

Risks & Rewards



The opportunities before media and
entertainment are unprecedented.
So too are the threats.

OUR CHANGING INDUSTRY

The roadmap to media and entertainment's
future is paved with innovation

LOCALIZATION

Content localization is a worldwide, need-
it-now business. Here's how to keep pace

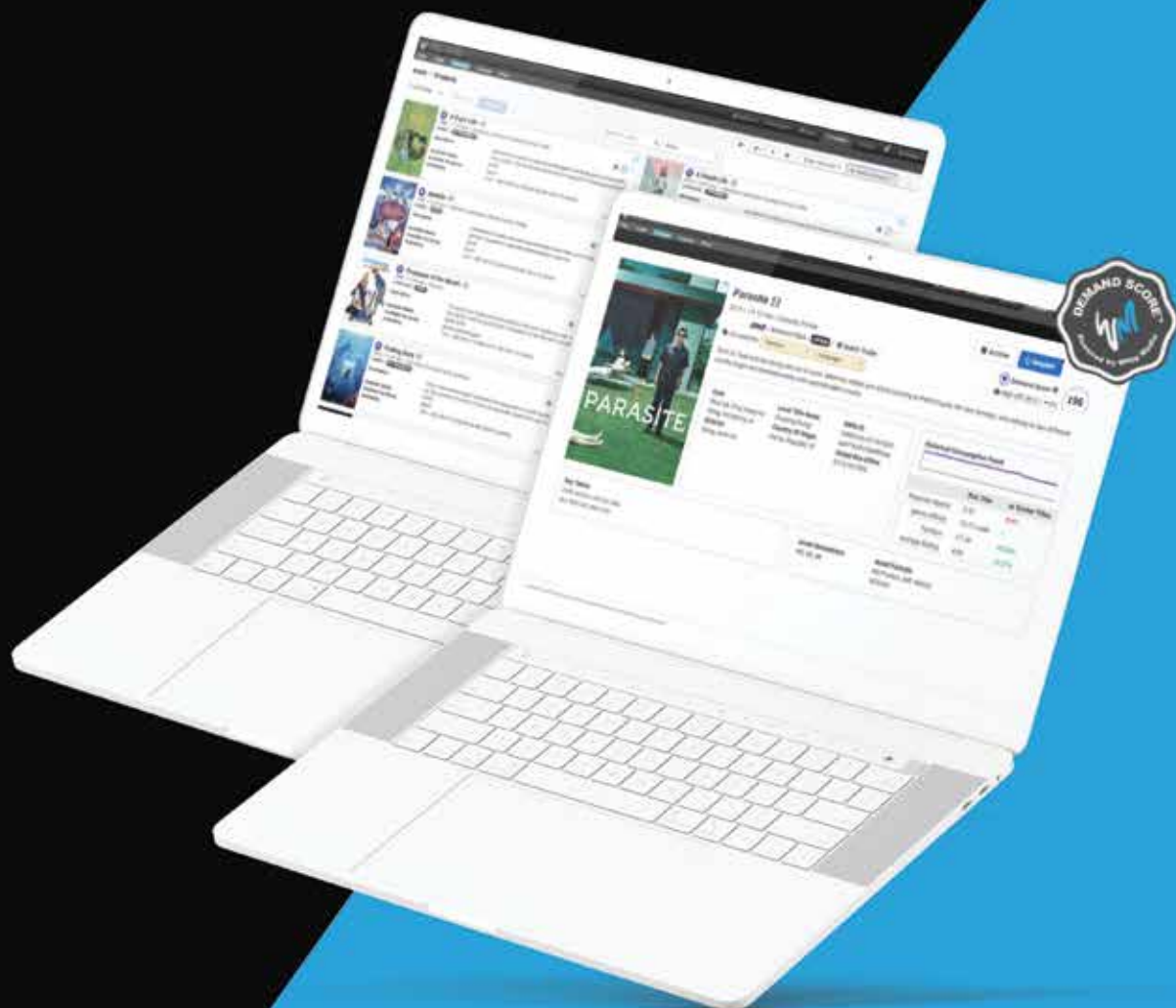
WORKFLOWS AND THE CLOUD

Cloud workflows are proving crucial for media
productions today

SMART CONTENT

It's a data-driven content reality, and all the
tools are there to realize success

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Risks & Rewards

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NEW HOLLYWOOD POST-COVID: 'HYBRID' AND STILL RUNNING

By Guy Finley, President, MESA



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The media and entertainment industry, along with MESA's communities surrounding the end-to-end supply chain, has faced innumerable challenges this last year and a half. These challenges aren't only about the pandemic, they are at the heart of the revolution happening across our global industry.

