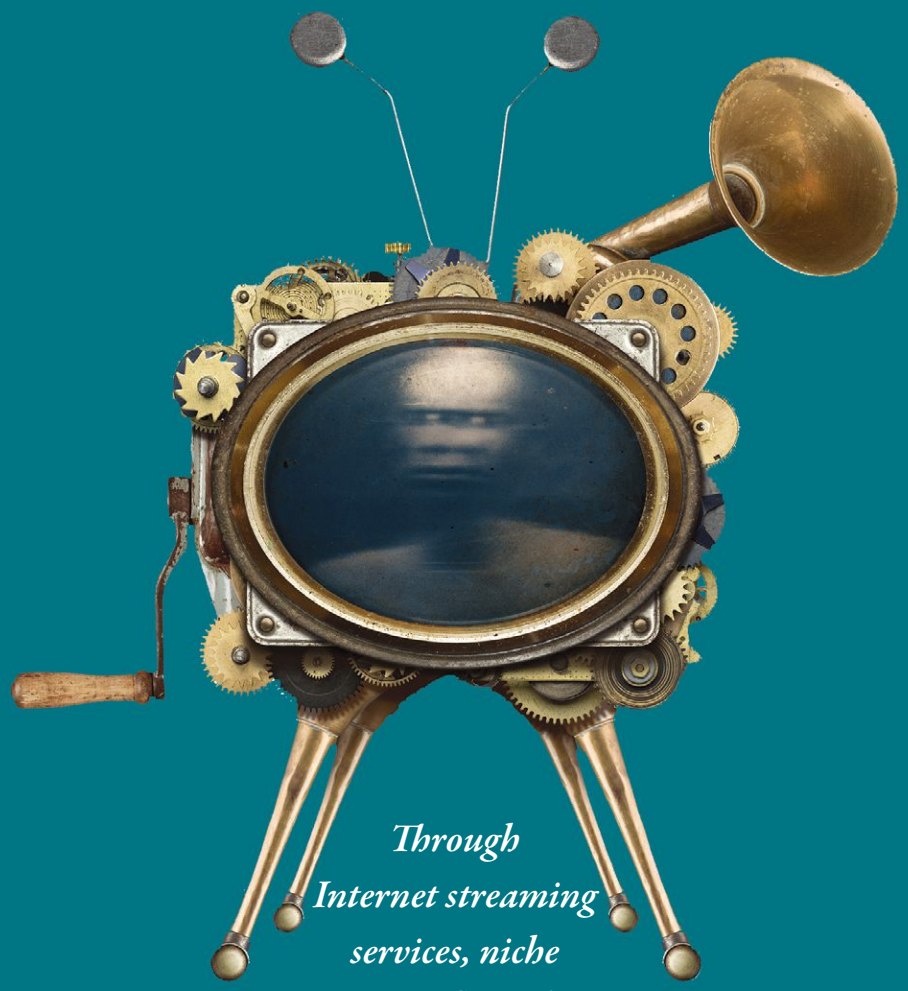
4. Locker Unification

Today, many early adopters have different lockers for different video services. The future locker will enable users to aggregate most of their lockers into one locker ecosystem that not only displays all their titles in one catalog, but also enables them to be rewarded for purchasing EST content regardless of source.

At Saffron Digital, streaming and download locker services come as standard. We have also been pioneering various promotional mechanics and we know that targeted campaigns like product bundling (e.g. 3 titles for $20) can drive conversions up by as much as 50 percent. That's why we have invested in a global CRM platform that extends our range of services to drive ROI for both consumer and retailer. Once you harness these benefits for both retailer and consumer it enables a service provider to build a future locker framework, which we consider a win-win scenario. ■

Since joining Saffron Digital in 2011, Jason Keane has grown into a serious global OTT service provider on the back of new product launches for digital retailers including BT in the UK, Carrefour in France, Tribeca Shortlist in the U.S and KDDI in Japan. Keane spearheaded the launch of Saffron's next generation online video platform, complete with Ultraviolet (UV) integration and CRM tools. He previously worked with Universal Networks Interactive, Yahoo! and MSN.

Television's Third Act—Technology Reshapes Content



Through Internet streaming services, niche content can flourish in an ever-fragmented market

By Steven Herrera, Consultant, Zaszou

Abstract: Almost any episode from any television series ever made can now be viewed on-demand from a wide variety of video streaming services. The movement toward over-the-top (OTT) viewing has accelerated as consumers enjoy a more customizable viewing experience and freedom from cable contracts. Recognizing the trends, content providers have embraced Internet TV as a new market for revenue generation outside of the cable bundle. Subscribing to a collection of streaming services may not result in cost savings, but the rapid transformation of technology has resulted in greater television choices for consumers, and increasingly compelling content.

Since it was first introduced, no other entertainment technology has been so reviled, yet so revered, as television. Though sometimes derisively described as an "idiot box" and "boob tube," television has also offered programs of intellectual depth and substance. Since its modest beginnings, it has continually challenged the film industry through its ability to reach large and diverse audiences, and most importantly, its ability to generate revenue. In recent decades, broadcast television itself has faced numerous challenges due to advancements in technology, as well as content targeted to smaller, more niche audiences.

While subscriptions to multiple services may not save the consumer any money, they do provide freedom from a long-term commitment, which may be very appealing to people who have never had cable or satellite service.

Cable and satellite fueled content innovation

Whereas broadcast television often featured a slew of sitcoms and drama appealing to the widest possible audience, multiple system operators (i.e. cable and satellite) introduced the concept of channels differentiated by quality.

Perhaps because of competition from cable, there was a brief period of broadcast excellence during the 1980s that shaped the future of television drama. Steven Bochco created *Hill Street Blues,* a gritty, groundbreaking police drama that paved the way for many procedurals that followed.

In the 1980s, satellite television was a C-Band system with the big, ugly 10-foot dish antenna dominating the back yard. It was mostly a niche product for consumers in rural areas without access to cable. By the mid-1990s, satellite TV had been revolutionized by the introduction of Ku-Band receivers with much more compact 18-inch dish antennas. The subscriber fees created a new revenue stream for HBO, which debuted *Sex and the City* in 1998 and then *The Sopranos* in 1999. These successes proved that original series could create widespread buzz—and increase subscribers.

Streaming services are a new market for more niche content

The next phase of technological innovation was caused by the Internet, which enabled the delivery of content through "over-the-top" (OTT) streaming services, without the involvement of a multiple system operator in the middle. Consumers could now stream programs to their televisions, computers, or mobile devices.

Shows on Internet TV are allowed to be different because they are not bound by the network constraints of time and Standards and Practices. Some examples of series that have experienced an afterlife online include *Arrested Development,* which ran on Fox from 2003 to 2006 before making its 2013 comeback on Netflix, and *The Mindy Project* which was canceled by Fox in May 2015 before. Hulu picked up the Mindy Kaling comedy for a 26-episode new season.

Streaming services offer a variety of bundles

There are a wide range of streaming service bundles, appealing to different consumer tastes and budgets. Some streaming services offer "skinny" bundles of live channels on a subscription basis, just like linear TV, but without the cable or satellite contract. For instance, DISH Network's Sling TV live streams 20 cable channels for $20 per month.

Premium networks respond with streaming channels

Since last year, we have seen more of the premium TV content providers introduce their own "a la carte" streaming channels. These OTT services provide access to current season episodes as they air, as well as the network's entire library of hit shows. There could even be exclusive content not found on the linear TV counterpart.

CBS—the only broadcast television network that chose not to partner with Hulu—created its "CBS All Access" app, offering subscriptions for $6 per month, for example. The new *Star Trek* series premieres on the broadcast network, but subsequent episodes will be produced exclusively for the digital app. HBO debuted "HBO Now" for $15 per month, which is about the same incremental price that cable subscribers pay.

With this model, consumers can subscribe to just those channels they want, however, the cost of multiple services can quickly add up to the price of a cable bundle.

Basic cable networks step up the original content

As the shift to streaming services continues, the basic cable networks are increasingly developing their own original content in the hopes of growing their audiences and becoming indispensable. Networks need high-profile shows that viewers will tune in for every week, which will give them leverage in fee negotiations with cable operators and other distributors of content.

Broadcasters employ new strategies

Broadcasters, meanwhile, have reinvented their programming strategies in numerous ways:

- Online streaming, DVRs, and digital downloads have made repeats obsolete. So now, broadcasters run new shows in the summer until the returning shows start up again in the fall.
- TV studios used to make a lot of money through DVD sales and selling series into syndication. However, the real profit now comes from streaming video rights and international sales. Since a network has to own a series to make money on its afterlife, the networks are stacking their schedules with series produced by their in-house production companies.
- Networks are green-lighting more "big idea" shows such as *Under the Dome* and *Extant.* These high-concept science fiction series carry high risk, but the networks are willing to take that risk because competition from other forms of entertainment is so fierce.

Cable companies consolidate

As consumers migrate to online television viewing, cable providers are quickly losing subscribers. This is already driving industry consolidation, such as the $10.4 billion merger between Charter and Bright House Networks. Cable providers will be forced to respond with their own nationwide live streaming packages, or their rapid decline will continue.

Continued on page 91

Steven Herrera is a consultant with Zaszou, LLC. A former systems engineer for Raytheon, he has also held market research positions at Spotlight Pictures and Anchor Bay Entertainment. He has done graduate work in the area of entertainment business.

How New Distribution Models Are Transforming the M&E Industry

Managing the digital transformation requires a modern, secure content management platform

By Jeetu Patel, SVP of Platform and Chief Strategy Officer, Box

Abstract: As the M&E industry continues to embrace its digital transformation, new distribution models are emerging that fundamentally shift the way that organizations create, collaborate and deliver the most valuable content to their ecosystems. With technology and security at the center of this evolution, there lies limitless opportunity for the M&E industry to reimagine the creative process end-to-end and unlock new supply chains and avenues for customers to experience entertainment.

As M&E undergoes digital transformation, the opportunity is greater than ever before to deliver customized content and experiences to audiences everywhere on every device. The rise of digital entertainment is transforming how M&E companies do business today. It's not just that people are watching content on their mobile devices, but everything about how they consume content is changing. From 30-second silent videos on Facebook to binge-watching behaviors due to new streaming options, consumption patterns are radically changing around entertainment.

But with this opportunity comes the risk of security breaches that can cost millions in lost revenue and priceless brand reputation loss. Managing the rapid pace of digital transformation while keeping content secure requires a modern content management platform.

With the proliferation of new content delivery platforms, the industry needs

Developing new workflows, systems, processes and policies across both traditional and digital platforms, as well as managing new organizational infrastructure, is necessary to keep pace with the speed of technological innovation.

to start thinking about how it can optimize for the fact that three billion people are on the Internet. A media company's customers are no longer just people who go into theaters or listen to the radio or buy CDs. Its customer base is actually every single person in the world, and they can be reached instantly. What does this mean for current business models and investment into technology and processes that will protect M&E companies' most valuable asset, their content?

As digital media usage grows, so does need for security

According to PQ Media Global, consumer digital media usage worldwide grew by 12 percent in 2014, driven by double-digit gains in time spent online, mobile and other digital media channels. These fast moving new delivery platforms have challenged M&E companies to reevaluate and improve the way content is created, managed and distributed. We used to think that security was something that only financial services firms, insurance companies and healthcare institutions were focused on. However, protecting the data is of utmost importance to M&E companies given that content is the core intellectual property and monetization vector.

Security aside, navigating the globalized world of M&E, with an ecosystem of vendors and applications, and ensuring that the right people have the right access to the right content is another challenge unto itself. Teams struggle to find a single source of truth when it comes to content. Employees want to create and collaborate on the go, distribute data globally, and review content on their personal mobile devices, while IT wants a greater sense of control over fragmented solutions. There is a need for a solution that breaks down barriers between departments, empowers teams to share content securely no matter where they are in the world and enables businesses to get products to market faster.

Developing new workflows, systems, processes and policies across both traditional and digital platforms as well as managing new organizational infrastructure is necessary to keep pace with the speed of technological innovation. Securing assets from inception to delivery, while keeping them secure is more important than ever.

Companies now require a robust platform to help M&E professionals in the production process, the management of digital assets, and the handling of media releases to transform the way organizations leverage and adopt IT solutions for the digital age. Cloud technology can power these shifts toward digital entertainment.

Cloud technology supports productivity gains

In almost every industry where this type of profound modernization has taken place, massive productivity gains have emerged. More products are released, projects are completed far faster, relationships with customers tighten, new business models emerge, and additional profits are generated.

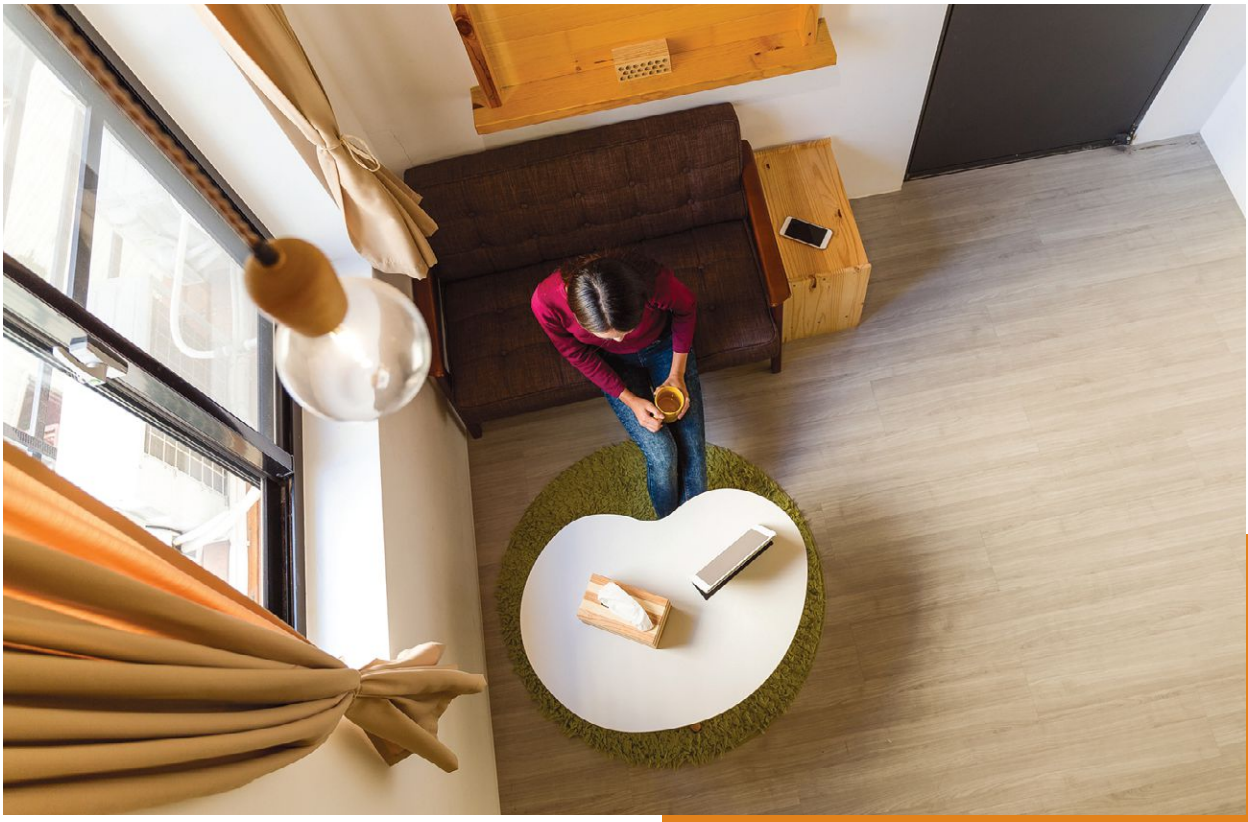
In financial services, where customers demand online experiences and companies must stay within strict regulations, companies have managed digital transformation through leveraging a secure cloud platform to manage and store sensitive financial information. In healthcare and life sciences, organizations are developing cloud-centric applications to manage access of sensitive clinical information for clinical investigators via highly secure portals and to provide secure sharing of medical documents for patient referrals, allowing treating physicians to gain access to a complete view of the patient's medical record history. In the legal industry, firms are leveraging digital content management capabilities to build end-user mobile applications that allow customers to access, edit and submit legal documents.

As the media and entertainment industry continues to embrace its digital transformation, new distribution models are emerging that fundamentally shift the way that organizations create, collaborate and deliver its most valuable content to their ecosystem. Forward-thinking leaders in film studios and television networks are already embracing these opportunities and are building on cloud platforms to distribute film and TV content to affiliates, theaters and customers across the globe, while music labels are building digital libraries to distribute music to radio stations and release new albums to the world.

And while the first step of digital transformation is using the cloud to deliver content, the next step is leveraging these new platforms to engage more deeply with audiences. It's not enough just to release and distribute content, these film studios, television networks and music labels need to keep the story going and market their products and brands through continued engagement, building customized applications to connect with their audiences through new digital experiences.

With technology and security at the center of this evolution, there lies limitless opportunity for the media and entertainment industry to reimagine the creative process end-to-end and unlock new supply chains and avenues for customers to experience entertainment. ■

Jeetu Patel drives the strategy for Box's platform business and developer relations, and oversees corporate strategy and development. Patel has more than 20 years of experience in enterprise information technology and before joining Box he was General Manager and Chief Executive of EMC's Syncplicity business unit. He previously held leadership roles in EMC's Information Intelligence Group and was president of Doculabs.

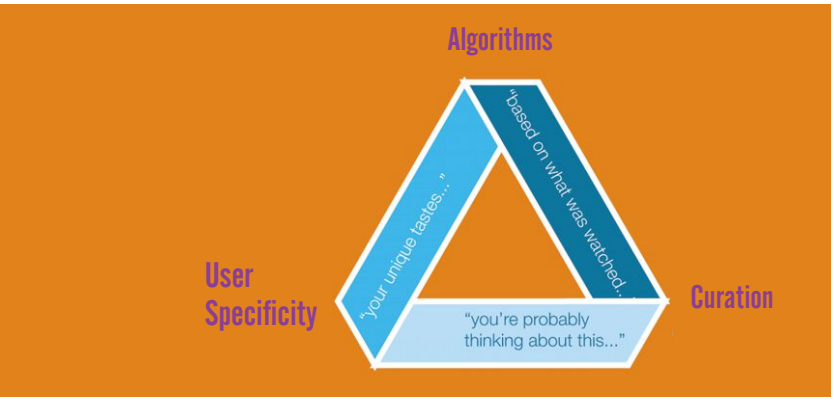


Essential Ingredients for Finding "Something Good to Watch"

The best TV recommendations would have these three things

By Richard Hayami Z'Graggen, VP-Head of Experience Design, LVL Studio

Abstract: Providing viewers with great recommendations remains a challenge for pay-TV operators. Faced with 500-plus channels and increasing over-the-top (OTT) choices, it's difficult for viewers to quickly find "something good" to watch. This article proposes three essential ingredients to improve the situation: recommendation engine algorithms, user profile management to identify the viewer, and curation to respond to the collective state of mind.



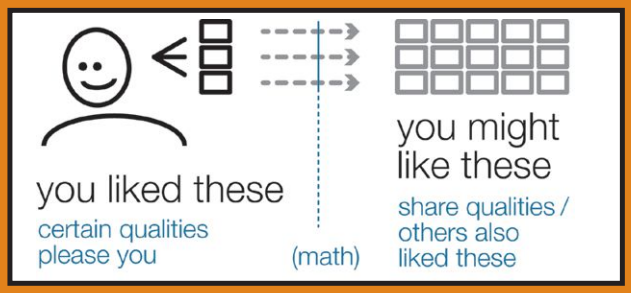
In our world of 500-plus channels and millions more video web sites, it's hard to get noticed. And for our audiences, it takes a lot of effort to find that one video that they didn't even know they wanted, but which is, in fact, exactly what they do want.

Recommendation engines are supposed to solve it all, but here's where it gets interesting. Add two more essential ingredients and you have a combo that just might solve all our discovery needs.

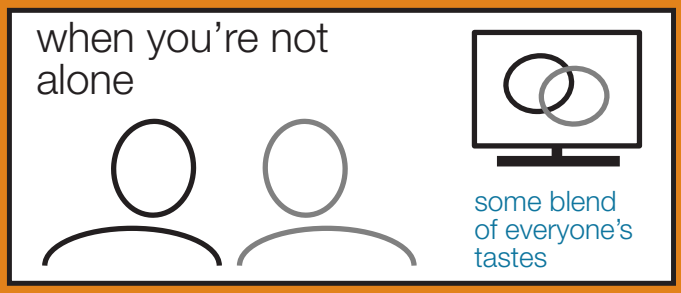
Algorithms get us halfway there

Let's start with the recommendation engine because it takes us most of the distance. By tracking what you tune in to, and with some fancy algorithms and data sets, it can propose very good suggestions on what you are apt to like. Netflix turned the 70/30 ratio of new releases to older cheaper content on its head through multi-million dollar algorithms. Digitalsmiths analyzes videos and builds robust data sets around each asset to make even the most obscure connec-

Algorithms



User Specificity



tions possible. And Jinni contextualizes behaviors around time and mood, understanding that we don't want the same genre at every hour of the day.

These and other recommendation engines are very good at proposing content based on past behavior... with some big data crunching to build relations between assets. But with a shared device like the family room TV, there is an essential flaw: your viewing habits might be mixed in with those of all members of the household. So in a family with young kids, you may tire of seeing all the Disney recommendations, especially at 10 p.m. after the little ones are tucked away. Your household did consume all those animated films, so it's not the fault of the recommendation engine. But still, "Where's my HBO?" you say.

User profiles: because it's all about you

Add the ability to specify who is watching and suddenly the suggestions become all about you. Netflix lets us create individual "users" but many legacy TV systems are lagging. Good systems would go further – allowing multiple viewers to signal their presence. And we can expect to see more fluid interfaces on set-top boxes that react to the presence of individual nearby mobile phones, adjusting automatically to the comings and goings in the shared space.

It's obvious of course: the more relevant the suggestions are to the people in front of the screen, the more useful they are. And the more useful, the more they will lead to transactions.

So user profiles are important but we're still not addressing a third factor that can elevate suggestions based on the past to predicting what you will want before you even realize it.

Curation: because of course that's what you were thinking

Every October 31st is a circus of costumes, candy and costume parties. In the week leading up to Halloween, operators would be negligent if they didn't load up their featured lists with classics like *It's the Great Pumpkin Charlie Brown, A Nightmare Before Christmas,* and the slew of horror movies everyone wants to watch. It's a great time, by the way, to dust off the older assets in the library because that's what audiences are looking for. The same goes for other events like Thanksgiving, The Superbowl, Valentine's Day, and yes, prom night. A search on this last topic found not only movies, but TV episodes too. Who knew this includes *That '70s Show, Vampire Diaries,* and even *My Name is Earl* with the uncomfortable theme of Earl organizing a prom in prison. I didn't know this episode, and we should assume the average user won't have the patience to spend time digging around for jewels like these. An hour spent by a curator/programmer can save millions of people from having to do the same. It's a powerful equation.

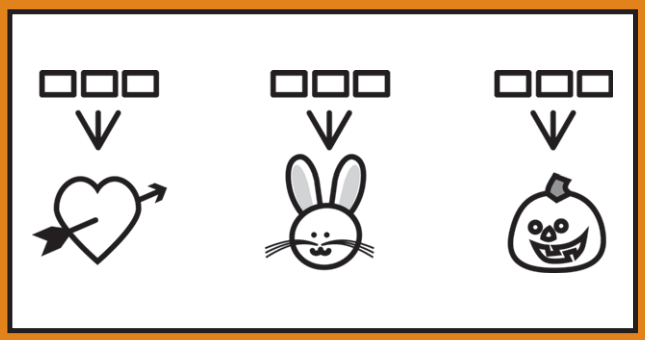
Curation is not just about all the regular calendar events. It can also respond to current affairs, such as war, economic collapse, and celebrity news. On comedian/actor Robin Williams' death, fans wanted to pay homage and watch their favorite movies like *Good Will Hunting* and *Dead Poet's Society.* Good content marketers package the collections to make it easier for their customers to find.

Can algorithms do this? The answer is yes, with enough data points and massaging and weighting. But the human touch can be quite effective, especially when it's an expert in content marketing tuned to cultural markers and the mood of the moment – the zeitgeist.

Three legs of a stool

Recommendation engines, user profile management, and curation are like three legs of a stool. Take any one away and the seat is not so grounded. But if you have great data-driven algorithms to make intelligent connections, along with user profiles to make it relevant to the individuals in front of the screen, and finally curation to capture the predominant trends of the moment, you will go a long way to maximizing the impact of your content suggestions. ■

Curation



Richard Hayami Z'Graggen works with service operators, broadcasters and producers to bring meaningful and entertaining products to people's homes and mobile devices. Before joining LVL in 2007 he led design teams in several educational, media, and software industries.

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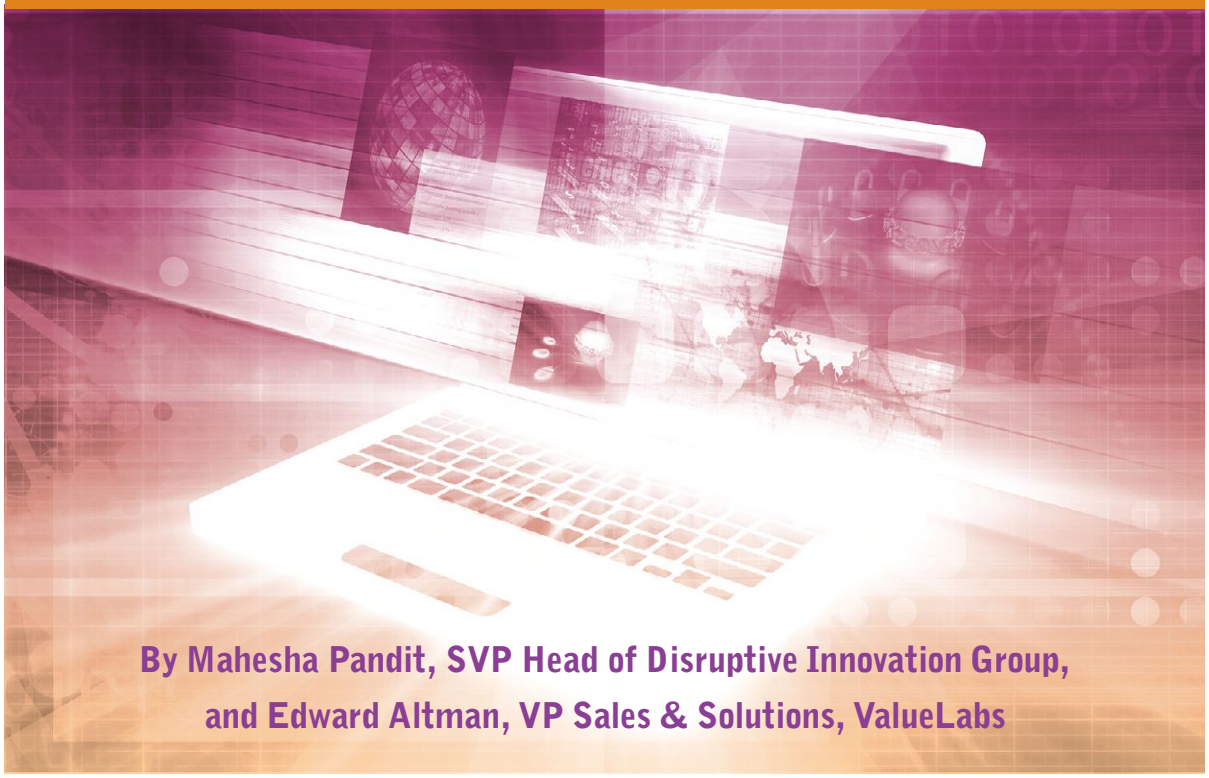
How to Build a "Digital Dreams" Platform

Such a platform would enable a compelling user experience with content as a natural outcome



By Mahesha Pandit, SVP Head of Disruptive Innovation Group, and Edward Altman, VP Sales & Solutions, ValueLabs

Abstract: A platform rooted in technology is visualized to consist of multiple service layers that could be implemented on a cloud. This digital dreams platform can be built in multiple steps, establishing workflows for content creation, distribution and delivery, and extended to cover routine and innovative services that offer best-of-breed facilities.

While the idea that "content is king" still resonates in the digital era, market research by leading firms such as Nielsen shows that consumers are also gravitating toward experience as a priority. As Hollywood adapts cloud for content creation workflows; social for igniting creative collaboration and consumption; and analytics for semantic modeling of user behavior, it is very much the marriage of the consumer experience with superb content that is driving the business of Hollywood today.

Current trends in Hollywood IT

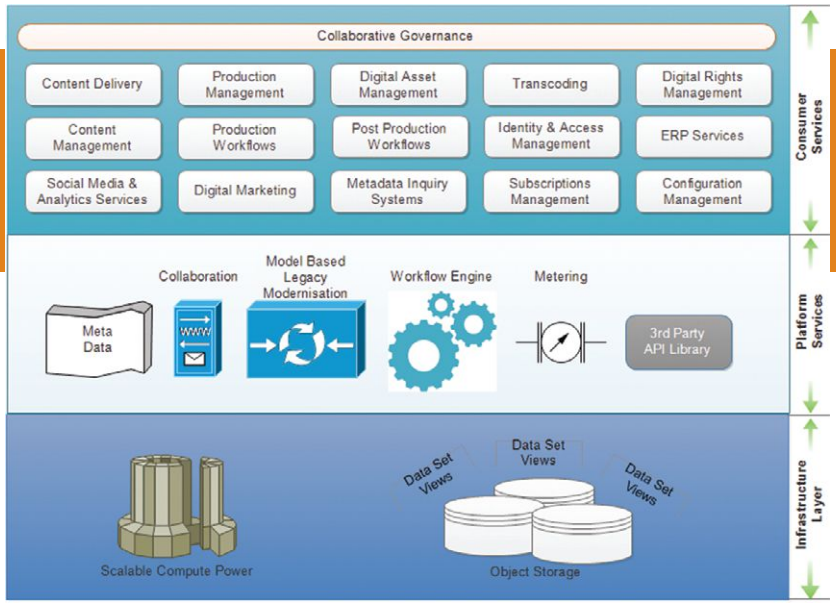
Hollywood is experimenting with several ideas to embrace disruptive technologies and liberate studio legacy businesses, systems, and associated business practices and processes. There is a call for platforms rooted in technology to unite the M&E industry to creatively collaborate and come together to fight privacy and protect IP as well.

A lot needs to be done to create a platform that meets all that Hollywood is dreaming of and desires. Nonetheless, a scalable platform needs to be established to support:

- global digital workflows;
- legacy technology and business processes entrapped in studios that need to be liberated and converted to technology stacks that makes sense to the business;
- the break down of silos built around legacy businesses to foster collaboration – which is possible only with compelling value propositions satisfying needs of diverse stakeholders.

All of these can be collectively called the digital dreams of Hollywood.

Three layers would map to IaaS, PaaS and SaaS layers of a private/public cloud.



The digital dreams platform

If an attempt is made to visualize the platform that meets Hollywood's dreams, it would look much like the one shown.

It would consist of three layers that would map to IaaS (Infrastructure as a Service), PaaS (Platform as a Service) and SaaS (Software as a Service) layers of a private/public cloud. Each layer consists of multiple, scalable software components that are configurable within reasonable limits.

At the base layer (infrastructure), an object storage exists to capture both structured and unstructured data. This data represents normal business data as well as digital multimedia creative data and metadata. While raw data is held as storage, views configured to match typical Hollywood data sets enable easier and more meaningful visualization of data.

The platform services layer enables several activities, some of which could be liberating. Collaboration tools enable real time collaboration amongst consumers. Workflows engine combined with a metadata block could help create custom workflows that are not served by the services layer. Third party application program interface (API) libraries help extend the platform for needs beyond initial visualization. Metering enables atomic level tracking, governance and charge-back mechanisms.

Perhaps the real differentiator is the model-based legacy modernization engine. This innovative piece of software helps visualization of legacy software in terms of models that are easier to understand. Using the model, an architect could add new functionality or remove or update legacy functionality. An updated model could then produce the modern state of the software, if so desired.

Typical Hollywood users need not go down to the platform or infrastructure layer. Most of the services that they need are present in the uppermost services (software) layer. Production workloads can be planned and managed; content creation workloads can be used to create, review, edit, approve, distribute or delete digital content. Identity and access management components ensure appropriate use of the platform and content while being piped through content delivery mechanisms.

Services such as content management and digital rights management could be used to start managing content at its origin and consumption.

The platform could be powered by ideas, concepts and features from C4 – Cinema Content Creation Cloud (Cloud Project sponsored by ETC@USC) – that enable content creation and identification using C4 IDs.

Collaborative governance could be rendered as a service to multiple entities within the M&E industry to share access, control, threat and penetration data. This could pave the way for an industrywide means to help protect assets.

Relevant enterprise resource planning (ERP) services could also be provided as part of the platform avoiding the need for an external ERP system. This would include master data, procurement, physical assets management, accounts payables, receivables and project management.

Platform driving consumer experience

The digital dreams platform would help create, distribute and enable a compelling user experience with content as a natural outcome. It would lower the barriers of entry and operating costs; allocate quality resources to an extended list of dreams and enable an even better fight against the on-going threat of piracy.

M&E ecosystem: The platform connects relevant stakeholders – content makers, consumers, customers, collaborators, as well as associated vendors, partners, technology developers, and the media at large.

Compelling user experience: Nearly everything that a Hollywood creative user needs would be available in the platform as a service, including access to digital assets, data, data sets, metadata and change history, while each are subject to access rights.

Lower entry barriers: As the platform would be powered by the cloud offering scalability on demand.

Extending dreams: The platform could be based on C4 – the extensible, open source cinema content creation cloud. It can also provide

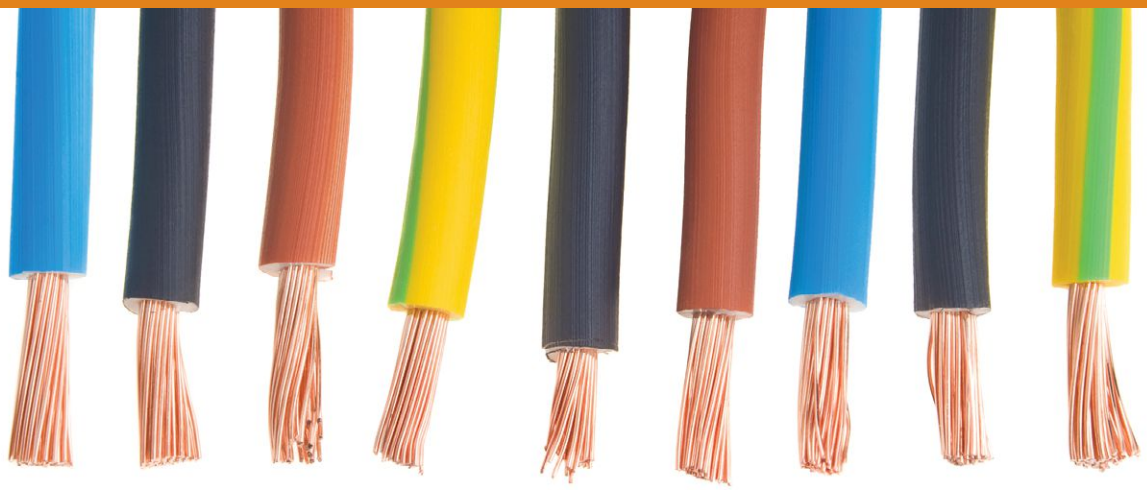
Continued on page 94

Mahesha Pandit is responsible for building innovative solutions and IP across industries including M&E. As an enterprise architect, Pandit has delivered complex enterprise solutions to leading global brands. He has held key positions with global consulting firms and has contributed to scalable computing, cloud and multi-core software programs of the Technology Strategy Board (UK). Edward Altman is responsible for business development and building solutions for the M&E industry. After serving as the CIO of MGM, Altman built from scratch and headed TCS' Global Media & Entertainment Practice prior to joining ValueLabs.

Wanted: Cable for the Web

Re-creating the cable ecosystem online offers clear benefits

By William Mobley, President & CEO, FreeCast



Abstract: Today's entertainment business is built for cable, and it's been made painfully clear that it can't change overnight, nor should it have to. The problem isn't the entire industry, it's confined to the last mile: how consumers pay for, receive, and enjoy the content available to them. Rather than sending everyone involved, including the networks and studios who are firing on all cylinders and creating high quality content that consumers love, back to the drawing board, the innovation must occur at the distribution level, giving us something us something that's just as easy for consumers and content creators alike to plug into, while addressing underlying causes of the pay-TV exodus.

A consumer complaint about cable (Comcast) is that it is too expensive, while Netflix is seen as affordable.

The media industry is facing a dilemma unlike anything it's ever seen before. The business model upon which cable TV is built is dying, under siege from Web-delivered alternatives. But paradoxically, that same business model is also the future of Web-video and the media industry itself.

How can it be both on the way out and on the way in? Especially when cord-cutting is so rampant that it seems that everyone, consumers and content producers alike, are trying to get away from dependence upon pay-TV?

There are many reasons, but to sum them all up, whatever replaces today's TV distribution model be familiar enough to both consumers and media industry leaders alike to facilitate widespread adoption.

Give'em what they want

Consumers are loving what they see on television. Even popular streaming services like Netflix and Hulu owe much of their popularity to content that originally came from cable and broadcast TV.

One question gets at the heart of the problem: Why do consumers love Netflix and hate cable?

The number one gripe with cable is that it's too expensive, while Netflix is affordable for most. It's not hard to see why the price of pay-TV gets so out of control when customers are forced to pay for hundreds of channels when they only care about a few.

Dynamic technology for a fast-paced industry

Rapidly changing market trends are reshaping the media and entertainment industry

Technology platforms are evolving, new business models are emerging, and the dramatic shift in consumer viewing and purchasing trends have created a dramatic change in the competitive landscape.

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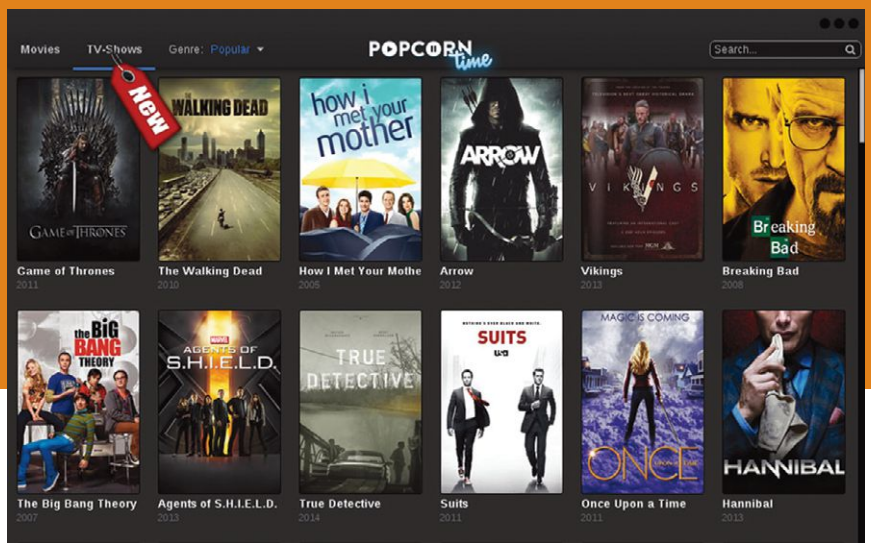


Free software like Popcorn Time enables consumers to help themselves to the content they want.

A second factor would almost certainly be device-driven. Consumers are watching more video on their tablets, smartphones, PCs, and other Web-connected devices. Yet even in 2016, the far more expensive cable subscriptions keep viewers tethered to a wall outlet, while requiring them to rent an outdated piece of equipment for the privilege.

At the end of the day, consumers want to be able to enjoy the content that they love on their terms: at a fair price, and on the device of their choosing. And while they've gained popularity, subscription VOD services like Netflix, or those being rolled out by individual TV networks are not the long term answer.

What will get consumers excited about pay-TV again is doing exactly what cable has done for decades, only doing it online: bringing together content from all of the different sources with a guide to make it all manageable.

It's all about the money

While consumers would embrace lower-priced offerings, the media companies live in fear of seeing their revenues dry up. Cord-cutting is such a threat precisely because so many networks depend upon monthly subscriber fees from millions of customers, many of whom may never spend a minute watching their channels.

But while networks are afraid of losing those revenues, by trying to protect them, they could be leaving even more money on the table.

We've seen this play out with the music industry. The fact of the matter is that if customers can't get the content they want on reasonable terms, they'll simply steal it. As cord-cutting becomes the norm, the holdouts will only end up encouraging consumers to do that before they return to pricey and inflexible pay-TV packages.

But as the music industry has experienced, there are many ways to monetize content, and the ideal scenario from the business perspective is to maximize all of them.

In the television business, there are three options for doing this: Pay-per-view, where a consumer pays to access a piece of content, a subscription model, and finally free content supported by advertising revenues.

The beauty of cable TV was that it brought all of these together for the consumer. Now web-based services are starting to do the same, literally replicating the cable TV footprint on the web.

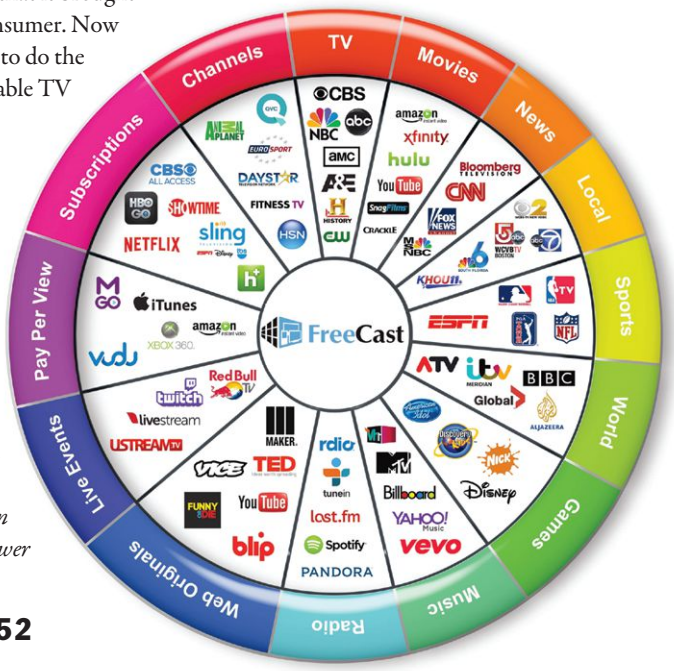
Pay-TV better than ever online

Currently Netflix dominates the discussion of online television, but the reality is that Netflix is a poor standard-bearer for the future of the television experience, because it's a closed library, and one that is increasingly alienating the traditional media companies rather than bringing them together into a single service.

No single library, not Netflix or Hulu or HBO Now, can truly offer consumers everything they want to watch. Only an agnostic media aggregator can do that. And one can do it even more easily than today's cable companies can.

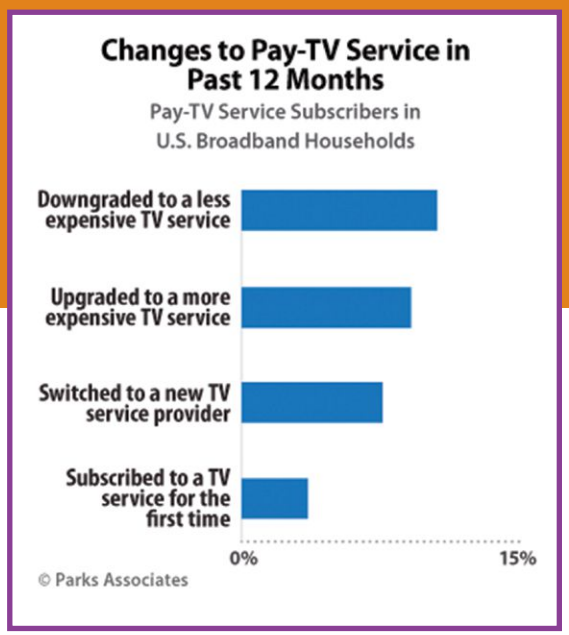
FreeCast's own network, which powers Rabbit TV Plus, 2 Buck TV, and Select TV, is particularly easy for content providers to take advantage of. Rather than the high-

Freecast offers multiple options to monetize content.



William "Bill" Mobley is a long-time tech entrepreneur. Known for pioneering the online video space, his previous company, MegaMedia Networks boasted over 800,000 video streams a day in the late 1990s, nearly a decade before YouTube or Netflix would do the same. Now at the helm of FreeCast, Bill is using his experience in streaming video to create a media aggregation platform that will power the television experiences of the future.

Churn is rampant in pay-TV.



At the end of the day, consumers want to be able to enjoy the content that they love on their terms: at a fair price, and on the device of their choosing.

stakes negotiations required to strike a deal with even a small cable TV provider, working with FreeCast is practically turn-key online monetization.

By simply providing a feed or VOD content, FreeCast offers multiple options to monetize content, but perhaps more significant is the opportunity to maximize them all. The simplest option is that to reach the company's more than 4 million subscribers, at no cost, while keeping 100 percent of their ad revenue. For premium content, they then have the option to charge for it on a pay-per-view or subscription basis.