The transformation creating these challenges are primarily around virtual production, which reinvents the creation engine, and streaming and IP delivery, which transform delivery. And while the transformation candle burns at both ends it's easy to see why our technology communities across data, IT and security are critical to this evolution.

While the ongoing lockdowns and uncertainty will delay our estimates about when (or if) some of our old models will return, they are also driving a continuing interest in creating experiences that bridge the gap between physical and digital. And when you throw the metaverse on top of that mix, our evolution takes on a whole new meaning. We'll see a lot of the term "hybrid" in the next year.

Hybrid has traditionally meant "something we make by combining two different elements or the offspring of two plants or animals." Hybrid species, hybrid plants and hybrid vehicles are common language, while hybrid learning, which combines classroom with online, is now a prevalent term. The first "hybrid" studio successfully combined packaged media with streaming and when they started launching an entire series all at once it created "binge" viewing.

We're going to get a true sense of where our industry needs to be going with our consumers who will embrace hybrid. Where we are going is "New Hollywood" and with every new development we are getting closer to turning the page in our industry. The ultimate "hybrid" play for

WE'VE REALIZED DURING COVID-19 that it was our own antiquated business model and supply chain that has artificially limited the amount of production, the effectiveness of distribution and the feasibility of long-tail content monetization strategies.

our industry is finally getting started and is looking more and more like it won't ever go away.

We as an industry should take the best parts of our feature/episodic supply chain and our new data-driven, UX, customer journey and combine it with the best parts of the software development and video game creation supply chain, all to create a new, hybrid approach in how we make and distribute content. This isn't new, but the overhaul is long overdue. And there is so much we can learn from many other industries (especially as data, IT and security are NOT unique to media and entertainment) as we build our New Hollywood out to global scale. We've already started in a few key areas, and sometimes it can be as simple as agreeing on a collaborative workflow, one single field in a database or a set of controls.

We've realized during COVID-19 that it was our own antiquated business model and supply chain that has artificially limited the amount of production, the effectiveness of distribution and the feasibility of long-tail content monetization

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MESA is a community dedicated to shaping the media and entertainment industry's future. MESA's 150-plus members and content advisors collaborate to advance change management, new workflow solutions, and production/supply chain efficiencies. Launched in 2008 as Media & Entertainment Services Alliance, MESA produces quarterly events (virtual and in-person), daily email newsletters, webinars, and the M&E Journal on behalf of its members. MESA is the management company responsible for the community efforts of MESA Europe, Hollywood IT Society (HITS), Smart Content Council, and Women in Technology: Hollywood (WiTH), as well as the business operations of the Content Delivery & Security Association (CDSA), the Entertainment ID Registry (EIDR) and the WiTH Foundation.

For more information, visit mesaonline.org

CDSA RETURNS TO ITS ROOTS, BENEFITING ALL OF M&E

By Richard Atkinson, President, CDSA



Richard Atkinson is president of CDSA and his experience covers 15 years in classified defense and 22 years in M&E senior leadership positions, driving profound business revenue and change. ratkinson@cdaonline.org @CDSAonline

The Content Distribution & Security Association (CDSA) is shifting back to its core principles: community, leadership, and being the glue that brings people and solutions together around common issues.

We're all in with a hybrid participation approach. Every event or meeting will have a traditional physical aspect for those that can (or choose). But we have also added virtual participation through the Rendez-Vu metaverse tool, Zoom, and, of course, phone. Now you can network formally and casually in much the same ways that have been a core value of CDSA, from anywhere.

Now everyone can participate, at all levels. All types of leaders and companies including suppliers and partners can now join CDSA (not just content companies), and at all levels including joining the CDSA board, helping us determine CDSA's direction for the future. To make this easier, we have also created new membership tiers that include a level for smaller companies as well as one for multi-conglomerates/multi-nationals/multi-brands so that everyone can participate, but also so everyone can have a voice at the table.