While the current system features each of these options for content creators as well, they don't work in harmony. With ad-supported, subscription, and pay-per-view content all in one place, it's much easier for content providers to "upsell," luring viewers in with freely available content, and using that opportunity promote their premium options.

Connecting with consumers

Re-creating the cable ecosystem online offers a clear benefit to the industry, and also a benefit to the consumer, which in turn benefits the industry once again.

The easier it is for consumers to access and purchase content, the more money the industry will make. This direct pipeline from the content provider to the consumer is everything. It makes it possible for the consumer to get content at lower prices, while even more revenue remains with the content provider.

That direct connection with consumers also inherently remedies so many of biggest frustrations that consumers have with the incumbent business model.

Currently, a single cable or satellite company stands between consumers and the content that they love. So from high prices to poor customer service, it becomes the scapegoat for every shortcoming. But thanks to near-monopolies in their markets, consumers are left with little recourse.

All that changes when content providers are dealing directly with consumers. When the choice is no longer between simply putting up with problems and going without pay-TV at all, the bad rap associated with pay-TV will disappear.

Individual content providers are suddenly incentivized to provide a good user experience, customer service, and reasonable prices. That builds brand loyalty in a way that just doesn't happen with the current system.

By getting to know their consumers on the retail level, networks and studios will be able to tailor both content and ads to their audiences better than ever, while bringing more of the media industry's revenues out of the pockets of middlemen and back to the content creators.

A positive sum game

The benefits of moving the entire kit and caboodle of the cable ecosystem onto the web are already clear, and growing by the day. But the media industry has been slow to embrace the opportunity.

While much of that has to do with the seeming difficulty of making that transition, the biggest obstacle is almost surely the fear of harming the revenue streams on which they presently depend.

But despite consternation in the media industry over cord-cutting, the move online is in fact a positive sum affair that will ultimately result in a vibrant and profitable media industry where opportunities abound for the big titans of the media industry as well as the YouTube star building a following from their bedroom.

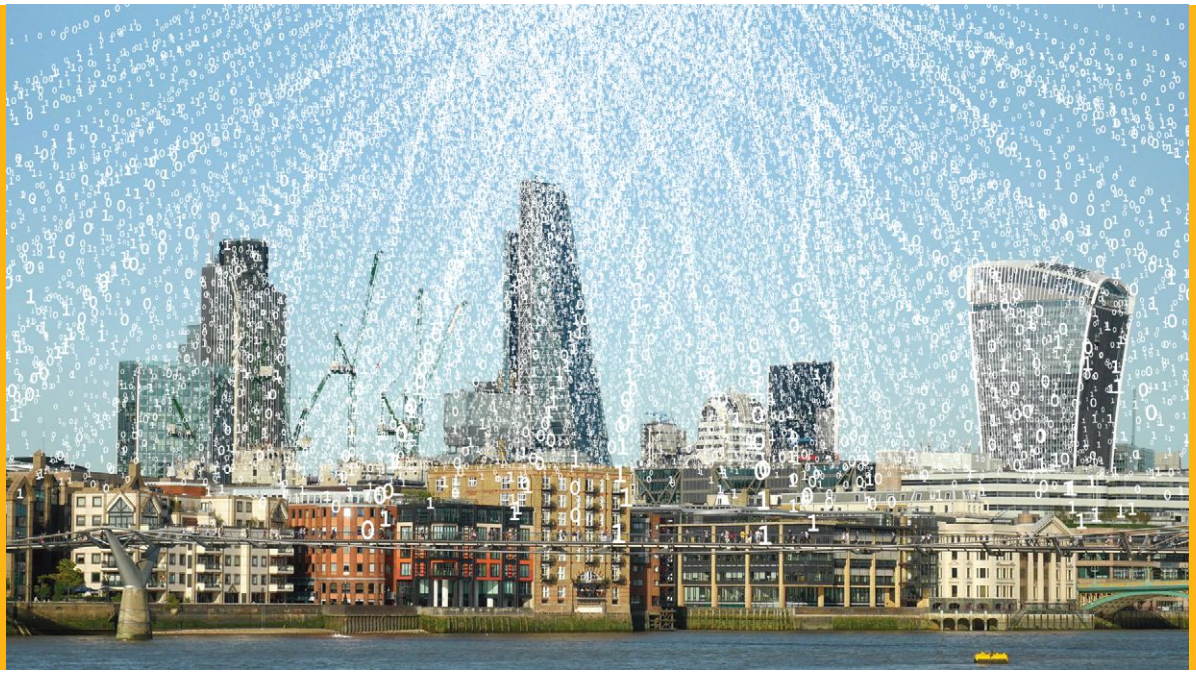
OTT revenues are rising rapidly, and consumers are signing up to multiple OTT services in droves. This rate of growth is nearly matched by the rate of decline in traditional pay-TV, as the consumer exodus from pay-TV continues, taking revenues with them.

This trend has showed no signs of abating. With OTT on the rise while cable & satellite decline, the online space is quite clearly the smarter place to be invested. Once the big players in the media industry take the plunge and stop trying to delay the demise of the already-stumbling cable TV gravy train, they're almost sure to discover a host of even more lucrative opportunities. ■

Building a Data-Based Team: Quick Wins and Avoidable Speed Bumps

How media companies can mitigate the business risks associated with big data

By Alex Akers, Kurt Stuve, and Jason Ott, Senior Consultants,
Cognizant Business Consulting



Abstract: The amount of data available to M&E companies is growing at an increasingly rapid pace. However, making sense of all that data to provide actionable insight is fraught with challenges. This article discusses how analytics teams and data scientists can embrace best practices to avoid common pitfalls, including validating and confirming initial findings; not overwhelming the high value/ touch point segment; protecting data; aligning vendors and starting small.

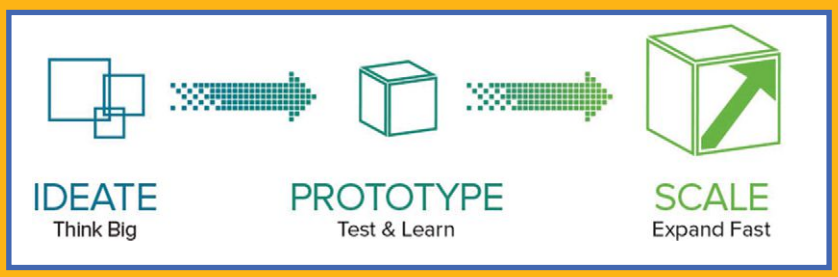
The avalanche of data generated by consumers annually does not seem to show any signs of slowing. An IDC Research Report from November 2015 predicts that the market for big data technology and services will increase at a compound annual growth rate (CAGR) of 23 percent through 2019, with the media industry ranking in the top three fastest growth industries at 25 percent CAGR. From the standpoint of M&E companies, this robust growth can create significant hurdles in sifting through the pool of big data to uncover the meaningful consumer insights that effectively drive business strategy.

In addition to this growing accumulation of data, there are more options for vendors of data analysis tools as well as touch points to reach consumers. In concert, these factors create growing complexity for M&E companies seeking to leverage the sea of available information. However, by observing a set of key best practices in data science and analytics, media companies can mitigate the risks associated with big data and stand to avoid some of the most common pitfalls. These best practices include:

1. *Guaranteeing accurate conclusions by validating and confirming initial findings*

As analytics tools become increasingly automated and sophisticated, the "distance" between what the raw data looks like and what the end-user sees grows as well. It is tempting to step back, let a vendor install its standard analytics package, and segue directly into reviewing outputs from the new tool. Many of our partners use a "data-driven" approach where they "let the data speak for itself." Indeed, removing user bias is a hallmark of a sound data strategy. Randomly distributed data, representative samples, and "clean" data are gold standards of academic statistical

Observe Best Practices to Create Standard Operating Procedures



research. However, they are incredibly rare in most business use cases. Given that, it is critical to ensure that bias is not baked in at the onset by understanding your organization's raw data and the nature of the audience evaluated.

For example, one of our clients was using data available from its customer-facing website to better understand how to market its entertainment products, analyzing that data to develop strategic recommendations to its marketing stakeholders. However, the company did not account for the bias inherent in the audience that regularly patronized this particular website, leading to recommendations accidentally tailored to only one customer segment. By helping the company understand its base audience, we were able to filter out the behavior endemic to the site audience from the behavior related to the products the company was looking to evaluate.

2. ***Retaining customer loyalty by not overwhelming the high value/ touch point segment***

In years past, all surefire marketing efforts and initiatives were led by simply identifying the company's most valuable customers. Today, knowing your customer is only the first step, a bare minimum requirement. To effectively recognize, reach, and retain customers now requires a complex customer data cocktail including knowing:

- Where your customers are – demographically and geographically;
- What channels they are most active in;
- When they are most engaged;
- What content resonates most with them;
- What products they're interested in.

Almost equally important is understanding the inverse of these questions, allowing companies to avoid unnecessary marketing spend. In other words, where aren't your core consumers?

Another key consideration is the notion of cadence ... how much communication is too much? This is a trickier situation. In 2015, despite much ridicule regarding the flood of FanDuel and DraftKings advertisements during the first few weeks of the NFL season, the daily fantasy sports sites drew in hundreds of thousands of new customers each week and posted many record-breaking weeks in terms of entry fees. While there still is quite a bit of speculation surrounding the future of fantasy sports sites, it would appear that, for now, the sites are comfortable with their advertising strategy, especially given the positive reviews of the products, as well as the significant demand for them. Once a user is acquired, special care should be taken when directly targeting them via email or in app/SMS messaging, as direct communications can quickly become tiresome for consumers. A robust communication preference center is essential for enabling your core customers to adjust the volume. The best bet is to have a consistent sense of how your customers react to your communications. A balanced measurement method of acquisition, churn, and engagement will lead to better understanding the story behind the data.

3. ***Protecting your data and ensuring that your house is secure***

Data security breaches have affected a number of very well regarded companies. In 2014, the very unfortunate hack at Sony Pictures reminded the industry that customer trust is hard to win, and easily lost. To start, find a partner with an established track record and strong industry reputation. However, often a good partner may not be enough, as many of the most common issues in recent years have had less to do with technology or security gaps and more to do with failures regarding security training or institutionalized protocols. In some cases a "one-size-fits-all" security approach works. In others, complex security policies and security architectures may make

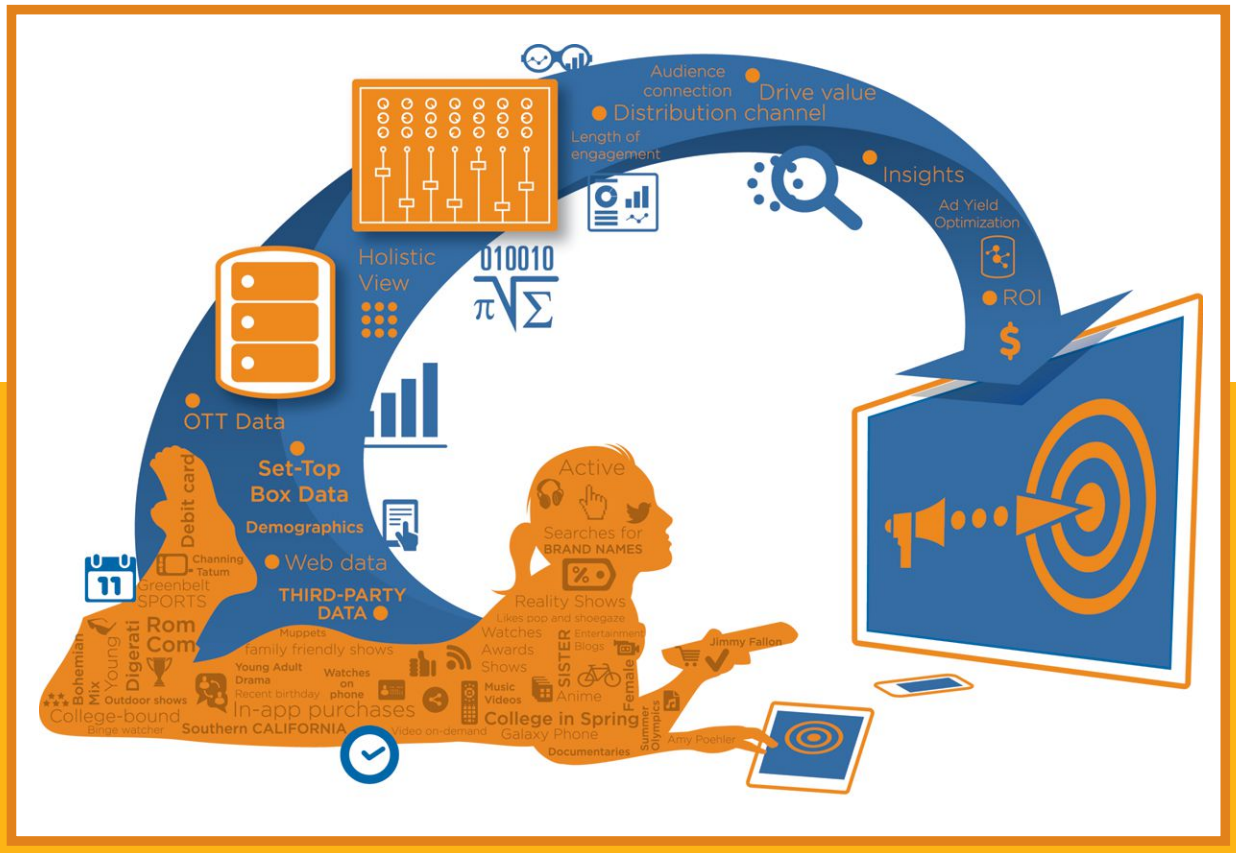
Continued on page 91

Alex Akers *over the past five years has led engagements for many of the major motion picture studios, often working between business and technology teams to deliver transformative digital initiatives. A self-proclaimed wearer of many hats, his primary areas of focus include digital media and technology, marketing analytics, process analysis, and customer journey.*

Kurt Stuve *is focused on technology strategy and digital product development for film studios, television networks, and media broadcasters. He previously worked in technical operations for video post-production, specializing in evolving technologies and digital workflows. He is an Associate Member of the Television Academy in the Interactive Media Peer Group.*

Jason Ott *has 12 years of experience working on both the creative and corporate sides of the entertainment divide, and in that time has worked with four of the major studios. His main areas of focus include business innovation, business intelligence, analytics, and growth strategy.*

Make More of Measurement: Ad Optimization for Increased Revenue



By layering traditional and new data sources, content distributors can enable insights around transactions and audience interaction

By Colleen Quinn, Marketing Director, Teradata

Abstract: With new insights, broadcasters and cable networks can better understand what each member of an audience is watching across all channels. Plus, with improved integration of new data sources—and acceptance of their value—broadcasters and cable networks can demand increased ad rates from their advertisers, while delivering a virtuous circle of improved ad performance.

Audience measurement has long been a labored and imprecise exercise in "getting to know you" by broadcasters and cable networks. On the flip side, advertisers have historically been forced to make big buying decisions based on coarse demographic and third-party data. But, in today's data-driven ecosystem, simply knowing which age group or gender best connects to a show or character isn't enough. Advertisers want control to reach the right audiences at the right time. Every ad unit has the power to drive massive brand value, and knowing your audience determines how valuable and for whom.

The changing face of audience measurement

Though many of today's content distribution channels can capture detailed consumption data, we still rely on the tried-and-true means of audience measurement. Third-party providers, like Nielsen, offer content owners sample data in audience size and length of engagement. Demographic information, such as age, gender, and income, helps to

determine basic audience traits. Now, we can layer this information with new data sources and insights that content owners themselves possess. With OTT, web, and set-top box data, it is now possible to see a much more nuanced view of these audiences, making the process of determining ad value more specific than ever.

From simply 'advertising' to ad optimization

While it seems that access to detailed consumer and audience data is no longer an issue, few broadcasters and content distributors are truly tapping into the value of new analytics and deeper measurement. The challenge is compounded by the difficulty in driving advertiser adoption of a new measurement currency—even if that promises vastly greater campaign ROI. So, how can we move from simply offering advertising inventory to building better advertising opportunities?

Broadcasters and networks are now not only expected to deliver content across multiple channels—they also need to offer the compelling insights that drive advertisers to invest in their programming. By building an advertising sales and measurement repository, content distributors can enable insights around transactions and interactions with their audience. A data-driven advertising management platform lays the foundation for further analytic insight with respect to advertising optimization. Key functions include:

■ *Audience segmentation and match*

The explosive growth of digital viewing—including mobile, over-the-top, and video-on-demand—means that audiences are more fragmented. Still, these alternative channel consumers can reveal loads of information about content preferences and user segments. This data can then be translated back to traditional advertising and broadcasting environments.

The old rules of measurement (based on one set of industry standard metrics, such as Nielsen ratings) are being challenged as new data from alternate channels reveal the actual habits and patterns of content consumers. Whether that data is derived from social channels, site registrations, purchase intent, email sign-ups, or other declared and derived forms of identification, digital data creates more analytic opportunities to meaningfully segment and match advertising to viewing preferences.

■ *Yield management*

Making compelling content is no secret for broadcasters and networks. The real question is whether they are pricing advertising inventory to generate the greatest revenue and return. Companies need to ensure they are able to manage ad yield to fully sell all inventory at the best possible price.

Being able to proactively manage ad availability—and balance that against historical sales transactions and performance—allows advertising sales organizations to easily tune the necessary knobs to increase or decrease ad rates in accordance with inventory demand. And, with new audience insights delivered through comprehensive measurement, ad sales teams have new muscle to demonstrate value to advertisers, potentially commanding higher ad rates than a traditional measurement data set might support.

An advertising management platform allows content distributors to integrate digital, traditional, and sales advertising activity from all of their various platforms (broadcast, mobile, Web, radio, cable network, and more). Once in place, companies can create precise audience segments and advertising matches, which create more value to ad sales teams—and the advertisers themselves—by delivering the right audience for the right message. An advertising management platform also enables accurate pricing models to balance ad value with inventory, so that the highest possible revenue is achieved.

Centralizing ad measurement to glean insights

Once a centralized audience measurement repository has been established, these combined insights can be put to work. Now, content distributors can begin to effectively optimize ad yield.

Take, for example, the case of a large U.S. cable network. Teamed with analytics leader Teradata, the network first integrated traditional and "new" forms of audience data from multiple sources, including Nielsen, Rentrak, and its own OTT and VOD data. It deployed this on a hybrid data platform that included Hadoop, cloud, and AWS. Then, it developed a series of dashboards and tools which allowed it to dynamically monitor and price broadcast ad inventory using the new audience measurement view.

This allowed the network to create a more value-oriented service for advertisers by providing information about the characteristics of certain audiences. It also moved from a monthly reporting structure, to one that reports daily, providing near-immediate feedback to advertisers about campaign and demographic performance.

The network's advertising management platform enabled access to all third-party data in one place, and allowed it to justify ad value through a comprehensive view of ad performance across various channels and platforms.

Evolved ad analytics are here

By creating a platform to centralize ad measurement and act on those insights to improve yield, both sellers and buyers in the advertising ecosystem can win.

Broadcasters and networks can now easily demonstrate near real-time value to their advertisers, while using that insight to boost ad revenues. Advertisers can more effectively reach their desired audience, further realizing ROI value from ad campaigns.

These insights and improvements aren't limited to cable and broadcast ad sales. Content distributors are now better prepared to sell ads across all channels by tapping into the same information and insights.

Evolved ad analytics move the advertising industry toward a more virtuous data circle, where content distributors can better determine ad value, while helping advertisers determine how much of their ad budget to spend and where. ■

Colleen Quinn spent 10 years producing television and later transitioned to technology, where she led innovation for content management and distribution services. Her current role extends beyond the M&E space into digital media & ecommerce, communications, and utilities industries. She is responsible for all go-to-market strategy and marketing for these industries.

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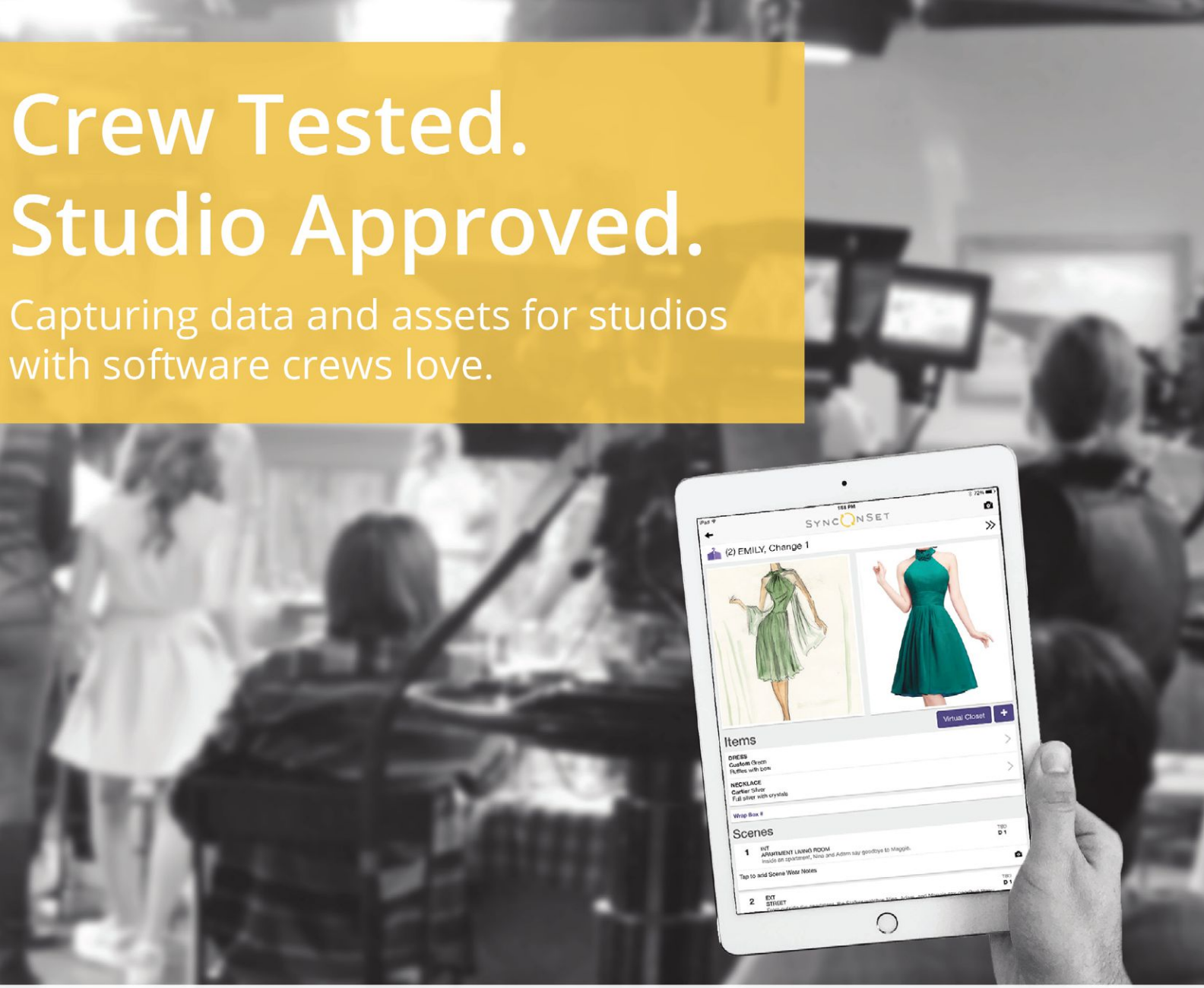

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Big Data Lets You Read Your Customer's Mind— Now What?

Companies currently leave an estimated 10% of revenue on the table

By Thomas Siegman, EVP Strategy, Innovation, & Client Relations, RSG Media Systems

Abstract: Used properly, data can help media companies understand the viewer's behavior better than the viewer herself. The challenge in creating these models, however, is that it's not enough to have data, or to bring it together into a large data lake. One needs to know what the data means, how to interrelate it, and how to discern actionable insights.

Data analytics is upending the media industry, helping companies buy, schedule, promote, and distribute content better, and to boost revenues from advertising, subscriptions, and sales. In 2012, the Obama campaign was significantly more effective at better targeting its viewers using a variety of innovative behavioral analytics techniques. By identifying the potential likely voters, they found that they could reach them through highly targeted, lower cost, late-night ads on ESPN and Nick at Nite, rather than traditional, more expensive prime-time networks spots.

In the four years since, the field has advanced much further. Examples abound:

- BSkyB doubles the likelihood of a viewer purchasing an advertised product by using credit-card data to identify target viewers and using the set-top box to insert specific ads.
- Netflix lulls viewers into binge watching by precisely analyzing the exact pause between episodes (if pause is too short or too long and viewers exit; time it just right and they watch for hours).
- MVPDs price VOD offerings dynamically, altering how much they charge territory by territory, customer by customer.
- Target uses purchase behavior to identify life instances, such as pregnancy, relocation, marriage, and divorce, when consumers' behaviors are most susceptible to change.

In the digital world, where viewers spend 60 percent of their online time on a mobile handset, personalization is a given. Sites boost their CPMs by tracking viewers' frequent shopper cards to profile users that respond to specific ads.

And yet, the overall industry lags. By our own estimates, companies conservatively leave 10 percent of earnings on the table. In a $2 trillion per year industry, that tallies up to $200 billion (more than twice the value

Advances in digital production have led to an explosion of data generating systems for just a single show or film – a situation that is multiplied by the hundreds for the largest entertainment companies.

of the entire Walt Disney Company) in lost revenues every year.

"For an industry that appears to be technologically sophisticated, their understanding of information technology is a bit startling" notes big data expert Jeff Needham, who regularly works with intelligence agencies on threat analytics and governance. He points out that the moment we digitized content, it became big data, ripe for analysis. "Content is still critical, but there no longer is a line between production, delivery, and sentiment analysis – it all happens on the same computing plant with many overlapping tools."

The good news is that this is all changing. Although RSG Media has been in the data business for 30-plus years (25 in the M&E space), we have suddenly seen a massive uptick in media companies' desire for data insights. Three major trends are fueling this new interest:

1. *Competition.* 2015 brought viewers over 400 scripted shows on television, almost twice as many as in 2009. Pundits refer to this as "peak television" because this volume seems unsustainable economically. Everyone involved in producing and selling content is looking for an edge to remain relevant, attract views, and the dollars that go with them.

2. *Investment Mindset.* Anyone who invests looks to earn an ROI. Now networks are taking this same approach. Rather than merely generating hits, savvy programmers view their entire content asset library as an investment portfolio. Having invested billions on content, they realize that earning an extra 2 percent in ads, VOD fees, or in other areas will contribute hundreds of millions of dollars to their bottom line.

3. *Technology.* New platforms allow us to interrelate huge amounts of seemingly unrelated data. In the past, we looked for everything to be in neatly structured tables. Now we can use the same techniques that the NSA uses to identify "threats actors" to identify "fans of actors" or other likely viewers, and how to persuade them.

A return to the art of selling

For most of human history, selling was a learned skill. Clerks spent long apprenticeships learning to size up a customer, identify their needs, their propensity to spend, and finally, to price goods for sale. Mass marketing is an invention of the 1900s; large department stores such as Macy's, Wanamaker's, and Boucicaut were able to thrive by undercutting rivals on price. Today's marketers and media companies understand that price is no longer the predominant factor.

Data analytics gives this insight. Used properly, data can help media companies understand the viewer's behavior better than the viewer herself. Rather than simply grouping viewers into demographic-based "look alike" models, we prefer "act alike": what she watches; which ads resonate; how she buys; where she gets her information; what she tells her friends (and which of her friends listen). For example, by combining viewership and revenue data from linear and digital platforms with data feeds from credit cards, Web and in-store purchases, social media, and more, some of the attributes that we can consider include:

- **Affluence**
- **Age/life stage**
- **Brand loyalty/early adopter**
- **Demand**
- **Family makeup**
- **Fashion**
- **Financial strategy**
- **Gender expression**
- **Home type**
- **Influencers/followers**
- **Lifestyle & habits**
- **Location**
- **Purchasing propensities**
- **Social communities**
- **Vulnerability (finance, health, other)**

Moreover, as the "Internet of Things" expands—the ability of everyday appliances such as our refrigerator, our car or our electric toothbrush to communicate on the Internet—we'll have further, more detailed data that allows us to get inside viewers' decision loop.

In a recent conversation with the CTO of one of the largest cable networks in the world, he described a future in which he will have up to 27 different feeds for the same network. That is, if two people tuned into the same TV network, they would see different things, perhaps even different shows; definitely different promos and commercials. All of this is based on data analytics and act-alike modeling.

The challenge in creating these models is that it's not enough to have data, or to bring it together into a large data lake. One needs to know what the data means, how to interrelate it, and how to discern actionable insights.

Data and the great unbundling

This data insight is critical because the competition is about to get even more intense.

Continued on page 96

A global expert in client relations, since 2000 Thomas Siegman has worked with RSG's clients to identify opportunities and devise strategies to take advantage of emerging technologies, manage their content rights, improve the customer experience, and leverage advanced mathematics to optimize ad revenues. Before joining RSG, Mr. Siegman was a domestic brand manager in Japan for one of Japan's largest consumer packaged goods companies.

Smart Content Makes an Impact on the Entire Supply Chain

Connecting data and content has never been more important

By Matt Turner, CTO Media & Entertainment, MarkLogic

Abstract: The data that is generated as M&E organizations initiate, produce, manage and distribute content has never been more complex or valuable. Linking that data together can have big impacts on aspects of that content creation supply chain from creating great experiences to speeding the creation of the content. However, significant barriers exist that are holding back organizations from effectively sharing and leveraging this valuable information. This paper will outline the challenges organizations face in bringing together this data and highlight organizations taking new approaches to bringing this information together and lay the groundwork for organizations of all kinds to realize the benefits of an integrated view of data across their entire content creation supply chain.

It's become a challenge to bring together and share data from multiple sources, in multiple different formats, each suited to its single purpose.

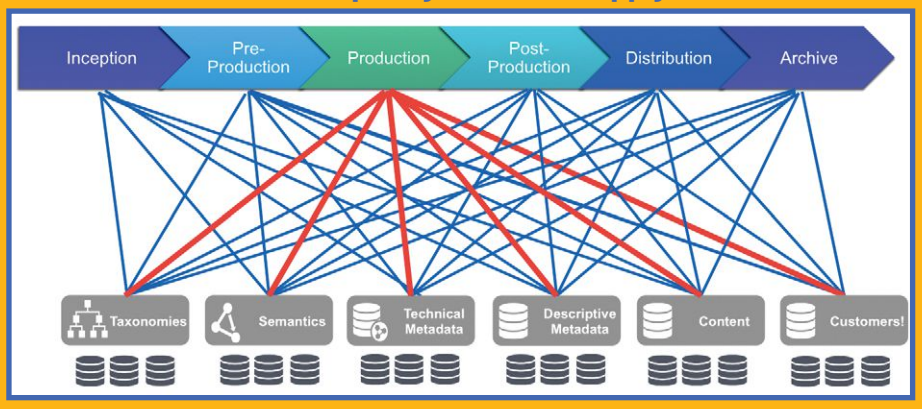
In a typical organization, data is generated in every step of the process to deliver great content to fans and users. These stages might include:

- ***Inception:*** research and development of content and the initialization and funding of projects.
- ***Pre-production*** –establishing the infrastructure to create the content.
- ***Production*** –the entire ecosystem of tools and processes to create the content.
- ***Post-production*** –Mastering and curation of the content.
- ***Distribution*** –delivery of the content to partners or directly to fans and users.
- ***Archive*** –enabling the accessibility of the assets for re-distribution, custom re-use and component re-use.

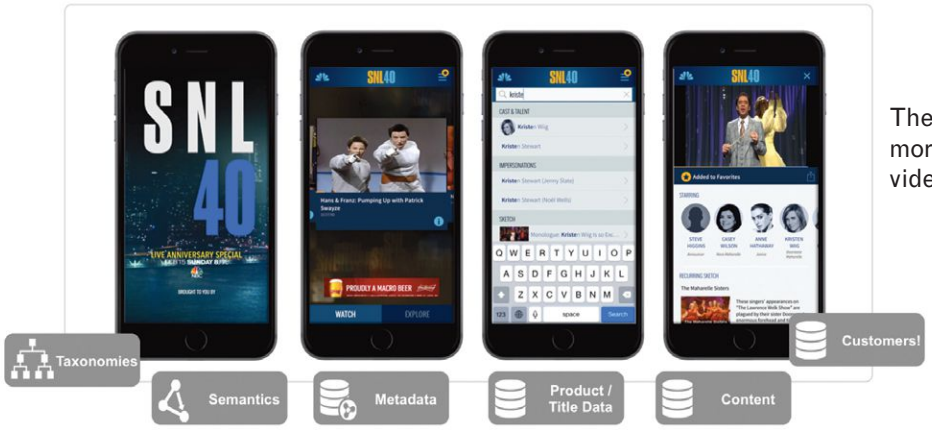
Across all of these stages of the supply chain, there is a common set of data that is created, managed and required by the systems in that stage. This data may include:

- ***Content*** –assets such as scripts, notes, costume data, production schedules and all other content related to the project.
- ***Metadata*** –including descriptive metadata with marketing and product data and technical metadata with asset information.
- ***Semantics*** –relationship data that links the metadata and content together with taxonomies and ontologies.
- ***Taxonomies and Ontologies*** –data

Data in Multiple Systems in Supply Chain



Smart Content and the *SNL* 40th Anniversary App



The app delivered more than 100 million videos to fans.

that describes how all the information links together. This can include genre, content domain models for types of content, and master data ontologies for titles, talent and products.

During every phase of the supply chain, systems and processes need access to all of this data. For example, during distribution, systems need to access not just the asset information but also production data. Information around items like wardrobe and props allow organizations to take advantage of new positioning and marketing opportunities. Access to taxonomies and ontologies help deliver unique customized fan experiences.

The other stages of content creation also access and share this same data. Title and foundational descriptive data created during inception are needed in every stage of production to avoid re-entering and duplicating that data. The foundational taxonomies and ontologies that shape the data around the content can inform how production assets are created and organized, creating efficiencies as they are readied for distribution.

As entertainment companies deliver directly to consumers, the availability of customer data also adds to this complexity. This data can inform the inception process, shape how the asset is produced and streamline and customize how it is delivered.

Making this more complex is that there are hundreds or even thousands of systems creating and managing data across all the stages of the supply chain. For example, advances in digital production have led to an explosion of data generating systems for just a single show or film – a situation that is multiplied by the hundreds for the largest entertainment companies.

The result is that data needed to be shared is not just in many different parts of the supply chain; it is in many different systems, all tailored to support their specific functions in the supply chain.

This complex picture means that effectively sharing data is a complex task beyond just joining data from several systems.

Traditional approaches

To bring complex data together, organizations may try to leverage traditional technology, including relational databases and extract, transform and load (ETL) processes that have many limitations.

These systems require you to model upfront the way the data will be used for a given activity. This determines in advance the way the data is stored and how it will be retrieved. For data in the supply chain this is a good fit for single purpose systems, but it can be a significant barrier to bringing data together for multiple purposes. This also means that data going into these systems have to be transformed to fit the schema, resulting in complex and costly ETL processes. Finally, to manage new data, the schemas and ETL processes need to be redesigned and re-executed.

Across all industries these approaches are becoming a costly and time consuming part of bringing data together. By some estimates up to 60 percent of the cost of data projects in spent with ETL and traditional data integration projects.

In the fast changing world of media, these limitations can pose real challenges to delivery new data to so users can make better choices and the business can take advantage of new market opportunities.

A new approach

To meet these challenges, M&E organizations have been using smart content, the mix of NoSQL data and semantic data.

To bring content data together, these organizations leverage NoSQL's schema flexibility, enabling data from multiple sources – even the hundreds or thousands across the supply chain - to be loaded and managed in a single system. This approach captures the complete picture of data in the source systems, accommodates new data and new sources, and lets that data be used for new purposes without having to rebuild the system.

To fully capture the context of data, media organizations are also using smart content to describe and link data using semantic structures. This allows organizations to use taxonomies and ontologies to model and

Matt Turner develops strategy and solutions for the media, publishing, entertainment 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 has worked closely with MarkLogic customers including Warner Bros., BBC, Pearson and LexisNexis. Before joining MarkLogic, Matt was at Sony Music and PC World developing innovative publishing and asset delivery applications.

manage complex relationships in data. This includes classifications, genres and relationships between titles and products. For forward-looking organizations, it also includes how characters, films and series fit together.

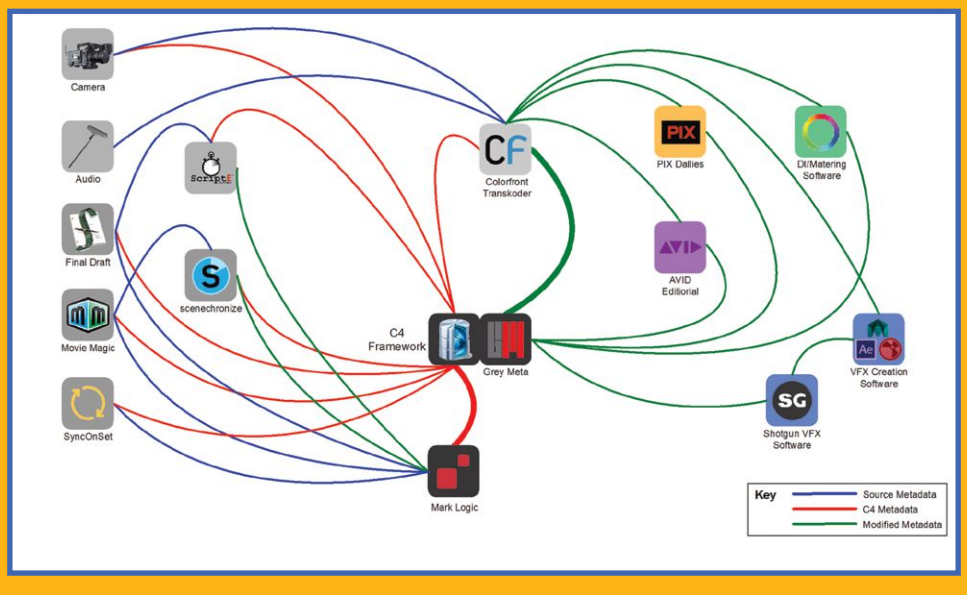
Smart content in action

In February of 2015, NBC celebrated the 40th anniversary of its iconic show *Saturday Night Live.* As part of the promotion, it created its new *SNL* app. This application used smart content to combine data from the many years of pre-production and production systems. NBC linked and enriched that data with semantic ontologies for delivery through the app. In combining the different types of data from the supply chain, the NBC team was able to fully leverage information and create a unique experience for fans of the show. The app was highly successful, holding the number one position in the app store for a couple of weeks and delivering over 100 million videos to fans.

Taking these concepts further in another industry, the information provider Mitchell1 has used these principles to connect data from the automotive repair supply chain, gain new insights and create efficiencies for their customers, the garage mechanics. Mitchell1 is part of the Snap-On group and delivers systems that manage every part of the automotive repair cycle including diagnostics, estimating, parts ordering, repair procedure, billing and input from expert mechanics. Using smart content, it was able to combine this data and now can leverage data from parts ordering and billing to create better diagnostic tools based on previous repair experience.

An example of what is possible in the entertainment space is The Suitcase Project from The Entertainment Technology Center at the University of Southern California (ETC@USC). This project, led by Erik Weaver, the Senior Program Manager of "Project Cloud", looks at many critical issues in movie production including using these new approaches to bring together data from across the digital supply chain and ensure data created during production doesn't need to be re-created downstream. This includes script, camera and production data along with post production and mastering information.

Metadata WorkFlow: ETC's The Suitcase Project



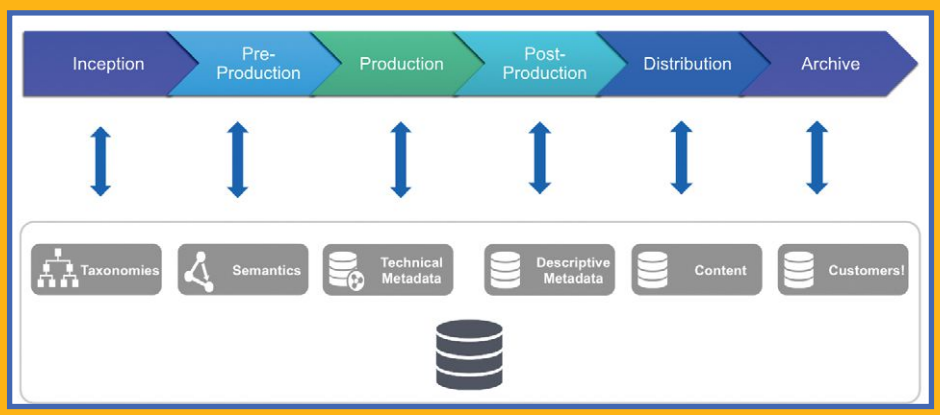
The project looks at issues in movie production.

The smart content solution

These projects all demonstrate the potential for smart content to handle the diversity and complexity of the M&E supply chain.

Using these new approaches, M&E organizations can manage and connect data from across the supply chain with a single system. Such a system uses the principles of smart content to store and manage data true to the source systems in the chain, while linking and delivering data to other systems in the context needed for each stage in the supply chain.

Smart Content Across the Supply Chain



M&E organizations can manage and connect data across the supply chain.

Conclusion

Connecting all the data and content across the digital supply chain has never been more important to M&E organizations. Data from pre-production and production can provide critical capabilities in the new world of custom and tailored delivery. Usage and delivery information can impact the re-use of assets during production. The archive process can efficiently provide access to assets with this complete picture of the data.

With smart content, M&E organizations are linking this data together to create unique distribution experiences, connect data in the production cycle and are showing, today, the impact of using this critical data across the entire supply chain. ■

Will All Media Be Free by 2025?

The M&E industry is at a critical point as media brands catch up to consumer expectations for convenience and grapple with data privacy concerns

By Greg Schoenbaum, Global VP & GM Media & Entertainment Industry, Xerox Business Services

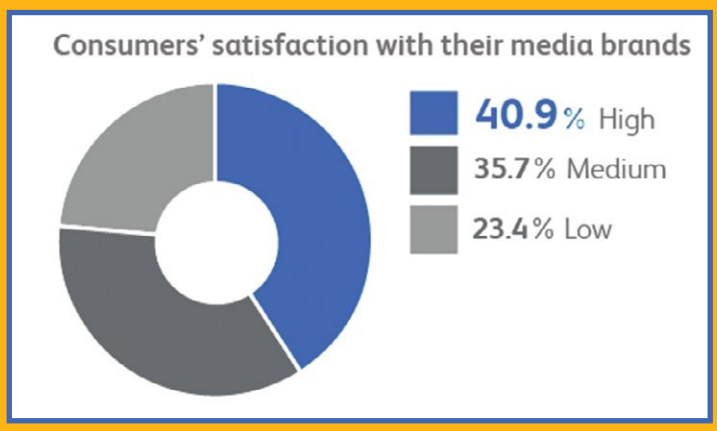
$00.00

Abstract: Our survey finds the industry at a critical point as media brands catch up to consumer expectations and grapple with data privacy concerns. Consumers surveyed were asked to consider everything from communication preferences to satisfaction, personal data privacy to personalization, and, of course, what they expect from the future.

The media we consume gives us the vocabulary with which we translate the everyday. It is how we share modern folklore, from big stories of international events to more personal odes of emotion. Media comes with us everywhere. It helps us connect – and disconnect.

With smartphones and tablet devices becoming our constant companions, consumption of media services is exploding. Whether online, TV, radio, or social media, these services are becoming central to our everyday lives.

A recent three-part survey from Xerox titled *The State of Customer Service 2015* explores consumers' relationships and experiences with the brands behind the technology, communications, and media in their lives. Consumers across the U.S. and Europe let us into their lounges, bedrooms, commutes, and gym sessions. They told us about their sources of news, sports, social media, music, and TV and film. In total, 216 separate brands were named. In 2014, the top four brands alone represented collective revenue of $105 billion.



Channel preference and reality

Every day we are bombarded by communications and messages. And we all have different preferences for the way we would like to be contacted. The evolving customer omni-channel landscape shapes when, where, and how consumers prefer to get in touch. It's time to contact each one on their terms.

Today's 24/7 consumer expects support when it's convenient, even if it's in the middle of the night. But many media brands aren't responding. Therein lies the chasm between consumer expectations and the reality of how customer service is being delivered.