We are also expanding our focus on leadership, and how we can facilitate the sharing of experiences, approaches, and perspectives across our membership, leveraging the fact that we have many senior leaders with significant insights that can help the next generation of leaders be better equipped to respond to the evolution of the world and our industry.

CDSA's topic-based working groups have always been a core focus, and this will continue with more intensity and breadth. Currently, we have multi-company teams working the security/business areas of production security, content licensing, and streaming devices. And we're adding new areas which our membership consid-

TODAY'S THREAT LANDSCAPE now spans content security, information security, and physical security disciplines. And that might mean three separate teams within a company, or all within one role.

ers high-priority issues, including virtual production, credential/account fraud, and the business value around security/risk management.

In terms of core security focus, the protection of "content" has been and continues to be our focus. But as content and the ways it is made and distributed has become digital, the threats have also changed and evolved. Today's threat landscape now spans content security, information security, and physical security disciplines. And that might mean three separate teams within a company, or all within one role. To address this, CDSA has added the Media and Entertainment Information Sharing and Analysis Center (ME-ISAC) as part of the association. Its deep focus on cyber and info-sec areas covers a general "digital security" focus for those that might be less-technical, but still need to understand the risks and ways to "think and lead" across this very complex landscape.

Today's "security frameworks" cover distinct areas but also have significant redundancy. Instead of creating yet another security framework for M&E, CDSA has created a "Rosetta Stone" offering that shows how each major industry framework (Trusted Partner Network, Cloud Security Alliance, Open Web Application Security

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DO YOU KNOW YOUR AUDIENCE?



Captain Cloud: Data Danger

Superhero movie that was released
Spring 2021 exclusively to streaming
platforms.

Total Production Cost

\$150.4 mil

Total Streaming Views

32 mil

Average Quantity of
Ads Watched

3.4

Average Duration of
Streaming

84 minutes

Audience Gender
Identity



Audience Age
Average

25-35

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BRINGING DATA INDUSTRY STANDARDS TO THE LAND OF MAKE BELIEVE

By Lisa Griffin, Executive Director,
Sean Tajkowski, Technical Director,
and Eric Rigney, VP, MEDCA

The idea behind the newly created Media & Entertainment Data Center Alliance (MEDCA) can be traced to Sean Tajkowski. Decades of experience building facilities to support various media and entertainment operations demonstrated to him a frequent gap between Information technology standards and media and entertainment's execution of data center infrastructure.

To support its data-centric IT processes and operations, M&E often implemented audio-video standards. This created costly performance issues and inhibited adoption of new technologies to meet marketplace demands. Tajkowski wondered how the financial and operational importance of data industry infrastructure standards, on all its levels, from architectural technical review to cable pathways, might be successfully introduced to everyone involved in the M&E decision-making process. The recent explosion in expensive smart stage construction, with its multiple arrays of data-centric processes, as well as the impending future of edge data centers and AI, inspired Tajkowski to act now to link the two communities, IT and M&E.

Tajkowski first reached out to the IT infrastructure industry associations and key-stakeholders, successful in building the data-centric operations of banking, U.S. Department of Defense, and big-data companies

A PANDEMIC FORCED M&E to adopt pre-existing virtual production workflows. The goal of MEDCA is to promote, encourage, and educate M&E to adopt data-centric infrastructure standards capable of not only withstanding the coming tsunami of data processing demands but thrive within it.

like Google, Amazon, Facebook, and Microsoft. They were excited to get involved. One down, one to go. To engage M&E, Tajkowski reached out to M&E's master technology alliance builder, Guy Finley, co-creator of associations such as MESA, HITS, CDSA and others. Together they co-founded MEDCA. In short time, along with Lisa Griffin and Eric Rigney, they've assembled, and continue to attract, a who's who of data center infrastructure experts, pulling from infrastructural educational experts, manufacturers, service providers, and M&E professionals willing to share their knowledge with M&E executives, operational managers, and



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Eric Rigney is VP of MEDCA. He is the former VP of post service operations for Sony Pictures, spending 20-plus years with the studio. He is currently with USC's Entertainment Technology Center, studying sound reflection mitigation techniques within xR LED stages. eric.rigney@medcaonline.org

technical designers/advisors, not only how to build a proper infrastructure, but why it's important to want to build it in the first place.