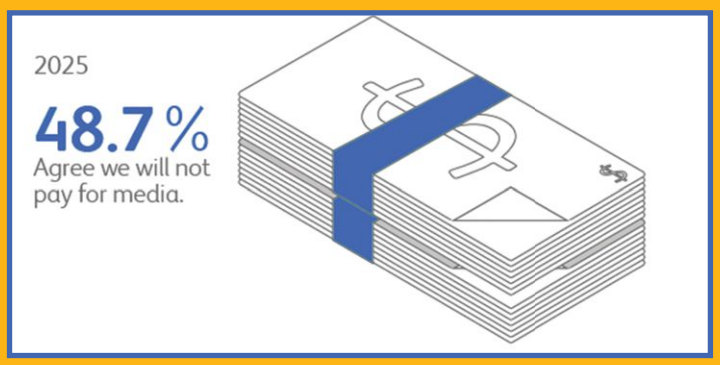
Consumers are evenly split over their preference for digital or traditional communication channels. However, there are strong variations depending on country, age, and type of communication. Our survey found that one in four consumers overall prefer the call center when contacting brands, making it the most preferred channel. But new media users will turn to website self-help (20 percent) and email (18 percent) before contacting the call center (16 percent).

The survey's findings show that consumers are demanding customer service via the channel of their choice, from brands that can show they understand them. The consumer may just have to pay more for it.

Satisfaction and loyalty

An accepted truth is that high customer satisfaction is the strongest indication of customer loyalty, as well as their intent to repurchase or leave. However, it is often accompanied by lesser truths: A customer will only ever get in touch if they are dissatisfied. The key to customer satisfaction used to be minimal brand interactions – but not anymore.

The willingness to pay for increased functionality is consistently over 70 percent across all age groups.



In the media world, this prevents unnecessary contact, to seemingly effortlessly nurture customer satisfaction and protect future loyalty. Consumers are increasingly using their experiences in varying industries to rate the performance of media brands, and vice versa. In this newly demanding world, some media providers have found a way to impress.

When compared to highly satisfied customers in technology (47.5 percent) and telecommunications (33.8 percent), consumers' satisfaction with media brands falls somewhere in the middle at 40.9 percent. Yet media brands should not rest on their laurels. An increasingly large segment (35.9 percent) also reported mixed levels of satisfaction.

U.S. consumers are most satisfied with their media providers (55 percent), while the French are most dissatisfied, with just over one in four reporting low levels of satisfaction. New media consumers are generally more enthusiastic about recommending media services, with a Net Promoter Score (NPS) of +28.5 compared to traditional media's +14.8. The most loyal new media customers are those who pay a subscription, with only 6 percent likely to switch over the next 12 months.

Media brands' highly satisfied customer base is proof that prevention is the best strategy. The fewer the interactions a consumer has with a brand, the more satisfied and loyal the customer base is. This follows the logic that if your customers are happy, you don't hear from them.

Privacy and personalization

With the advent of smart automation and artificial intelligence, personalization is more scalable and deliverable than ever before. But in order to deliver the best relationship to a large customer base, you first need to make personal data work for you. There's just one roadblock: your customers' trust in your respect of their privacy.

As privacy and personalization emerge as a trade-off that shapes customer relationships, where do consumers stand on the subject? Every day, consumers and brands take part in a dance between discomfort and expectations over privacy. It is a negotiation of data for personalization, and of insight for customer experience.

In the media realm, this trade-off decides the level of functionality and recommendations consumers can enjoy. The more control they want on privacy, the less customized their experience.

If a consumer forfeits her preferences, she can enjoy better recommendations; if she shares everything, her media may well be specifically curated for her. That said, 18.5 percent of consumers report being so uncomfortable with brands' use of their personal data that they actively avoid sharing it, even if it is to improve the services they get for their money.

Millennials, at 28 percent, have the highest level of comfort in how companies use their data. In contrast, more than one in two over the age of 50 reported a discomfort with brands' use of their personal data.

In a situation where almost half of consumers worry about brands' use of their personal data, but only 25 percent see data transparency as an investment they're willing to make, where does that leave media providers? Footing the bill.

Looking ahead

Consumers told us that they will expect more from their relationships with brands tomorrow than they do today. Understanding consumers' views of the future gives us a window into the development of their expectations, and a head start on upcoming opportunities.

Consumers expect the technological leaps and bounds of the last decade to continue over the next one; reshaping the way they live, work, and communicate.

Today, 43 percent of consumers pay to access their favorite media outlets. Almost one in two consumers (48.7 percent) believe they will not pay for media services come 2025. Furthermore, society's dependency on the channel through which most of today's media is consumed, the Internet, is not set to waver in the next decade. In fact, 68.8 percent of consumers predict that access to the World Wide Web will ascend to become a basic human right.

In this constantly connected world, 56.9 percent of consumers believe they will have complete control over their personal data. French consumers are the most positive about the progress of the state of data privacy, with 70 percent of them believing they will have complete control over their personal data by 2025.

With this in mind, when information and media are increasingly free, what are consumers willing to pay for? Functionality. The willingness to pay for increased functionality is consistently over 70 percent across all age groups. In contrast, early access to innovation is only deemed a priority for 59 percent of Gen Z, and this figure falls with age.

These statistics highlight overwhelming customer frustration with technology and services – frustration that is stronger than a desire for the latest innovations. Within this frustration is an opportunity to do better. ■

Greg Schoenbaum spends his days, and his nights, talking to media and entertainment executives around the world. He appreciates the unique customer-facing requirements this industry requires to ensure they're able to deliver a unique – and personal – client experience through Xerox's global customer care capabilities, such as the 30 different languages we speak.

Decoding the Intricate Web of Related Title Master Data

Centrally managing master data can open up new avenues of monetization

By Nimish Gupta, Director Product Management, Riversand Technologies

Abstract: Due to the proliferation of internal systems, media houses often struggle to gain control of the metadata for the titles and content they create. A centralized location to master and publish title and metadata information is key to enable content producers in their quest to own and control the narrative around the content they produce.

Digital is the main reason just over half the companies on the Fortune 500 have disappeared since the year 2000! Luckily, the M&E industry has been at the forefront of the move to digital. A majority of millennials are consuming premium media on the go, on all their connected devices. Consumers see no significant divide between digital and traditional media: what they want is more flexibility, freedom and convenience in when and how they consume their preferred content.

The digital and consume anywhere trends imply the need for rich information about the titles on offer. This information includes the title itself, plus "metadata" like plot summaries, ratings, cast and crew, extending to a number of other metadata elements like awards, genres, related movies etc. IMDB has become a standard public go-to source for both title and metadata information. Additionally, most content producers have their own internal equivalents, and broadcasters also provide title and metadata information in their content directories.

Industry bodies like EIDR help with the standardization of title information and the unique identification of information across media houses. Advertisers and broadcasters use AD-ID to uniquely identify advertising assets. These standards help identify content and advertisements, but don't do much to bring rich information about the content.

Within a typical M&E enterprise, things can be surprisingly murky. Media asset identification systems have necessarily existed for decades and have often "evolved" through a series of patches and quick fixes. All internal IT systems need a way to uniquely reference titles (either released, or still in development), and unfortunately often end up using different or non-standard identifiers. Over time such internal systems tend to proliferate, with each arising to deal with a specific set of issues. As a result, there is considerable variation between systems in terms of how titles are categorized, which metadata is associated with each title, and the very definition of a title or metadata.

The information about the content should be gathered as early as possible, preferably at the time of the content creation. The information should conform to the data quality standards defined by the organization, and it should be possible to have different standards for different classes of information (for instance a TV episode might not require the same depth of metadata as a feature). The system needs to ensure it measures the quality of the metadata and applies the right data governance and stewardship to guide users along the way of creating/publishing title and metadata information.

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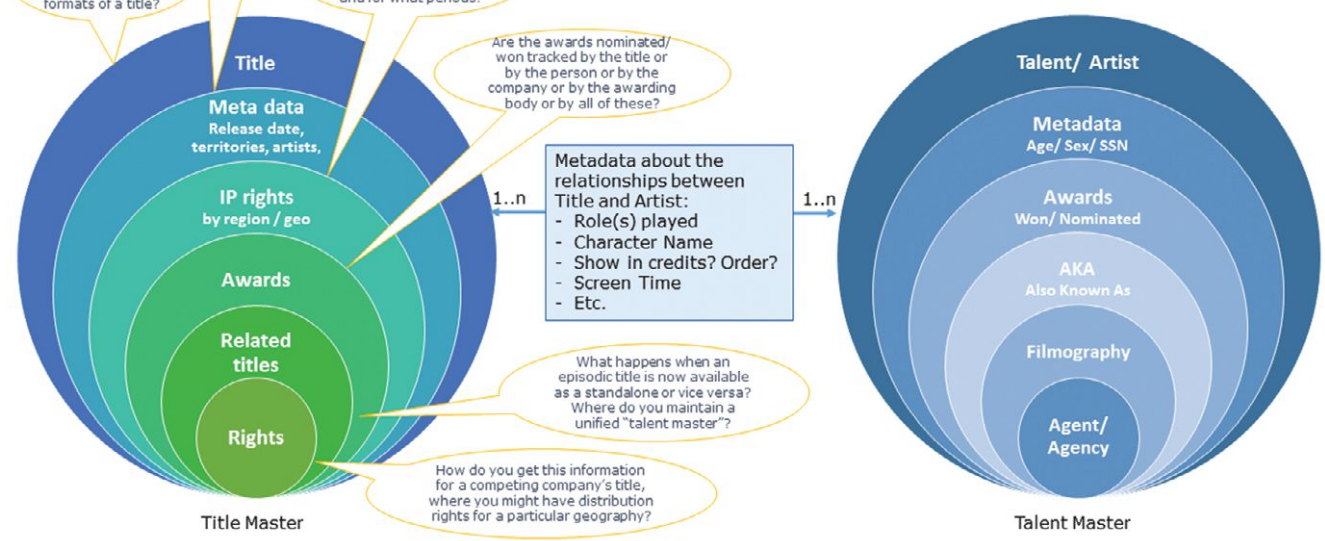
Title Master and Talent Master – The Relationships Involved

A combination of elements is required to provide a full 360-degree view of the title and metadata around the content.



Some of the complexities with mastering title and metadata information for the M&E domain come from the incredibly diverse, unique and often incestuous relationships that exist. What defines a "title" fully, what about the variants and different formats of a title? Who owns the IP behind the title, and in which territories and for what periods? How are the release dates, artists, crew, guilds and the companies involved tracked, both in the "home" geography, and in other geographies across the world? Are the awards nominated or won tracked by the title or by the person or by the company or by the awarding body or by all of these? What happens when an episodic title is now available as a standalone or vice versa? Where do you maintain a unified "talent master"? How do you get this information for a competing company's title, where you might have distribution rights for a particular geography? How do you model compilations, mini-series, associations, split and combines, and maintain consistency of information from the title to these?

It's a combination of all these elements (and more) that provides a full 360-degree view of the title and metadata around the content. Clearly it's not one person or team who can pull this information together. It requires massive collaboration across the organization, and more often than not, with partner organizations participating as well.

These requirements for centralized title and metadata management are best met through a solution that understands and has successfully modeled different M&E scenarios in a true multi-domain way, managing multiple related master data domains. A centralized system might also be attempted as another internal home grown system, but will likely end up as being a part of the IT sprawl due to the complexities involved.

Some key requirements for a title and metadata master data management solution for M&E are:

- Collaborate internally and externally to create and enrich title and metadata information.
- Define data governance rules that are universally applicable and variants for different formats/ markets.
- Stewardship to ensure the defined governance rules are adhered to.
- Real time integration with a slew of internal and external systems to ensure a single title master.
- Identify and eliminate duplicates, merge data across sources.
- Manage through quantifying data quality of information.
- Build and manage the mesh of relationships between the titles and other entities like artists, crew, companies, awards, ratings and rating. agencies, regions, rights, genres etc.
- Link titles to trends and social media conversations on those titles.

Centrally identifying and managing master data through the data life cycle opens up different additional avenues of monetization through data areas you may not have previously focused on. The challenge then becomes changing the processes to capture such information here on, and retrofitting the new content on the existing title master in an efficient, cost effective and operationally viable manner. New insights can be constantly gained from social media trends around the titles. Dealing with such large volumes, velocity and variety of data is a core strength of any big data stack. But when one adds the "veracity" of data to the mix, the need turns to master data management tools coupled with big data capabilities. The complexities of the relationships involved in the M&E industry are beyond the capabilities of conventional solutions and require new age solutions as well. Ultimately these should be standard capabilities of the chosen master data management platform. ■

Nimish Gupta runs product management for the Riversand MDMCenter product at Riversand's main development center. Prior to this role he was also involved in consulting in MDM at M&E customers. His past experience involves working as a product manager in different business and technical applications.

The Case for an Industrywide Avails Clearinghouse

The growing number of digital distributors and quicker speed to market create greater need for standardized communications around content availability

By Rob Delf, CEO, Rightsline Software

Abstract: Global consumer media platforms are finally pushing for the standardization of content avails transmissions from their many content providers. For the early adopters, these new practices are transforming a historically haphazard and error-prone process into one that promises a new level of efficiency, accuracy, and automation. But while large content providers can absorb the adoption of both the EIDR and EMA standards that make this possible, smaller players are finding it onerous to conform, and therefore more difficult to access an accelerating marketplace, risking marginalization of their content from the largest consumer platforms. To solve this, a low-cost, turnkey solution that combines rights tracking, EIDR registrations, and EMA-compliant avails generation needs to be developed.

As electronic sell-through (EST) and transactional video-on-demand (TVOD) markets begin to command a dominant share of revenue, an integrated, intelligent avails ecosystem will be vital to unimpaired industrywide growth.

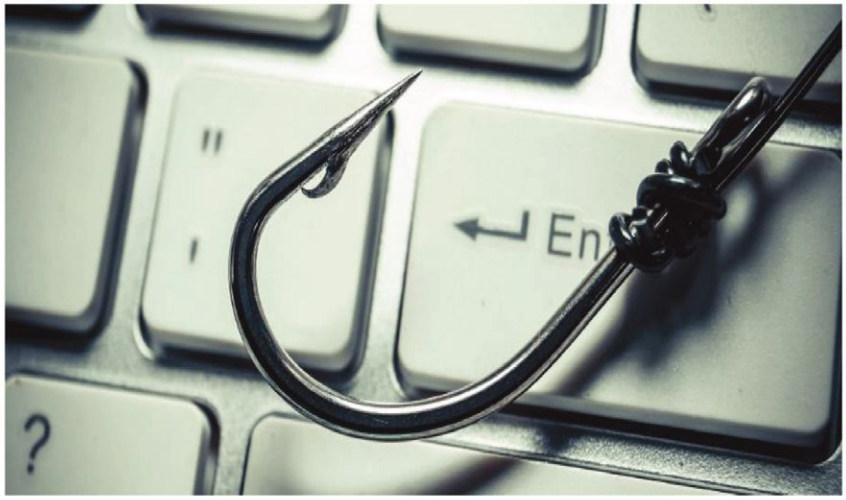
So, to set the stage, who are the players?

On the distribution/consumer-facing side, the traditional home entertainment sales cycle has been transitioning to an array of digital consumption models that have proliferated in the past three years. Gone are the pure-play physical rental models (with a few bright exceptions) and rushing in are the watch-anytime-anywhere companies as well as the all-you-can-eat subscription services. Meantime, the traditional cable companies have adapted by upgrading their set top boxes to handle two-way communication and high definition streaming, allowing them to compete in the ever-growing EST and VOD realms. By ever-growing, we mean estimates for 2015 surpassing $100 billion in the U.S. and $250 billion globally, with a compound annual growth rate (CAGR) of more than 25 percent projected for at least the next three years. It's the biggest trend in entertainment economics.

On the content owner side, the major players that existed yesterday are still in business today and are producing more product than ever; however, two new categories have also emerged to compete. The subscription video-on-demand (SVOD) services—deeply concerned about consumer differentiation and business diversification—have rapidly developed their own production/studio divisions and are suddenly competing at the highest levels in terms of both audience share and critical acclaim. In addition, the rising popularity of short form content has ushered in a new group of aggregation machines that are cherry-picking the best user-generated content and developing it into premium, branded content that can be bought and rented by already-established fan bases.

A key takeaway here is that the number of conglomerates staking claims on both sides of the holy fence between production and distribution is growing. This growing number of players, as well as the accelerating speed and compacted windows by which content now hits the market, are driving the need to standardize communications around what content is available on which platforms, exactly when, and at what wholesale prices—generally known as avails. While this may seem like a simple problem on the surface, the depth of it reveals a surprising complexity with the attendant, rampant frustration. Considering avails for both new releases and library content, a single consumer platform can receive as many as 10,000 updates in one month. This is complicated not just by sheer volume and lack of standard formatting, but also by the more agile marketing strategies of title bundles (think Superhero Six Pack), value add-

THE SONY HACK CHANGED THE GAME. ARE YOU READY TO PLAY?



The Sony breach in 2014 made it clear. *If you're not securing your information, you're not protecting your brand.*

30% of all victims have fewer than 250 employees

60% of small business victims are out of business within 6 months

80% of these breaches are preventable with basic security measures

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The number one thing at the Board level and CEO level is to ***take cybersecurity as seriously as you take business operations and financial operations***. It's not good enough to go to your CIO and say "are we good to go." ***You've got to be able to ask questions and understand the answers***.

Major Gen Brett Williams,
U.S. Air Force (Ret)
This Week with George Stephanopoulos, December 2014

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ed bonus materials (think Behind the Scenes With), temporary price reductions (think Valentines Week Special), direct-to-video (DTV), day and date, and others. All these avails, with all these variations from vanilla, need to be communicated reliably before anyone can start to make money.

The industry, to its great credit, has done a pretty good job of getting in front of this and tackling the first part of the problem. Existing standards, like EMA, have been adapted to handle digital content, and an increasing importance has been placed on EIDR—the leading universal title identification standard. Unfortunately, the array of homegrown systems—if they can be called systems—which transmit these standards, still largely rely on the ad-hoc creation and delivery of data via Microsoft Excel spreadsheets and text-based emails. For any global enterprise purpose, these methods have to be considered as both unstructured and invalidated.

What standards like EMA and EIDR have achieved is improving the data transfer streams between content producers and consumer platforms so the data is (mostly) able to be parsed by the systems on either end. It's still error prone, though, because Excel is still Excel (highly manipulable), and humans are still humans (highly inconsistent). Error prone means inefficient, and inefficient means costly. The adoption of standards in the industry workflow is a good thing, but it should not be heralded as a panacea for the problem. As we can see, standards alone can easily be mistaken for systems, though they are not the same thing. For example, standards can't validate data prior to transmission. They can't de-duplicate records. They can't call other systems for real time data transfers. Systems combine the intelligent enforcement of standards with other useful features, such as data creation and transmission.

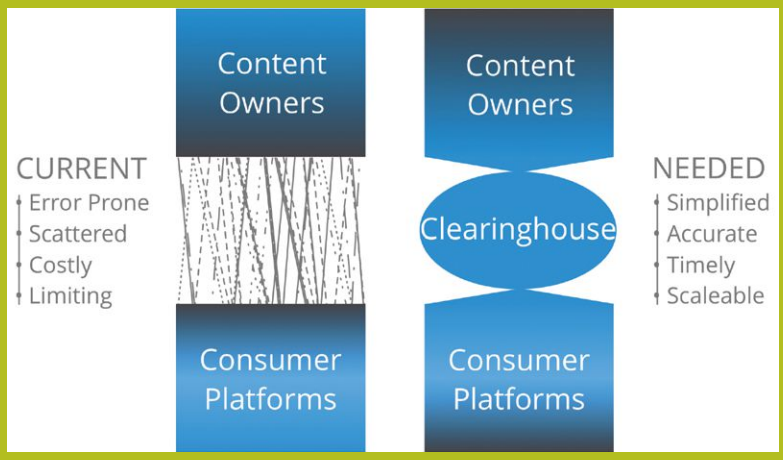
Several of the largest consumer platforms have discovered the hard way a litany of pitfalls inherent with Excel-based email exchange, even of mostly-standardized data. In reaction, some are now beginning to require all content owners instead to push avails updates via proprietary Web-based portals they have developed. While this has proven advantageous to both sides toward the mitigation of errors, as a content owner, it's not reasonable to have to login to a hundred different proprietary systems and re-enter all available titles, windows, and price points, let alone to update each system every time there is a change to any avail. (In fact, some powerful and pro-active content owners are now shifting the onus to the platforms to pull their avails data in a studio-proprietary format, creating a different kind of problem.) Although necessity has mothered some quick inventions here, the market-makers that are issuing these proprietary solutions are now assuming the resource burdens of developing and maintaining moving-target technology and business systems that are at best tangential to their core retail businesses. It's not exactly the place they're going to elbow out the competition and differentiate themselves. In fact, nothing could be less sexy or more wasteful than competing on avails transmission protocols. They are mere cost-cutting measures. More crucially, though, they miss out on the economies of scale and quality to be gained by processing data in a centralized clearinghouse, including canonical title matching, de-duplication, and error correction. The only way forward with any legs is for all these functions to be performed once and well by a neutral party, and then made available for anyone to use, on both sides of the content distribution equation.

Considering avails for both new releases and library content, a single consumer platform can receive as many as 10,000 updates in one month.

One only needs to look at other major (and not-so-major) industries to understand the advantages of an authoritative hub-and-spoke clearinghouse over a cobbling of point-to-point interchanges. As an example, it would be hardly feasible for every bank in the U.S. to connect

Continued on page 93

Where Avails Systems Need to Go



A connected infrastructure would allow content owners to seamlessly update hundreds of consumer platforms with the click of a publish button.

Rob Delf is CEO at Rightsline Software, Inc., a wholly owned subsidiary of Critical Mass Studios, Inc. Rightsline is the world's only true, multi-tenant, software-as-a-service rights and contract management platform, offering pipeline management, contract visibility, inventory tracking, and real-time avails. Rightsline services many of the world's leading companies within the media and entertainment ecosystem, empowering them to achieve maximum monetization through intuitive views of deal expirations, rights conflicts, and otherwise undiscoverable sales opportunities.

The Future of Content Sales is Programmatic and Adaptive — and It Will Be Huge

Growth in digital home entertainment programmatic content will mirror that of programmatic advertising

By Rob Gardos, CEO, Mediamorph

Abstract: Following the course of programmatic advertising, sales of digital home entertainment content will also become programmatic and adaptive. As we have witnessed the explosive growth of "programmatic advertising", where 59 percent of all U.S. digital display advertising ($15.43 billion) was sold programmatically in 2015, we will witness a similar growth in "programmatic content", which studios will sell, merchandise and price to video service providers in an adaptive fashion, thus enabling far greater scale and monetization.

On October 27, 1994 the first banner ad appeared on the Web. By the end of the decade, Internet usage exploded, driving online advertising revenue to $1 billion. As the CTO of register.com it was amazing to be a part of this initial adoption phase. Back then, pundits cited the potential of adaptive content and advertising but the industry's focus was primarily on making the sales engine and supply chain function. It did work – but often not well – and as a result, billions of dollars were left on the table.

Two decades later, U.S. digital ad spending represented $58.6 billion in 2015, according to eMarketer, and now programmatic and adaptive buying and selling strategies are fueling additional growth and efficiencies. "Programmatic advertising" is the practice, in which publishers use software and algorithms to dynamically sell their advertising inventory to advertisers, and the advertisers use similar software and algorithms to dynamically buy targeted advertising. The result of programmatic advertising is more efficiency and materially higher yields. According to eMarketer, 59 percent of all U.S. digital display advertising ($15.4B) was sold programmatically in 2015, and that is expected to grow to nearly 70 percent in 2016. U.S. digital video advertising is following the same course, in which 39 percent was sold programmatically in 2015, with expected growth to 56 percent in 2016 and 65 percent in 2017.

Opportunity for digital home entertainment content

Less than a decade ago, "digital entertainment" was still considered an experiment that was barely impacting the studios' bottom line. Today it is a substantial and growing business. According to PwC, the U.S. digital home video market for filmed entertainment is expected to surpass box office revenue in 2017, generating $16.5 billion by 2019. On a global basis, the digital home video market for filmed entertainment is expected to grow at a similar rate, growing to more than $30 billion in 2019, according to PwC's Global entertainment and media outlook 2015-2019.

It is evident that the deep penetration of broadband and mobile broadband, as well as the proliferation of mobile devices, is creating the large demand for digital content. Digital content created by

While the digital content market is growing, one of the main limiting factors is that the information flow between content providers and video service providers is manual and disjointed.

anyone, that is consumable anywhere, on any device, is transforming the industry and fueling its growth. While this transformation has been great for consumers and is a tremendous revenue growth opportunity for the entire content industry, it has created a host of challenges for the players involved. In order to provide digital content across different platforms, across varied business models, across evolving windows, across the globe, both content providers (studios) and video service providers (digital retailers and MVPDs) now have to deal with an increasingly complicated set of rights, licensing, pricing and promotional structures. The entire supply chain has become extremely complex, as content providers now have to supply their content and metadata to a growing set of video service providers in multiple formats on a regular basis. Furthermore, both the content providers and the video service providers have been experimenting with different windows, pricing, promotions and metadata, supported by research and marketing. They have proven that well thought out adjustments and better "merchandising" can have a positive impact on consumption and revenue. While a lot of this is manual today, it's just a matter of time that pricing, promotion and merchandising of content becomes adaptive to the demand and context.

Programmatic content

We define "programmatic content" as the practice in which content providers will use software and algorithms to dynamically provide compelling offers for their digital content to video service providers, and the video service providers will use similar software and algorithms to leverage these offers and promote them to end-consumers.

While the digital content market is growing, one of the main limiting factors is that the information flow between content providers and video service providers is manual and disjointed. Standards and mechanisms are evolving, which will ultimately allow for a fluid interaction and information exchange between the parties. As these mechanisms take shape and the digital supply chain becomes more automated, adaptive storefronts for video service providers will also emerge. They will dynamically obtain information from the content provider and use it to merchandise compelling offerings and a superior experience for the end-consumer.

This will be the world of "programmatic content" – a world where content providers and video service providers will be connected and be able to exchange information dynamically; where offers and bundles will be created based on algorithms that not only take into account buying behavior, but also content rights and economic terms; where top tier content and/or shelf space will be bid on or automatically allocated based on dynamic rules and intelligence; where metadata profiles will adjust to maximize conversion and thereby revenue.

While bigger players, like Netflix, have embraced these concepts for years, widespread adoption will drive further disruption and growth in the industry. These concepts have driven the monetization of the Web for years – the next big move will be programmatic content. The content providers and video service providers who embrace this will win.

How do we get there?

There are three areas that need to come together more aggressively.

Automated digital supply chain – The industry needs to truly automate the supply chain from content creator to video service provider to consumer. This includes a full feedback loop where assets and metadata, as well as information on rights and pricing, flows freely between all parties.

Automated merchandising – Dramatically improved merchandising systems for both the content creator and video service provider will present consumers more flexible and targeted offerings while also focusing on maximizing revenue and profits.

Data, Data and Data – Dynamic data exchange is a key aspect to driving these supply chain efficiencies and intelligence from start to end. The more systems can communicate and exchange information in real-time, the better the opportunity to produce an effective overall supply chain, as well as underlying data for better decision-making.

Where are we on the path?

There have been many recent improvements made to managing digital assets as the industry consolidates around standards like the Entertainment Merchants Association (EMA) Media Manifest and File Manifest and EIDR identifiers. Video service providers are supporting these efforts with high-performance digital transport networks, allowing data to move more quickly. This is a foundational building block that must continue to evolve.

From a commercial perspective, most of the digital supply chain (economics, rights, etc.) is still primarily manual. Critical components of the digital supply chain are managed in isolation, as pricing and avails processes do not integrate with licensing and contract management systems. While there has been some positive momentum in this area with the evolving EMA Avails standard, the reality is that this process is still dominated by spreadsheets and manual processes. This results in inefficiencies, errors and high costs from service bureaus. Automated merchandising and dynamic pricing are fairly uncommon beyond a select set of players. This translates to monies being left on the table by both sides of the equation – content providers and video service providers. As the supply chain becomes more automated and intelligent, we expect heavy investment in this area as the return on investment is validated. ■

Robert Gardos is intensely focused on developing solutions that help customers accelerate the M&E digital supply chain. He is an accomplished executive manager and entrepreneur who has worked in the mobile, enterprise software and internet solutions areas for 20 years in a number of C-level, board and GM positions. He has a wealth of experience bridging business and technology to create world class, transformational software.

M&E's Cloud Evolution and Revolution

Security is a key issue around cloud adoption

By David Benson, Founder, DSB Consulting

Abstract: The costs of creation are growing more expensive, production is becoming more globally diversified, and security is the first thing on everyone's mind. M&E companies need to think creatively about how to leverage the cloud to properly manage and protect their assets. This article will provide overarching perspective on how the cloud is transforming the business of Hollywood, and expose the strategic thinking necessary to fully realize the power of the cloud.

Hollywood is no stranger to innovation. One hundred twenty years ago the first moving pictures left audiences awestruck, and in some cases running for the exits in a panic. Since then we've enjoyed the addition of sound, color, and special effects; the rise of radio, television, and cable; VCRs, DVRs, and On Demand; shifts from SD to HD and from 2K to 4K; and countless new behind-the-camera technologies that made us work smarter and what we produced better. But today M&E is in the early stages of one of the most challenging – and vital – evolutions in its history: The cloud.

Change: The only constant

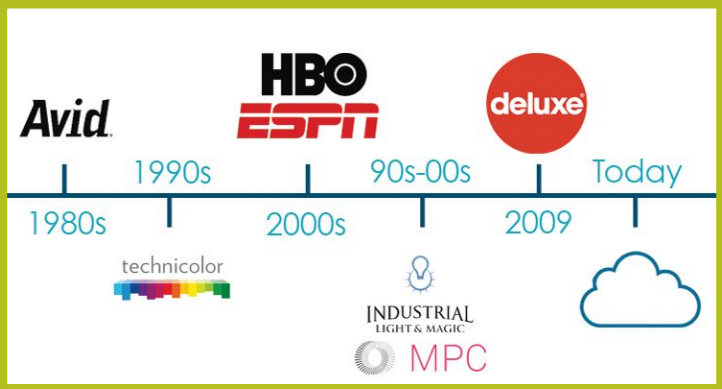
One of the biggest misunderstandings about the cloud is that it's some shiny new object. Movement toward the cloud was underway long before anyone heard the term "cloud." Enterprises have been using "private clouds" pioneered by companies like VMWare and Citrix for a long time, but they were called "data center visualization." Hotmail, a cloud-based email service, launched twenty years ago and was followed by Yahoo and Gmail. We've all been using cloud solutions every day for decades, but the average consumer didn't realize it.

That's one of the factors that make the cloud seem mystifying and scary. But conceptually it isn't something the M&E industry hasn't experienced before. Take the evolution from tube, to record, to cassette, to CD, to MP3. Each step was incremental until the quantum shift from a physical medium to digital. That was a gigantic leap that completely changed how we produce, deliver and consume music. It opened the door for radically new business models and innovation. The same thing is happening with the cloud. Companies like AWS have commoditized the virtualized data center infrastructure and offer it to the masses.

Endless innovation has continually disrupted and transformed M&E in previously inconceivable ways. Imagine telling someone in 1990 that Apple would become the world's largest music retailer. Similarly, it wasn't that long ago that very few people could envision a Netflix or Amazon utterly and completely transforming television. But

One of the biggest misunderstandings about the cloud is that it's some shiny new object…We've all been using cloud solutions every day for decades, but the average consumer didn't realize it.

Timeline of Editorial Disruption in M&E



- **1980s:** Editing moves from mechanical cutting to computer-based editing. (Avid)
- **1990s:** Industry moves from film to digital tape. (Technicolor, Deluxe)
- **2000s:** Cable and Web jump into the fray and content creation expands ten times over (ESPN, HBO). Technicolor dominates packaged media (DVD).
- **Late 1990s/early 2000s:** Visual effects and non-linear pipelines disrupt business models. (ILM, MPC)
- **2009:** On location services transform post-production and begin the elimination of bricks-and-mortar models. (Deluxe acquires Next Element)
- **Today:** Cloud models become the new normal.

now we're in a world where "binge watching" is a not only a thing, it's a thing everyone enjoys. Streaming services are producing shows that win Emmys, cable networks are going a la carte, and TV production schedules and workflows are drastically, indelibly altered.

M&E pain points

Film, television, music, news, sports, live events, advertising, video games – any company with digital assets – each face their own unique challenges that need to be addressed when it comes to the cloud. But there are some issues that broadly apply to the industry as a whole.

- Security is a prime concern, but downward pressure on budgets make it a luxury most companies struggle to afford.
- Cable, broadcast and streaming sites require new approaches to content production and distribution. For studios like Amazon and Netflix, cloud delivery is their default operating mode, putting all others at a disadvantage while they adapt.
- Modern studios and networks have moved away from capital expenditure investments on the balance sheet. Modular and on-demand cloud models have become ideal for streamlining and aligning business expenditures more directly to the productions that incur them.
- Tax and labor efficiency will continue to be major drivers of production and post-production business decisions. Cloud allows deployment anytime, anywhere, on a moment's notice.

While all of these are key factors driving adoption and evolution, the specter of security cannot be overestimated. The 2014 Sony hack was a seismic event that had an unprecedented impact on the industry and created an extreme awareness of security and liability.

There have been numerous other sophisticated corporate hacks of large companies, including Saudi Aramco, eBay, Target, JPMorgan Chase, Home Depot, and Anthem/Premera Blue Cross. But the Sony hack showed Hollywood what kind of pervasive, deeply rooted and widespread damage could be done to one of its own. Suddenly everyone in the industry was reevaluating everything they thought about the cloud, and it made all companies in the media space reconsider how they managed risk internally and where the cloud fit into their overall IT strategies.

Same ball, different game

Managing the cloud is fundamentally different from how you would manage a data center. Storage is very different. The way storage acts is different. Transfer between cloud services or even moving content within one provider, such as AWS data centers in Oregon and in Europe, is different. This has a monumental impact on day-to-day operations and requires a completely different way of thinking.

The cloud is a new paradigm that flips data center methodology on its ear. We used to mold solutions to fit the problems; now we have to mold problems to fit the available solutions. In the past we focused on building one box that was insanely efficient and could do the work of five servers. Now the path to an

Continued on page 92

David Benson is the founder of DSB Consulting and co-founder of BeBop Technology, both based in Los Angeles. He is one of the M&E industry's most innovative technologists and foremost cloud experts. David has held several senior technology executive positions in the post-production arena. He has created numerous groundbreaking data, cloud and workflow solutions for film studios, television networks, digital content developers and distributors.

Video in the Cognitive Computing Era

How intelligent machines and cloud are unlocking video's hidden secrets

By Steven L. Canepa, General Manager, Global Telecommunications, Media & Entertainment Industry, and Chad M. Andrews, Telecom, Media & Entertainment Global Solutions Leader - Cloud Video Solutions, IBM

Abstract: By treating video as a first class data type, modern video platforms have begun to reinterpret the world to solve problems and capture more business value; but as more video moves to the cloud, harvesting video's underlying data will require changes to the application architecture in every industry.

Video is the most popular form of content consumption on the planet, generating behemoth revenues through traditional business models, and compelling the average American to spend 5.5 hours viewing daily, according to eMarketer. By 2018, the global pay-TV market will see its 1 billionth subscriber, generating $300 billion in global services revenues, predicts ABI Research, and another $200 billion by way of television advertising, per Statista.

Yet despite the strength of traditional distribution models, a mobile and socially savvy customer is consuming more video from the cloud. Facebook and Snapchat users combine to watch 15 billion videos each day, *Fortune* reported, and over-the-top streaming subscribers are projected to grow by three times to reach 330 million-plus by 2019, according to Juniper Research.

All told, online video ad revenue will generate $24 billion by 2018, predicts ExchangeWire, and is growing by double digits.

Video is already the most dominant data type flowing across global networks, but it is still growing – and fast. By 2019 video will eclipse everything else on the consumer Internet by 4:1, and will comprise greater than 3:2 of all data on business networks as more video is used within the enterprise for communications, training and marketing, according to Cisco.

Use of video is growing across industries because it is effective. Some examples of this include:

- 70 percent of marketing professionals report that video converts better than any other medium, reports Marketingprofs.com;
- 64 percent of consumers are more likely to buy a product after watching a video about it, reports *Social Media Today;*
- 79 percent of students in higher education voluntarily watch videos to enhance their understanding of a topic, reports *Science Daily*.

Despite its clear emergence as a first-class data type, the exploding popularity of video masks a startling truth: that the upside of video is still largely untapped. Slowly, however, it is

Despite its clear emergence as a first-class data type, the exploding popularity of video masks a startling truth: that the upside of video is still largely untapped. Slowly, however, it is beginning to be unlocked by modern video cloud platforms and cognitive computing.

beginning to be unlocked by modern video cloud platforms and cognitive computing.

Just as the human mind uses visual and aural cues to navigate the world around us, video data provides valuable visual and aural information to machines.

Sub1 is a robot that used video to help set a World's Record by solving the Rubik's Cube in under a second, signifying that machines are now essential collaborators in mastery of a growing number of tasks.

Rubik's Cube is a relatively easy problem to solve. For any combination of colors across the cube's faces, there is a pattern that can be recognized and a corresponding optimal turn. Arriving at effective solutions to many of the world's problems require more advanced weighing of information against historical records and decision trees.

Japanese telecommunications giant SoftBank's Pepper customer support robots use video to interpret emotions through facial expressions and vocal tones. Encounters measured to result in the best customer support experiences become learned behaviors.

Invisibly over the past few years, we entered into the cognitive computing era, where the human brain and data are linked. Search engines, traffic and weather apps have long surpassed traditional methods for finding relevant and timely information. Similarly, an enormity of business challenges across industries will soon utilize video data along with cognitive computing algorithms to help answer valuable questions, such as: By scoring similar police encounters versus outcomes, is it possible to derive best practices and formulate training? Can video cameras in a theme park help identify when a guest is happy, bored or hungry and help inform real-time recommendations and offers? Does a skin lesion's characteristics compare to a historical database of similar imagines to suggest a likelihood of it being cancerous?

As the Internet of Things (IoT) takes shape, more cameras will connect in a matrix of images, sounds and data to solve for more advanced problems, like: Can traffic signals, sensors and cameras combine to inform cars to avoid hazards? How about sensors and cameras at a football game combining to identify a game's strategic keys to victory and helping coaches to make decisions?

Data improves how video is targeted, packaged and served

Beyond traditional broadcasters, cable and satellite players, every enterprise is to some degree becoming a media company tasked with understanding what exists within their video repositories and how to make it useful; and media companies are faced with unique challenges, such as:

- An epic volume of video is created globally every day, making it exceedingly difficult to manage, let alone understand;
- In the expanding digital universe, consumers are faced with infinite competition for finite attention;
- Consumers increasingly want content coupled with other kinds of information to form bespoke experiences spanning screens;
- It can be difficult to measure how a watched video led to a result, whether it is a product purchased or a skill learned;
- Consumption is fragmented across platforms, hindering reach and audience measurement.

To solve for these challenges, modern video platforms require changes to the application architecture tailored to individual use cases. For best results, these changes follow organically from world-class experience design, beginning with the principles of immersive experience and flowing backwards.

Effective video cloud solutions ease the burden of ingesting, managing and processing video by decomposing underlying video processes into standardized services that can be recomposed with commodity piece parts into powerful workflows that can also be adapted or changed on-the-fly.

These solutions are also capable of comparing content and viewing characteristics across multiple sources of customer data to better understand bespoke audience preferences. Common sources of data include:

1. ***First party*** (direct data about consumers);
2. ***Second party*** (data from your own data management platform assembled from multiple data sources);
3. ***Third party*** (data from other platforms operated by data services);
4. ***Metadata*** (contextual data about video useful for automating processes and determining associations between videos and other content).

A strong video cloud platform will accelerate time to value by exposing micro-services in a Platform-as-a-Service (PaaS), allowing developers to expediently add, test and scale

Continued on page 93

Steven L. Canepa *is responsible for the P&L of a market-leading global organization working with firms in the telecommunications, cable, entertainment, online, games, advertising, broadcast, publishing, satellite, sports, music, search, and social segments. He has grown the business into one of the largest providers of solutions and services to the Industry and IBM's top performing Industry Division.*

Chad Andrews *works with IBM customers and business partners to design and implement video solutions that transform. Prior to joining IBM, Chad led strategy for a "Fortune 50" company's Telecom, Media and Entertainment division. He also co-founded and ran the West Coast division of a leading post-production services company, and led the mobile services division of a second startup dedicated to converging production and post.*

Evolving Business Cases in the EIDR Growth Path

Flexible identifier supports a growing number of content distribution vehicles

By Don Dulchinos, Executive Director, Entertainment ID Registry

Abstract: EIDR (Entertainment Identifier Registry) was created in part to help members manage the growing complexity of their businesses as supply chains become more complex and monetization options proliferate. EIDR has grown and evolved over the last five years, and this article will explore the evolution of the EIDR usage and its growing impact on supply chain efficiency and content monetization.

The EIDR registry has grown in many dimensions. The raw size of the registry has grown to over 840,000 unique records, and the timeliness of IDs created for new film and episodic releases has improved as membership covers more and more of the commercial market. The diversity of records has grown from a focus on Level 1 title-level or parent IDs ("abstractions") to encompass more Level 2 edits or versions of titles to accommodate various distribution needs. The migration to Level 3 manifestations is poised to explode as will be described later in this article.

The geographic reach of the registry has grown especially in last two years, and EIDR membership is now 20 percent companies outside the U.S., and two of the three largest catalog match and registration efforts in the past year originated in Europe. EIDR also has launched active Asian outreach, visiting Japan in December 2015 (along with Japan based executives from members Google, Sony, and Rovi) and planning another recruiting visit in mid-2016.

EIDR IDs become standard practice

EIDR first emerged as an organizing factor within the title management systems of the major Hollywood studios. By 2015, it has been standard practice to create EIDR IDs for all film and television productions. The achievement of coverage of the universe of commercially viable content has yielded some interesting internal applications.

For example, Sony Pictures Entertainment recently spoke about an internal use case to support the business analysis leading to greenlighting decisions for new features. In such analysis, comparable films are analyzed to help predict the likely return on investment. To obtain a complete picture of competitive title performance, data from multiple sources covering multiple territories

and distribution channels must be collated. This requires significant manual effort.

Sony analysts leveraged EIDR identifiers, and the existence of Alternate IDs within EIDR Records, to link data from multiple sources. Sony MPM IDs were used to retrieve previously matched IMDb IDs from EIDR-linked records. Rovi IDs could be used to match additional Sony MPM and EIDR records, pulling in even more IMDb IDs. EIDR's matched Flixster IDs were used to pull Tomatometer ratings via the Rotten Tomatoes API. It is worth noting that several studios are customers of international ratings service aggregators. Those services have begun to use EIDR to help normalize ratings across multiple rating services in multiple territories.

At Warner Bros., the achievement of wide content coverage of EIDR IDs has enabled the studio to begin work on integrating EIDR into different internal tracking and management systems. EIDR is being integrated into Warner Bros.' digital asset repository, as well as the company's Metadata Service Bureau for master data, and the company's DEPOT system for Digital Content Publishing, which supports UltraViolet, SuperTicket, Digital Copy 2.0, and eScreeners. In terms of digital distribution, EIDR is being integrated into digital asset management (DAM) systems, media asset management (MAM) systems, content ordering and workflow management portals, and the client avails system. Warner is also leveraging EIDR in financial systems and business-to-business portals.

EIDR has also surfaced in rights tracking products from EIDR members RSG Media and FilmTrack. Last year, FilmTrack unveiled a new integration with EIDR allowing FilmTrack users easy access to EIDR's unique content identifier system for movie and television assets. With the push of a button, FilmTrack users can now auto-populate an EIDR number into their StarCM Content Manager, which captures all metadata associated with a project, including title, genre, cast, crew, and hundreds of related attributes defining the technical and artistic nature of the film.

RSG Media adapted IBM's digital innovation platform for IBM Cloud for performance analytics on networks' media use. The transition to the Bluemix product allows for the mass collection and analysis of structured and unstructured data sets from all linear, on

In terms of digital distribution, EIDR is being integrated into digital asset management (DAM) systems, media asset management (MAM) systems, content ordering and workflow management portals, and the client avails system.

demand, and digital media platforms. This includes networks' revenues and costs, content rights, programming schedules, promotional placements, advertisements, social media activity, and a plethora of other industry data sources including EIDR, Nielsen and SNL Kagan to name a few. This has enabled networks to optimize media planning and return on investment from all platforms including their use of programming, promos and advertising.

Warner Bros.' use of EIDR in the client avails systems mentioned above provides synergy with some of its online retail partners, who also derive benefit. EIDR now contributes to a more efficient digital home entertainment supply chain, demonstrated by Google and Microsoft. In a 2013 *M&E Journal* article, EIDR reported on a study of the Warner Bros. – Microsoft workflow and identified savings of hundreds of hours in manual matching and quality assurance (QA) efforts in just a single business deal for one pair of business partners. Multiplied by several partners and dozens of business deals, this amounts to significant cost savings.

More recently, Google conducted an internal study and found dramatic reductions in processing time for a batch of avail updates. Again, multiplied across tens of thousands avails, and hundreds of content partners, this effort pays for EIDR membership and effort many times over.

For both of these cases, in addition to cost savings, there are clear benefits through greater automation in time-to-market improvements, getting avails in front of consumers sooner and leading to earlier realization of revenues.

Processing Time for Batch of 1000 Avail Updates		
	Before use of EMA Avails w/ EIDR	After use of EMA Avails w/ EIDR
Title matching, de-dupe, parsing, including research & partner communications	~25 hours	0.1 hour
Apply final updates & audit	~25 hours	0.1 hour
Total	**50 hours**	**0.2 hour**

Google processing time reductions for EIDR-enabled avails.