It's important to realize that MEDCA does not seek to create standards. Nor does it expect M&E operations to read a 5000-page standards and practices document. Instead, MEDCA proposes to survey and advocate for existing standards from architecture to IT, to electric, to monitoring, to HVAC, to fire, and others, parsing from within them the data center elements that pertain specifically to M&E uses. It is equally important to note that the audio-video infrastructure of SMPTE, ASC, AES/EBU does not provide nor advocate data center infrastructure standards. Telecommunications Industry Association, International Organization of Standardization, National Electrical Code, Uptime Institute, and National Fire Protection Association do. MEDCA plans to develop a certification program of installers and installations.

What will it take to get M&E to adopt pre-existing data center infrastructure standards? A tsunami of data and wireless operations perhaps? It took an actual

tsunami in Japan to force M&E to adopt pre-existing file-based workflows. A pandemic forced M&E to adopt pre-existing virtual production workflows. The goal of MEDCA is to promote, encourage, and educate M&E to adopt data-centric infrastructure standards capable of not only withstanding the coming tsunami of data processing demands, but thrive within it. A well-constructed infrastructure costs the same as a poorly constructed one. With MEDCA's help, M&E operations will come to realize this.

A one-size-fits-all approach, MEDCA educational efforts will support multiple operational levels, from executive awareness to technical design and execution, benefiting larger studios, smaller boutique production facilities, and all sizes in between.

Ultimately, Tajkowski and Finley are building an M&E community service via a new industry alliance. MEDCA operates as a non-profit corporation led by a board of directors composed of both key IT/big tech/telecommunication service and product providers as well as production/postproduction service and product professionals. MEDCA is managed through MESA. ■

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EIDR'S NEXT CHAPTER

By Hollie Choi, Executive Director, Entertainment ID Registry



Hollie Choi is the executive director of the Entertainment ID Registry (EIDR). During her 15-plus years in media and entertainment she's become an expert in supply chain automation, metadata governance and workflows, and digital and media asset management systems. hchoi@eidr.org [@eidrdotorg](https://twitter.com/eidrdotorg).

In mid-2021, I was deeply honored to be offered the opportunity to lead EIDR as its executive director. I've always respected EIDR as an institution and as a platform, with it being recognized as the gold standard for media identifiers.

Taking over the reins, I found myself faced with the challenge of building on what has already been done, with the understanding that nothing about EIDR is not broken, that nothing about the organization needs to be replaced or reimagined. What do you get for the registry that has everything?

I thought of a scene in my favorite movie, Apollo 13, the 1995 masterpiece from Universal Pictures. Spoiler alert: In one of many pivotal scenes, the team on the ground is tasked with making a square oxygen filter fit into the round opening of a different air filtration system, using only what is available on the disabled spacecraft. The astronauts will succumb to carbon dioxide poisoning should the NASA team fail. The task was clear. The stakes were high. Tension mounted. The pieces were all on the table. Just add creativity and determination. The problem was solved in the nick of time and Apollo 13 averted catastrophe.

EIDR isn't an oxygen filter, and we probably can't suffocate without it. But it is a vital building block for our industry. EIDR was created by the industry for the industry. It works, and some of the biggest supply chains in the media and entertainment world have been built using it as a cornerstone.

Yet, despite EIDR's clear and well-established benefits, some in our industry still haven't embraced it. We have all the pieces. They fit. We're creative and determined. So what's missing?

It turns out, it's information. I made some calls and asked a single question: Can you tell me why your company has not em-

EIDR ISN'T AN OXYGEN FILTER, and we probably can't suffocate without it. But it is a vital building block for our industry. EIDR was created by the industry for the industry.

braced EIDR as its unique identifier? Three themes emerged in the answers I heard:

- EIDR's registration process is too manual.
- Organizations have merged with another company (or two) and now have multiple systems that do the same thing. They're waiting until they consolidate systems.
- The terminology needs updating to better support streaming and OTT use cases.

That third insight is just the type of feedback EIDR needs, providing us a clear opportunity to improve. Some of EIDR's power users are now working together to identify missing terms, terms that will be added once consensus is reached.