In summary, the past and present of EIDR has set the stage for some intriguing future growth paths enabled by technology breakthroughs and new business models.

IP transport accelerates

The transition to IP transport across all broadcast, MVPD, and digital supply chains continues to gain momentum.

Next generation standards and technolo-

Continued on page 94

Don Dulchinos is responsible for day-to-day management as well as growing the membership and usage of EIDR's products and services. EIDR's mission is to drive out inefficiencies in the video supply chain, while enabling new business models and workflow processes in a world of rapidly proliferating video distribution technologies. EIDR is an independent, dues supported non-profit entity with over 80 member companies

Changing Consumer Demands and the Agility Needed to Support Them

An enterprise-wide solution that embraces technology for transformation beyond technical departments is needed

By T Shobhana, VP Head, Global Marketing & Communications, Prime Focus Technologies

Abstract: To meet increased demands for digital content with the lowest cost of ownership, content creators and distributors can no longer rest on existing and independently functioning systems that result in islands of automation. Going digital is simply not enough, there is a need for content enterprises to become hyper digital, bringing together departments, vendors and distributors under one system, to face the digital realities and be prepared for the continued changes that lie ahead. All the departments in an organization (marketing, legal, compliance, distribution etc) should not just talk to each other but operate on the "one moment of truth" principle.

Today's consumer is an evolved creature and already "cord-cutters" have become old news among young adults. In deserting the traditional model of television for a variety of digital outlets that provide the convenience of consumption when they want it, the way they want it, the newest consumers–the so-called "cord-nevers"–are increasing demands on an industry that finds itself woefully outdated.

Increasing volume of content, ease in discovery, multiple platforms and devices, need for speed, monetization components and making everything digital are all daily challenges for content providers that need to be factored in to the content creation process. The M&E industry is changing at an ever increasing pace, and many content enterprises are struggling to keep up.

Demand is growing for digital content

Growing numbers of digital outlets globally have acutely driven the need for content owners to embrace the cloud, not only to service the required volume and speed of content delivery, but to capture the attention of fickle digital consumers that have myriad content options available at their fingertips. With 800 million iTunes users, 75 million subscribers on Netflix, six billion hours of video watched per month on YouTube, and 19 percent of U.S. millennials using Amazon Prime, content owners are in a mad race to get content to digital platforms faster, cheaper and to make it quickly discoverable.

Outdated systems and independent media asset management (MAM) services used by the M&E industry have led to delivery delays, rampant content duplication and incremental costs, resulting in an inefficient enterprise. Traditional organizational structures, inefficient older IT systems, duplication of staff skills, higher costs and a lack of scalability in the changing world of the digital consumer remain embedded within the content enterprise.

A single, enterprise-wide solution that embraces technology for business transforma-

tion beyond technical departments is the solution to these challenges. A united, enterprise resource planning (ERP) suite tailor made for media, such as Prime Focus Technologies' CLEAR, is proven to drive efficiencies, reduce costs, enhance creativity and increase revenues.

Keeping up and controlling costs

In a connected world, having the content at the center of the businesses with software to manage it and workflows around it, across the content life cycle, will emerge as a necessity. In the process, an end-to-end digital solution will not only reduce unused and duplicate media asset costs but assist in generating additional revenues through lead-time reduction of new service offerings.

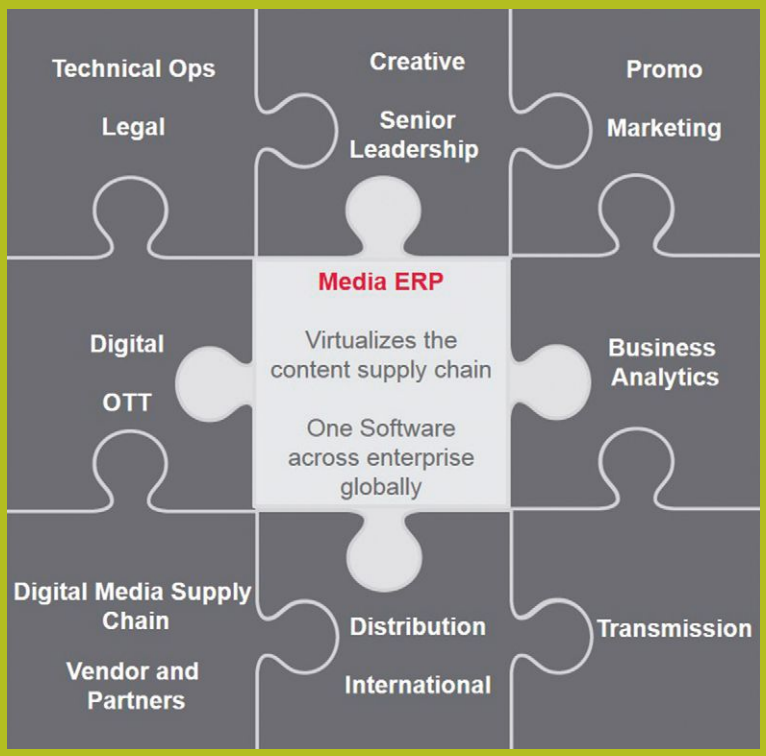
A fully equipped ERP suite can maximize operational efficiencies and allow for workflow orchestration across enterprise, supply chain and partner ecosystems. Preset robots can smartly prepare, package and deliver content to both linear and non-linear platforms, automating what before was a manual process. Along with detailed, multi-layer smart metadata, content owners are able to deliver large volumes of content quickly, while creating an easily discoverable and engaging experience for the consumer.

Equally as important as the need to deliver content quickly and effectively is the need to do so with lowest total cost of operation. Broadcasting revenues are expected to remain flat over the next five years while operating costs are expected to rise at a faster pace due to a proliferation of screens. Content owners need to drastically and quickly realign operating strategies to succeed in the "new normal" of multi-platform and digital consumers.

By virtualizing content supply chain operations, freeing up human bandwidth and maximizing operational efficiencies, an effective ERP solution can bring in savings in operating costs to the tune of millions of dollars while implementing an effective business process management across the enterprise, enabling monetization and adding new revenue streams.

Understandably, many content enterprises may be hesitant to overhaul legacy systems for fear of associated costs. What cloud and software-as-a-service solutions can offer is the ability to scale operations at a level of comfort, allowing enterprises to grow appropriately and pay accordingly for lowest cost of ownership. Regardless, content owners can no longer afford to ignore the model completely and must look to change the way they do business.

A United ERP Suite Tailor Made for Media



This approach can drive efficiencies, reduce costs and increase revenues.

Another often cited concern over moving to a cloud-based solution is security. In the age of digital piracy, content isn't king, it's the entire kingdom and many content enterprises are wary of entrusting such valuable assets to off-premise storage. Hybrid cloud solutions offer the perfect middle path, addressing the anxiety and concerns owners have towards allowing critical IP content to rest entirely outside the business premises. It offers a fine balance between on-premise storage and off-premise archiving.

In addition to the already notable benefits of reduced operational costs and enhanced efficiencies, adopting a single ERP system to manage the business of content can have far reaching benefits to an enterprise. By virtualizing the time consuming processes of user rights and licenses to storage subscriptions and more, an ERP solution provides more business agility and contributes to net new revenue by allowing creators to focus their efforts towards making better content, rather than the business behind managing it.

The mobile and connected nature of a cloud-based system fosters collaboration between departments, further enhancing creativity and enabling users to access their content from anywhere, anytime on any device, with utmost security. Departments across the globe can all access content, make notes and provide feedback at a moment's notice. This also serves to liberate creative teams, offering them a work-life balance that cannot be achieved with disparate, on-premise, legacy systems.

By adopting a one software ERP system, media and entertainment enterprises, from studios to broadcasters to post production houses and more, can adapt to the changing of times, connect with today's digital consumer and facilitate development of the best possible content. ■

T Shobhana brings over 13 years of experience as she drives corporate marketing for Prime Focus Technologies globally, covering go-to-market strategies, product marketing, corporate communications, events and analyst relations. She previously worked with Capgemini, Mahindra Satyam Computers Services and GE, where she led various marketing functions.

Ending Chaos in IT Organizations

A governance model facilitates application changes in entertainment

By Brian Dawson, Business Manager, Affinity

Abstract: Entertainment companies are rapidly changing applications and developing new technology to meet the demands of their businesses. As information technology (IT) organizations change, their lack of an overall governance methodology creates chaos affecting the business' ability to meet their customer demands. In addition, it creates a burden on internal resources. Project management offices (PMOs) provide a powerful reporting tool, but the PMO doesn't fix the faulty methodology. By providing a top-down governance model, IT departments significantly reduce risk, gain a better handle on budgets and capacity, along with reducing IT fatigue. It changes the IT culture. It delivers.

Do you know how many projects are running across your IT organization? Is your IT organization chasing fires, working extreme hours, and not meeting the demands of the changing media industry? As the CIO, is your team constantly asking for resources and budget for application changes that just seem to appear out of thin air while the previous changes aren't completed?

Imagine a media company that wanted to implement an advertising platform for cable TV and another group within the same company wanted to implement an ad platform for on-demand media. Both groups create independent teams to investigate possible solutions. While at the same time, both teams are implementing changes to the existing platforms that serve both functions.

After some preliminary research, one group decides to pursue a solution involving a third-party platform that can be configured and customized while the other group decides to design and

For any given IT organization, there are more active projects than ever before, and the requirements of these projects are often themselves in a state of flux.

implement their customer platform. Time passes, and it becomes clear that both groups are implementing similar platforms. After budget overruns and missed deadlines, a new initiative is developed to unify the two advertising platforms. All the while changes are being made to the existing functionality. Teams are overworked, and there is no capacity to complete all the changes and strategy necessary to be successful. In addition, another 200 projects are running in parallel. The projects that get the most attention come from the leaders who are the loudest. Not a great way to run an organization.

This is a familiar story. From our perspective, it is easy to see where the team went wrong: executing on a sub-optimal plan. How could a CIO have noticed or helped guide the teams to stay on-track to manage the project differently, and keep a better view of the company's fundamental goals? In the trenches, such clarity is difficult to come by. A constant barrage of requests, competition for funding, and lack of communication between teams makes good IT governance a perennial challenge.

New competitors change the game

In the entertainment industry, the changes are even more extreme. The shift from TV-centric consumption to streaming mobile consumption, and the entry of sophisticated new competitors controlling both content and distribution, has required entertainment IT organizations to up their game and develop internal tools to help their companies compete in the space.

Meeting these changing expectations can be challenging. For any given IT organization, there are more active projects than ever before, and the requirements of these projects are often themselves in a state of flux. Without an effective top-down governance system for keeping a 10,000-foot view on the activities of the organization, it is a near certainty that teams and leadership will fall into reactive patterns of putting out fires, rather than making informed, long-range decisions in line with the real objectives and goals of the company.

Many IT organizations have PMOs that play or attempt to play this role. In some cases, this is sufficient. In many cases, however, the PMO value-add is negligible at best: the reporting does not aid in planning. Fundamentally, effective IT governance requires information in a form that allows for proactive, and not reactive, decision-making. What does this mean?

The view from 10,000 feet

First and most fundamentally, it means finding a way to get a 10,000-foot view of what the entire IT organization is doing – a governance model. This is easily the most valuable thing you could do. In a large IT organization, with hundreds of projects, the natural tendency is for projects to remain isolated from each other, for work to be duplicated, leading to redundancy in features, and for work to be poorly prioritized. This, of course, means that the IT org is producing less value per dollar than it otherwise could be. A simple start is just to categorize and understand all the projects in progress and planned. Then schedule a regular cadence of updates. Not just a PMO update, but a planning update. When you look at projects that have a set of important attributes, it allows you to be better informed on meaningful projects and remove the drama of IT. Let the drama be done by the professionals in your organization--the content creators; not the IT team.

Better results with a governance model

When a CIO embraces a governance model, the company can view its portfolio and finally reduce risk to the organization. You can prioritize projects and begin to reduce chaos. The results end with a better-managed portfolio that is strategic with the business partners who ultimately fund the IT organization. Getting a 10,000-foot view means being able to see the entire set of projects in the org, their goals, their budgets, and their timelines. It should be easy for leadership to identify the benefit that funding the governance program brings to the company. With potentially infinite possible projects competing for resources, such a view is essential to prioritizing work. The 10,000-foot view has other benefits as well. Without this view, it becomes impossible to do long-range capacity planning, let alone find duplication in the efforts of different teams. With a long view, it becomes possible to achieve great efficiency by finding overlap among projects, and developing tools and practices that can be shared across teams.

The benefits of improved prioritization, capacity planning, and eliminating redundancies are available to any IT organization, regardless of scale or industry. The question is not of total output, which is a function of the specific IT organization, but rather of effectiveness, which applies across the board.

To achieve these results is not just a spreadsheet that gets filled out, but a change to the culture of IT. Organizations like Affinity can help create a governance model that identifies all the IT projects and improves the entire organizations' communication strategy that builds efficiency and creates new habits that change the IT culture. IT organizations need to embrace a shift in their Governance strategy to reduce chaos and meet the demands of the customers. ■

Brian Dawson is a Business Manager with Affinity, a client-centric IT solutions company that has a clear understanding of the challenges and solutions of IT. Affinity has helped IT departments in M&E and other large industries become more efficient and effective in all areas of IT, from governance, application development, project management, and managing infrastructure. He has 20 years of experience running IT teams, growing businesses, and helping companies.

MISHRA *Continued from Page 6*

for mobile, PCs or consoles?

Studio Restructuring to be Lean: Every studio has gone through enterprise wide cost reduction to become lean in order to embrace the disruptive, digital technologies in the wake of the Internet, wireless and smart phones. Management consulting companies have been sought for innovative ideas for change through restructuring. The technology stacks are being configured with advanced versions of master data management, rights management and other critical systems from third parties. The cloud has become an enabler of global distribution of centralized, localized content. Metadata integration is being deployed as the SNL Project has demonstrated.

Change is always the most difficult task. Dean Hallet, the EVP and CFO of Fox Filmed Entertainment, explained most eloquently in an interview at HITS that he teamed up with his business colleagues and entrusted them with the task of meeting the challenges and opportunities of digital technology. They figured out what was best for the organization and implemented the necessary changes, while leveraging third party technology and service companies like never before.

Final note: This year, Super Bowl 50 could go down as the tipping point for a new phenomenon, with consumers playing back the ads on their smart phones right after they watch them on TV. According to Google/YouTube, 83,000 hours of Super Bowl ads were played online during the broadcast of the game. Sixty percent of that online viewing occurred on mobile devices.

Peter Diamandis and Steven Kotler in the book, *Abundance: The Future Is Better Than You Think,* remind us that technological innovations will grow exponentially in a connected world with a much higher standard of living. The adoption of technology is accelerating as we successfully overcome the digital blind spots. ■

ELLENBURG *Continued from Page 12*

well with the guilds, the British Academy of Film and Television Arts (BAFTA), critics, or the smaller independent distributors that had been quite successful at earning nominations utilizing a screener strategy. The independents filed a lawsuit against the MPAA, and in December of 2003, a U.S. District Court judge lifted the ban. In 2004, a total of 54 screeners were sent out—100 percent of them on DVD. The swag was back!

The Cinea experiment

But a new battle was forming — on August 30, 2004, BAFTA agreed to deploy secure Cinea DVD players, in which encrypted DVDs only played on specific DVD players. This would make it extremely difficult to share DVD screeners, as screener recipients would have to loan both the disc and the Cinea to anyone else who wanted to watch. Discussions were also under way with studios and their partners for the upcoming 2005 awards season.

In 2005, Dolby agreed to spend $5 million for the manufacturing and distribution of these Cinea DVD players.

Unfortunately, the support for Cinea waned, limited to Walt Disney Studios for Academy screeners, and to BAFTA for 20th Century Fox and Warner Bros. Without cross-industry adoption, the Cinea format ended in 2007, leaving no option but the return to DVD screeners. Other than a digital streaming effort by Paramount Pictures in 2011 (in conjunction with Deluxe Digital), there have been no significant cohesive efforts to bring one to market.

The digital streaming era

DEG: The Digital Entertainment Group projects that 2016 will be the year digital streaming by consumers will bypass sales of Blu-Ray and DVD. Just as 2002 saw the milestone of DVD sales passing VHS sales to consumers become the tipping point for screeners, might 2016 be the year the industry begins to adopt a secure digital streaming platform? And what might such a solution look like?

Imagine a solution that mimics the gold standard for digital streaming of movies, Netflix. Let's call it "AwardsFlix" or something along those lines. Just like Netflix, it needs to be accessible on most consumer devices, such as Apple TV, Roku, PlayStation, Xbox, Google Chromecast, Amazon Fire Stick, Nintendo Wii, Smart TVs, and if desired, smart phones, tablets, Blu-Ray players, and set-top boxes.

AwardsFlix must be very easy to download as an app onto these devices (similar to the early days of Netflix). The first level of security would be in the on-boarding process, where an account would have to be created with a username and complex password. The user would also have to enter in their Academy or guild member account credentials as a second form of validation (a one time only process). For a higher degree of security, the platform could require a second factor authentication delivered by a text with the final login code.

Once in the AwardsFlix universe, one might encounter a splash page with the terms and conditions of viewing content, including an agreement to not share login credentials. copy, upload, etc. After agreement, the viewer would see a list of all the films available to them in a very simple to navigate and graphic rich environment (like Netflix).

After title selection, playback would begin, including a brief visible burn-in that could read something along the lines of "Licensed to [Recipient Name] for Private Use Only" along with the "Date, Time, and an IP Address". This would repeat intermittently throughout the playback. This unique and personalized burn-in should eliminate the temptation for sharing of credentials to friends, family, and co-workers.

Behind the scenes security

Most of the other security would be done behind the scenes, from encrypting the content to blocking of concurrent log-ins, digital rights management to prevent copying and moving content to other devices, expiring the content after the pre-determined availability window, preventing downloads and enforcing maximum view counts, etc.

Can a protocol like this completely eliminate piracy from awards screeners? No. But it will mitigate the risk dramatically, and the forensic tracking included in this platform would expedite investigation and prosecution.

The road to digital awards screeners starts now, and it needs the support from all sectors of the M&E industry, including studios, independents, guilds, Academy members, vendors, and technology partners. ■

COGNIZANT

Continued from Page 55

more sense. Design with the end users in mind via detailed requirements sessions and security workshops are routinely revisited. It is especially important to measure the volume and frequency of incidents over time to better define and evaluate security processes as your business divisions and teams evolve.

4. *Carefully aligning vendors/ platforms with your foundation*

Not too long ago, a studio exec shared with us, "It's easier to ask me what BI and analytics tool I don't have since the list is much shorter." A very crowded and fragmented market has developed over the ensuing years. The variety of vendors and strategic partners emerging in the analytics and business intelligence spaces can quickly become overwhelming. In building out your program, it's very important to have a clearly defined idea of what your expectations are for any new partner, using a variety of measurable and comparable categories (technology, support, cloud, training, etc.). A little collaboration can go a long way in driving efficiency and best practices. Nonetheless, having a rubric to measure vendors and strategic partners can prove invaluable when drafting requests for proposals, not to mention more direct meetings with technology partners at conferences and events. Other questions to ask a potential partner include:

- What is its product roadmap?
- Are there any talks of acquisition?
- Is it engaging with any other clients in your industry?

Remember, the best technology vendors are those that act as strategic partners.

5. *Avoiding rushing to the perfect end solution by starting small and iterating with pilot initiatives*

"Just find me the data that supports our decision." Sound familiar? It can be frustrating when the data the team has worked so hard to develop and understand does not return expected results to support current strategy. However, this is the point of a data strategy – to understand the reality of the business case, not to support a pre-determined conclusion. Data operates in an agile state of mind – it throws you curveballs that often lead to unimaginable insights. With that in mind, it is advantageous to operate in a way where data drives strategy. Start small – understand the information flowing in, create hypotheses, test, iterate, and with the new findings in hand, iterate again. Initially, most hypotheses you pose will lead to more questions. However, by applying a structured process to your line of investigation, those questions will lead to the answers that end up becoming the foundation of your analytical model. the nature of your audience before diving into more lengthy articles, blogs, and other media. These pilot test cases will lead your team to new and unexpected sources of truth, and often lead you to discard prized data sets for heretofore undiscovered sources of insight.

Conclusion

The data revolution brings substantial opportunity for film studios, broadcasters, and other media companies to understand their consumer base and develop campaigns that efficiently target their markets. While the final impact of big data on media remains to be seen, past experiences can serve to establish current and future best practices that define and advance a data-driven strategy. ■

ZASZOU

Continued from Page 40

Comcast pulled the plug on its $45.2 billion bid to take over Time Warner Cable due to strong opposition from Washington and consumers. However, Comcast recently introduced Stream, its own Internet TV service, offering a bundle of about 30 channels to Xfinity Internet customers for $15 per month. Usage of Stream will not count against monthly data caps—a compelling reason to opt for the new service. Comcast does have a competitive advantage—ownership of NBC Universal's cable channels, which include Bravo, CNBC, and USA. These channels must also be offered to rival service providers until 2018, but after that, Comcast could offer NBC and its cable networks exclusively.

AT&T has finalized its $48.5 billion merger with DirecTV, making it the largest pay TV provider. The takeover gives AT&T more market power and thus greater leverage to compete with Netflix for digital content rights from the studios.

The future — greater choice, richer content, and a blast from the past

Broadcast networks and movie theater multiplexes required large audiences for success, but thanks to Internet streaming services, niche content can flourish in an ever-fragmented market. Content providers are forced to be responsive through original content that appeals to diverse consumers. Some of the new shows are significant both artistically and critically, garnering awards that drive subscriber growth.

Networks still generate revenue from sports and will invest in event shows. More sitcoms, variety programs, and other performances will be televised without the safety net of delayed broadcast or editing (a la NBC's *Saturday Night Live)*. NBC decided to broadcast the show *Undateable* live every week, and Fox packed big fun into the musical *Grease Live*. The goal is to get people talking, and since these productions are live, the conversations happen the very next day.

The television business of the future may include subscriptions, targeted ad-support, or a hybrid of the two. The decreasing cost of production along with more accurate audience measurement systems may even allow half-hour sitcoms and hour-long dramas to be closer to their nominal running times. The pilot episode of the USA Network's cyber-thriller *Mr. Robot* was longer than the standard premiere—65 minutes rather than 44 minutes.