Regarding the first two items: EIDR has APIs and a software development kit that can be leveraged to automate the interactions between registering systems and the EIDR registry. There's nothing preventing EIDR registration from being done by more than one system. Your system can read, write, edit records with us regardless. In fact, existing EIDR APIs are shared between 70 companies and their many systems, with no collisions. If we can share, so can you!

And there are several ways to prevent

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Cloud & SaaS application security assurance
that systems have been correctly configured,
hardened and are being operated securely



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The Americas, Europe & Asia-Pacific

Methodology

Our cloud & application security assessments are designed to ensure that cloud security best practices are being followed, providing assurance to you and your customers that you have the correct security posture in place. Our controls matrix, supported by content owners and the trade bodies, aggregates the CIS Benchmarks for cloud provider security best practices, from which we conduct the assessments.

A detailed scoping call is held to understand the specifics of your cloud environment and the tailored assessment is focused on identifying potential vulnerabilities which you can then remediate. This is supported by configuration vulnerability scanning to detect misconfiguration and a threat assessment to test for vulnerabilities.

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Case Studies

JELLYFISH PICUTRES

Jeremy Smith CTO

"Convergent Risks did a great job in walking us through the entire audit process...When looking to ensure that all compliance requirements are being met (from traditional on-prem or cloud deployments), we found Convergent Risks to be an excellent partner to work with."

ftrack

Magnus Eklöv CTO

"We chose Convergent because they know the creative industry, its security challenges, and offered a new dimension into the security review, going beyond the platform and cloud. We found their comprehensive evaluation as a valuable tool for our business going forward."



THE SECRET TO AVOIDING DATA FATIGUE

By Mary Yurkovic, Director, Smart Content Council, MESA, and
Matt Turner, Strategic Advisor, Technologist



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In many organizations there's an overwhelming amount of data and yet no clear means to take control of it at scale. This is still happening in more organizations than it should, even in some of the siloed verticals of media and entertainment organizations that should be more on top of their data.

There are ways to stop this data insanity, but before we start to discuss solutions, let's get a better understanding of the data problem, and look at the data challenges on the macro level.

One of the key problems with too much data is there's a lack of understanding of making sense of what exactly the data is. And to understand what the data is there needs to be skilled knowledge professionals to help tame the data. Some organizations have what we can call data stewards, the subject matter experts of the data specific to their area in the organization. They're constantly being challenged by an ever-increasing volume of data, and often lack guidance into how to prioritize curation and data documentation efforts. Oftentimes, data stewards are challenged with where to start and what to prioritize.

The skilled data scientists and analysts, who analyze and interpret complex digital data, face challenges as well. These data specialists can often spend hours searching for the data they need, and often must wait for their technology team to provide them with the right access. Even after access is granted, they're forced to spend time ensuring the data is fit for their purpose. All of this hurts their ability to make faster, better-informed decisions with ease.

So how do we help these professionals and the challenges they face? Enter data governance, the set of processes, functions, policies, standards, and measurements that

WE KNOW THAT PRODUCTION schedules are kicking back into high gear — now is the time to walk into the next few months with our eyes wide open and look for ways to tie our creative practices to our business practices.

guarantee the effective and efficient use of information, with the sole purpose of helping companies achieve their objectives to satisfy their client and make a profit.

Data governance is essential as companies face pressure to comply with numerous regulations, such as the General Data Protection Regulation (GDPR), Health Insurance Portability and Accountability Act (HIPAA), Sarbanes-Oxley Act (SOX), and California Consumer Privacy Act (CCPA). However, the challenge is even messier. Architectural needs further complicate their ability to comply. Data growth, limited employees or employee effort, data silos and their various forms of legacy vs modern, hybrid vs cloud, and multiple tools, all only add to the challenge.

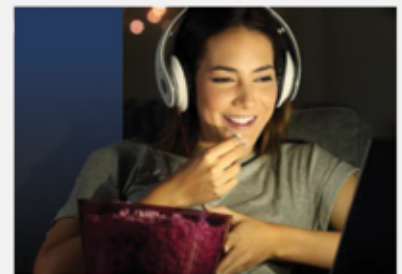
While it may not be an easy journey, undertaking a modern approach to data governance proves critical for organizations looking to scale their digital businesses. It's important they balance dual objectives of risk mitigation and rapid growth. By pursuing a data transformation, they can help manage growth in data and cost.