There is now so much high-quality television programming that it can be difficult for consumers to decide what to watch. Technology giants may soon take the next step of integrating linear streaming channels with on-demand services such as Netflix, Amazon, and Hulu, presenting viewers with customized viewing choices tailored to their interests. And in the next wave of great content, consumers can look forward to greater complexity of character and narrative, alongside talk shows, house hunting, and survival contests. ■

V2 *Continued from Page 30*

basic foundations have proven tremendously effective in building local relationships, and thus, viewership. First, distributors must provide an accurate local rating, building a relationship with the local state and authorities. Second, create audio dubs and localized edits by building relationships with local talent and post- production companies. And third, localize the full metadata of the title including the title, synopsis, and the artwork, to make the listing more appealing to the local audience.

The most difficult of these three foundations is dealing with local ratings. The process for obtaining an accurate local rating from each country is difficult to discern and complicated to manage. To help ease this process, retailers and content providers should work together on industry standards to ensure that local ratings are consistently assigned and uniform across storefronts. In building local relationships at multiple levels, content providers and retailers embrace a global mindset and increase cultural sensitivity, demonstrating respect for people from different backgrounds.

Naturally, some of these strategic plans require investment. But the payoff is clearly evident. According to MarketsandMarkets, the global OTT market is set to grow to $54 billion by 2019, up from $25 billion at the beginning of 2015. That's tremendous growth potential, but it will only be available to distributors who understand and respond to the needs of local consumers. Localizing isn't about focusing solely on blockbuster American releases, nor is it simply a matter of translation and subtitles. It's about personalizing the customer experience from region to region, with respect to local consumers' culture, tastes, and customs.

OTT providers must make their catalogs truly engaging from a local point of view. Only then will they succeed in creating a connection with consumers that translates into the kind of relationship that fosters brand loyalty and ongoing success. ■

3RDi *Continued from Page 19*

In comparison, from 2005 to 2009, only 18 VR companies were founded, *Venture Beat* said. It's not just start-ups, either. Many established content creators are devoting serious resources to virtual reality. Digital Domain, the effects studio behind the X-Men franchise and *Iron Man 3*, spent $17.3 million to acquire an 85 percent stake in Hong Kong's Post Production Company Limited, expressly for VR production. By some estimates, there are currently over 200 companies serving the virtual reality industry, valued at a total of $13 billion dollars. Industry advisors Digi-Capital estimate that by 2020, VR will generate $30 billion annually, with VR films accounting for $6 billion of that total.

With the technology's maturation, and the infrastructure in place and expanding, the question becomes, "What high quality content will be available?" Hollywood seems ready to fill the gap. Virtual reality experiences promoting theatrical releases are becoming the rule rather than the exception. This includes tentpole films such as Disney's *Star Wars: The Force Awakens - Jakku Spy* and Sony Pictures' *The Walk,* as well as smaller, more introspective films, such as The Weinstein Company's *Carol.* Although these marketing pieces demonstrate Hollywood's understanding of consumer desire for virtual reality, it is more telling to examine the studios' heavy investments in VR. Leading the charge is Twentieth Century Fox's Innovation Lab, where projects such as the ambitious *The Martian* VR Experience were born. The Walt Disney Company led the $66 million investment in Jaunt VR in September 2015. With any expenditure, Hollywood expects to see a return on its investment, and the industry is already turning towards more sophisticated, compelling narratives told in the virtual environment, to first create, and ultimately satisfy, consumer demand.

Virtual reality will not replace the cinematic experience, but joins film and television as a new outlet for visual storytelling. As is the case with all entertainment content, virtual reality pieces need to be written, planned, cast, shot, edited, post-produced, quality controlled, and distributed, opening up new opportunities in these industries. The singular experience that VR offers the consumer – to be fully immersed in a virtual world, offering a deeper emotional connection with a narrative experience – points toward continued and increasing demand for this emerging format. ■

DSB *Continued from Page 81*

amazing user experience has shifted. Disposable cloud infrastructure that can be spun up or down as users demand it is replacing complex formulas to predict when those same consumers would create the most load on a system. We need ten boxes that can do 50 percent less, so if two of them go down the user experience doesn't change.

Facebook, for example, is a company that ships new software twice a day to a billion people. Doing that is difficult, and doing it elegantly is extremely difficult. In addition, there are many companies, including those that play in the M&E arena, that are experiencing a violent shove to their business models. "Product-focused" is being forced into "service-based." That's the nature of the beast now, and overcoming the hurdles this presents can be daunting.

Once a cloud strategy is deployed it will need to be managed, maintained and grown. To be successful, this will require a totally different type of organization - and not just on the IT side. Companies need to apply a top-to-bottom rethinking of their thought processes, planning processes, and how goals are measured, executed and evaluated.

Holistic approach to the cloud

We've reached the philosophical tipping point where M&E is finally embracing the cloud because the benefits outweigh the fears. But recognizing "we have to do this" does not equal "we know how to do this."

It's never easy for companies to undertake a challenge that is outside their scope and focus, or for which they don't have in-house expertise. Thankfully, there is a robust and growing spectrum of businesses that specialize in cloud technology. What is critical, however, is to also understand the myriad ways the cloud can and will impact M&E specifically.

Moving from one platform to another is more than just a technical, nuts and bolts exercise. Operations, finance, and workflow are all impacted by a shift to a cloud environment as well. If you look at a problem from a purely tech or purely media standpoint it won't be obvious what the obstacles are – or will be – for any given solution. A comprehensive, holistic approach is what will lead to a successful, fully realized cloud strategy.

And it's in that regard that Hollywood's creative thinking and long history of innovation will need to influence not only its own evolution, but the cloud's as well. ■

PwC *Continued from Page 34*

free, without the usage counting against their high-speed data plans. Even as T-Mobile's adherence to the "no-throttling" component of net neutrality is being debated, video viewership among its customers is on the rise. According to one study conducted by the P3 Group, the average time T-Mobile customers spend with a single video app session increased from 15 percent to 50 percent depending on the particular app. According to that same study, Binge ON subscribers also recorded 5 percent to 10 percent more app sessions per day, per user.

Pay-TV's response to OTT's portability is TV Everywhere (TVE), which allows broadcast customers to access content from their network through Internet-based services—enabling them to view programming on multiple devices, both inside and outside the home, typically at no extra charge. While TVE can be credited with abating some churn, overall, adoption of TVE has been disappointing, owing to low overall awareness, a lackluster user experience, and authentication difficulties. Today, less than one in seven U.S. pay-TV households actively uses TVE.

Changing the channel on consumer experience

Rapidly evolving broadband infrastructures are enabling providers to deliver a smorgasbord of on-demand digital video content across multiple platforms and for lower fees. Competing on price and content type is becoming increasingly difficult with each network improvement and distribution deal. The next frontier for provider differentiation is the consumer's experience of video content discovery and interaction, as evidenced by the current set-top box debate. The Federal Communications Commission (FCC) is promoting a plan to provide pay-TV customers with more choice as to the supplier of their retail navigation devices, which could include companies like TiVo, Inc. and Alphabet Inc.'s Google Unit. Cable and media companies are challenging the plan, asserting that it may threaten consumer data privacy and disrupt channel positioning. Also in progress are efforts by Apple TV, Google Chromecast, and Amazon Firestick to make OTT viewing more engaging and manageable; but, with 400 original scripted series having aired during prime time in 2015, up from 371 in 2014, and presumed to increase in 2016, that task is easier said than done. The introduction of a user-centered interface can make content management easy and elegant. The development of smart recommendation engines, interactive programming guides, contextual advertising, and other services which place the consumer at the center of the experience have the potential to make watching video delightful and entertaining, and customers loyal and profitable. Innovative advancements in the consumer viewing experience will be the space to watch this year. ■

RIGHTSLINE *Continued from Page 76*

to every other bank in the U.S. without common standards, which seems fairly obvious, but less obviously, without a common clearing and processing system (the ACF) to ensure validity and transparency for those with authorization. The list of industry systems that manage transactions and procurement in this way is long and pedigreed, and it's ripe to be joined by a system for entertainment rights and avails.

The reality is that content owners need to update hundreds of consumer platforms on a near-real-time basis with complex availability and wholesale pricing information across a catalog of hundreds of thousands of titles and different types of content. This problem cannot be solved by cleaner spreadsheets. Only the adoption of a common, system-based protocol that leverages trending standards will be able to make sense of the volume and complexity of entertainment's growth horizon. Such a connected infrastructure would not only be able to take advantage and build upon the groundwork of EMA and EIDR, but it would take it to the next level, by providing push and pull API connectors to allow one content owner to seamlessly update hundreds of consumer platforms with the click of a publish button—all while honoring different pricing rules and territorial windows in accordance with each confidential deal.

The entertainment industry has long foregone data standards around rights, titles and pretty much everything else. It's time to tear a page out of other global, blue chip industry playbooks. Clearing platforms arise naturally when the big players agree: We can all increase our fortunes; we can grow our industry faster together by sharing these tools, these protocols, and these best practices.

To serve the bottom line, the industry needs to do a better job of connecting all the dots among all the parties, so a higher volume of higher fidelity data can flow in a fully frictionless way. And that's exactly what I spend my days doing. ■

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video rich building blocks into any application, with API access to powerful cognitive computing modules.

It is vital that you work with vendors that understand the idiosyncrasies and ecosystems surrounding each unique data type. But assuming you can organize and model data effectively, cognitive computing offers invaluable tools to derive context and intent and make improvements to supply chain processes and engagement.

Processes that traditionally happened in silos, like ad sales and traffic, can be radically improved by cognitive computing solutions that consolidate and provide visibility into multiple data sources, and feed measurable outcomes back in a closed loop to test and optimize decisions. Enterprises that do this well have the ability to revolutionize how video is distributed, custom curating around desired business outcomes.

By micro-segmenting audiences and learning from results, cognitive computing promises to use large samples of real world outcomes to prescribe actions as diverse as what marketing offer to make, what storyline or training to tailor, and what storage system or content delivery network to load balance across.

In each of these cases, cognitive computing can do what it does best: helping humans to see across seas of data and finding the next, most logical move. ■

VALUELABS *Continued from Page 49*

services present only in the Hollywood studio to a wider audience at a lower cost.

Fighting piracy: Platform could be used to track content at the point of creation and services such as digital watermarking could be proactively provided. A database of known threats and pirates, and metadata of pirated assets, could be managed as part of the platform and shared with platform users.

Secure by design: Multi-level security can be established on stored content since cloud service providers are compliant to multiple standards such as ISO 27001, PCI, SOC, FISMAA, and HIPAA. It is also possible to log and analyze activity at the API level.

Digital marketing: Technology intensive digital marketing could be driven from the same platform that creates content and superior customer experience; after all, marketing is just that.

Analytical insights: The platform captures consumer behavior, asset and workflow meta data in addition to user's social media activities from which useful analytical insights could be derived. The platform, when interfaced with other platforms that semantically enrich metadata, could yield deeper, intelligent insights.

Relevant for M&E business: The platform would be implemented as a new service delivery paradigm – not as a new technological solution. Technology stacks could be configured to match business needs and offered on a subscription basis.

No lock-in: As data of a user could be bundled and delivered as a package so that it can be imported into an alternate technology stack, should it exist.

Managed Services: The platform could have managed services provided by its builders. A team of experts could provide configuration, customization, extension, troubleshooting as agile services.

Summary

Along with content, the consumer experience is an equal pillar. A platform rooted in technology is visualized to consist of multiple service layers that could be implemented on a cloud. This digital dreams platform can be built in multiple steps establishing workflows for content creation, distribution and delivery, and extended to cover routine and innovative services that offer best-of-breed facilities. This strategy is based on modern-day, proven technology, and offers an excellent platform for the M&E industry to realize its dreams. ■

EIDR *Continued from Page 85*

gies are specifying EIDR as a standard content identifier: MPEG DASH, ATSC 3.0, adaptive bit-rate streaming, and the Interoperable Master Format among others.

Cable companies are in the midst of their IP transition. Comcast has introduced its X1 platform across much of its footprint, and its backbone delivery networks are already largely IP-based. IP standards in turn deliver on the long-promised ability to better target advertising in cable video-on-demand platforms. Led by Comcast, the new standard SCTE 214 shows how to use SCTE 35 for client-side signaling of ad insertion points.

Further, the DASH Industry Forum has subsequently adopted the guidelines regarding the use of SCTE 35. Not only is SCTE 35 called out as a signaling method by DASH-IF, but EIDR is explicitly named as the "preferred scheme" for content identification. And so EIDR is built into an architecture module that will feed into the Comcast-owned FreeWheel cross-platform ad delivery platform, leading to better targeting of ads and enabling better ratings measurement.

Better ad targeting and better ratings measurement are both among the business goals of parts of the next generation ATSC 3.0 standards as well. Alongside physical layer upgrades to support IP transport to both fixed and mobile devices and to provide for UHD services, ATSC 3.0 candidate standards reference EIDR in several areas.

ATSC 3.0's Watermark Payload document references EIDR in order to transmit program information within the physical layer stream. Verance and other EIDR member companies have already demonstrated proofs of concept embedding the binary version of EIDR, with its smaller payload, into an audio watermark. ATSC 3.0's Usage Reporting Standard allows for a ContentID element that may include an EIDR ID or an Ad-ID, EIDR's domain specific metadata partner.

Both of these elements support a recent joint release from ATSC and the Television Advertising Bureau of guidelines and best practices for the successful adoption and implementation of programmatic buying and selling of broadcast linear TV advertising. The document calls for a common, open application program interface (API) in the ad buying and selling ecosystems, and recommends, "the creative workflow, including registration with third party entities (such as Ad-ID or EIDR) and seller creative approval, should be supported by the API."

One final technology on the horizon is the SMPTE Interoperable File Format (IMF). IMF defines a single, interchangeable master file format, which can be used for flexible versioning and automation for downstream file transcoding. EIDR's Level 3 Manifestations category is likely the appropriate ID type for an IMF, and IMF adoption by Netflix and other EIDR members will likely make Level 3 the fastest growing EIDR ID type. By associating an EIDR Identifier with a "composition," the EIDR becomes available as the composition is transformed, allowing the work to be identified from its origin on to downstream distribution channels ranging from IPTV to mobile platforms to digital cinema.

And speaking of digital cinema brings us full circle back to the major Hollywood studios who drove the creation of EIDR for some very near term theatrical needs, but helped provide the basis for a flexible identifier to support the ever burgeoning array of business and technical vehicles to get creative content to customers. ■

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Already we are seeing the start of the great unbundling as networks that once swore they would only be available through an MSO now race to provide their signal "over-the-top" (OTT) direct to consumers. B2B businesses are diving headlong into the B2C space.

It does not take a crystal ball to see that, soon, programmers will sell shows a la carte. Yes, networks will resist it. In the end though, customers will balk at paying for an entire network when all they want is a single show. Networks will then brand and market their content just as any other consumer product, selling *Game of Thrones* the same way that Kellogg's hawks its latest cereal.

The one fillip is that, more than selling content, networks sell viewers' "eyeballs" to advertisers. Whoever is able to attract and package the best collection of eyeballs will be able to generate the highest revenues.

Earlier this year, we were able to demonstrate to a network that they could dramatically increase the efficacy of their promos by sniper-targeting their audience. We showed them how to focus exclusively on those whom we could convince to watch the show. This meant ignoring both the people who could never be convinced and those who already were planning to watch the promoted show. The result was that they achieved higher conversion, a larger more engaged audience, with 30 percent fewer promos.

This is just the beginning. Retail pioneer John Wanamaker decried famously that half his advertising dollars were wasted; he just did not know which half. Now we are entering a "brave new world" with the ability to anticipate and create desire for content, products, and viewers.

The real question is how companies will now act to take advantage of this opportunity. Based on our work, we recommend six steps:

1. *Appoint a data champion.* Too often data sits across, or even outside the organization in different silos, managed by people who are reluctant to share. Companies need someone empowered to marshal all the data, wherever it may reside.

2. *Understand the data.* Hiring a group of Ph.D.s will not get you results unless they are also expert in the business of M&E.

3. *Bring the data together.* Modern data techniques allow the interrelation of wildly different and often unstructured data. The first step is to get all the data in one place.

4. *Ask the right business questions.* There is a fine line between correlation and causation. (The popularity of organic food has grown over the past five years; so have obesity levels, yet no one would argue that organic food causes obesity.) Knowing what questions to ask means that the answers will be meaningful.

5. *Test for negative cases.* Knowing what not to do is often as, or more important than, knowing what to do. Knowing not to advertise shampoo to bald men saves money.

6. *Serve the customer.* With great insight comes great responsibility. By utilizing data properly, one can help one's customers have a deeper, richer, happier life. ■

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The overall success of any change management initiative is directly tied to how well the culture of the organization can evolve in line with the desired change.

DNA of your organization.

So how the heck do we do that? As it pertains to the rapidly evolving M&E industry, how does this method of analyzing our environment help you make decisions, manage risks, forecast, plan and move ahead? How can you foster a culture inside your organization that will be more capable of thriving in a VUCA world?

Culture

The overall success of any change management initiative is directly tied to how well the culture of the organization can evolve in line with the desired change.

Organizational leaders tend to think in terms of technical capabilities, infrastructure, P&L performance and market positioning. But while their heads are focused on those areas, many managers tend to forget how vitally important the culture of an organization, and the mindset of the individuals are to impacting their goals. Managing organizational culture is at the very core of managing change and impacting performance in all areas of your business. But the concept of culture, and how to manage it, is a source of confusion and mystification for many business leaders. Culture is such an interesting dichotomy in that it is intangible, subjective and immeasurable but at the same time is directly tied to measurable performance. How can we take an intangible concept like culture and translate that into tangible, measurable results?

Principles to impact cultural change

■ ***Promote cross-functionality as a mindset***

The only way to thrive in an environment where it's increasingly difficult to predict the future is to ensure that your teams are agile enough to change course and adapt quickly. Having agility is often seen as an infrastructural or procedural capability. Although there are certainly organizational considerations to being agile, it begins with ensuring that employees are empowered to think more creatively about how they can participate in solving the company's challenges. This has a significant cultural impact in that it enables individuals to have a much greater role in positive change management. The initial mindset of many employees is that they work within a very specific scope of responsibilities per the job description they were given when they were hired. Even though they may have skills to contribute in additional ways, they may not feel empowered to move outside of what they perceive as their specific role. Embolden them with a cross-functional mindset whereby they look for opportunities that might be outside their "scope". This helps the organization become much better prepared to evolve in step with shifting customer and market demands.

■ ***Think small***

Smaller companies have certain advantages over their larger competitors. We see so many examples of how the nimbleness, agility and the ability to evolve quickly all play leading roles in successful disruption and market share growth. Leaders who work inside large companies often find it more difficult to mobilize and execute their ideas as quickly. But most of the trouble is rooted in the habits and perspectives of some individuals who have worked inside this large corporate environment for a long time. Regardless of your company's size, anyone can adopt a small business mindset and gain some of the benefits. One effective way to do this is to ask your department heads to imagine their business unit as their own small company. Then encourage them to develop and execute their strategies in that frame of mind. Once you get them thinking this way, you will find the individuals in your organization better able to make decisions and execute more quickly and efficiently.

■ ***Always be new***

It's mind-boggling when we look back at our industry and recognize how much things have changed in such a short time. At this exponential rate of transformational change, we know that organizations that lack adaptability can quickly find themselves increasingly irrelevant to the current market. So an effective, and sometimes vital, exercise is to pretend you're starting a new company every 6 months. Look at your current business base (clients, revenues, etc.) and make your best guess at where you'll be in 6 months. Then decide exactly (and sometimes painfully) what you would ideally need to service your customers and how you would structure your "new" business. The insights gleaned from this exercise will guide your decisions on organizational structure, job descriptions, cost management and future revenue generation. It will help transform the culture and DNA of an organization to ensure that it can adapt and evolve at the same speed as the market.

■ ***Everyone knows everything***

When an executive or employee is navigating a company in our dynamically changing M&E environment, there is great value in consistently ensuring you are aware of these changes through colleagues and peers in real-time. There is no better way to keep your "finger on the pulse" of the industry than by participating in technology communities, trade organizations and industry events. By engaging and interacting with other thought leaders, you will understand the broader shifts that are taking place as well as the nuances of change that may strike specific strategic ideas that you then incorporate into your own initiatives. No single person or company knows everything but the power of collective knowledge and community collaboration can only assist us in making sense of this VUCA world. ■

	V Volatility	U Uncertainty	C Complexity	A Ambiguity
Wikipedia definition	*The nature and dynamics of change, and the nature and speed of change forces and change catalysts.*	*The lack of predictability, the prospects for surprise, and the sense of awareness and understanding of issues and events.*	*The multiplex of forces, the confounding of issues and the chaos and confusion that surround an organization.*	*The haziness of reality, the potential for misreads, and the mixed meanings of conditions; cause-and-effect confusion.*
As it applies to M&E	*Think about the rate at which new standards and formats are introduced.*	*Not many predicted the impacts of OTT binge-viewing or Multi-Channel Networks.*	*With so many stakeholders, formats, workflows and such a broad spectrum of consumer behaviors, this creates chaos and confusion for M&E professionals and ultimately consumers.*	*Think about how many really smart individuals and companies in our industry have misread the market and failed in recent years.*

Changing your company's culture to navigate in a VUCA world

By Seth Hallen, President, Hollywood Professional Association (HPA)

Abstract: The rate at which our industry evolves is accelerating. Building and managing a company in an ever-changing environment such as ours comes with massive challenges. But there are some key principles that business owners and managers can apply that simplify the process of building a business that enables adaptability and agility to meet these challenges.

There are so many metaphors to describe the complexity within our industry. It seems like there are an unlimited number of cloud references, all cleverly comparing remote servers to the weather. Also weather-related, "snowflakes" are used to describe the infinite number of different workflows, unique but all perfect in their own ways. When it comes to formats, we're in the Wild West, and when it gets real bad, we're in a "war." And it seems that a media and entertainment industry event isn't complete until someone cracks a joke about the over-abundance of acronyms that we use to both simplify and compartmentalize our world.

Here's another one: VUCA. But this one doesn't represent a format or a standard or an organization. It represents a perspective. It's a concept that the military began using in the 1990s when our armed forces were reinventing their strategies to meet the challenges of modern combat. VUCA stands for Volatility, Uncertainty, Complexity and Ambiguity. I am sure every M&E professional is immediately panged with the strong familiarity of these words.

There is a great deal of information about VUCA on the Web as it applies to many different industries so we won't cover it in much detail in this article, but here is an overview of how VUCA is defined and how it applies to the M&E industry.

An interesting approach to take when evaluating your market and building your strategy is to think in terms of VUCA. Rather than struggling to fight these realities or hoping they simply vanish one day, it is important instead to modify your organization to accept this environment and create adaptations that enable it to thrive. In the words of Leon Silverman, General Manager of Digital Studio at Walt Disney Studios, "It's time to get comfortable feeling uncomfortable". It's time to forget about everything we know about running a company in a predictable market and it's time to build adaptability into the

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