So how is data governance implemented? Like any type of good governance

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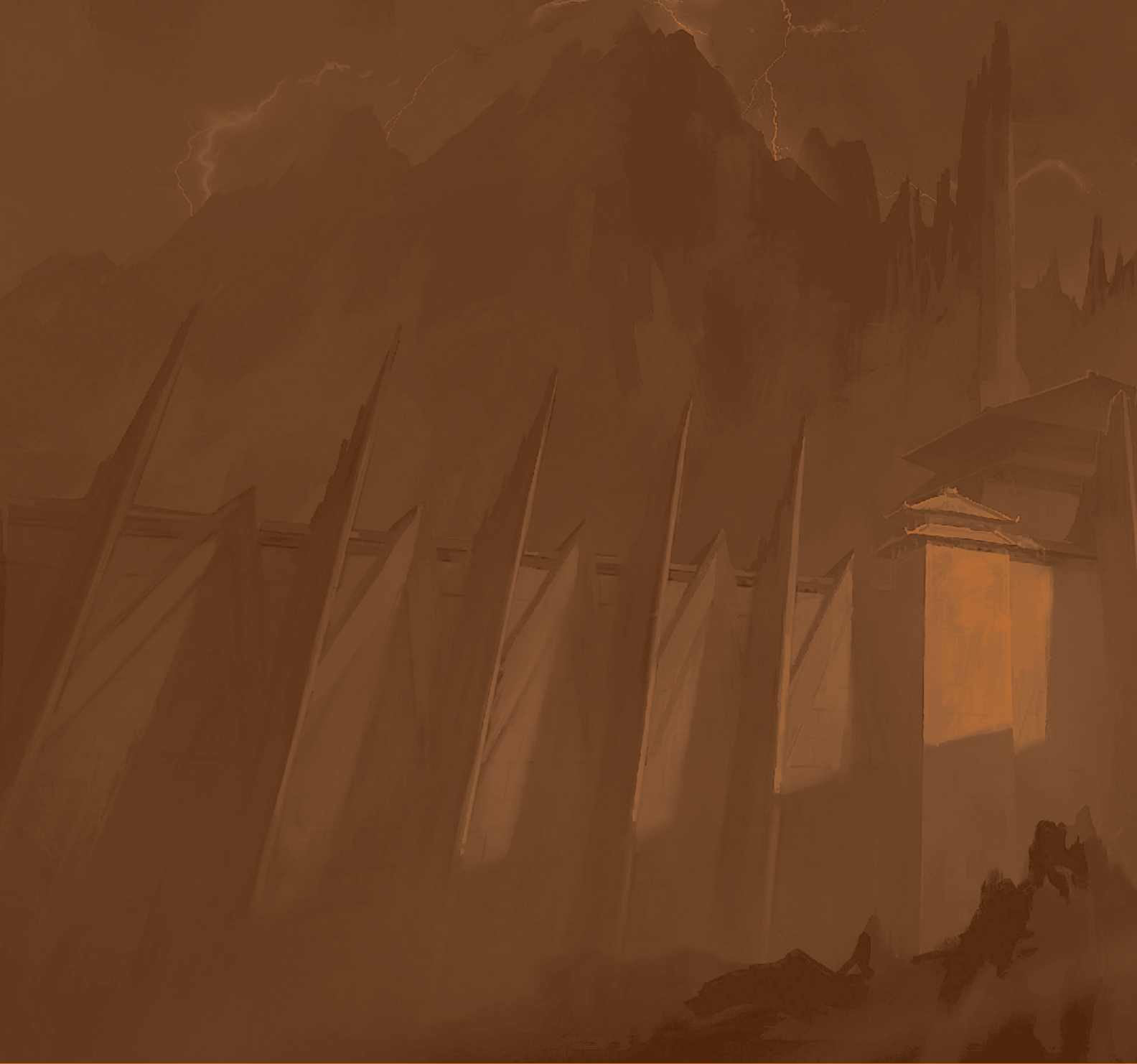
Simplify access to insights from multi-channel data to drive informed, proactive decision-making.



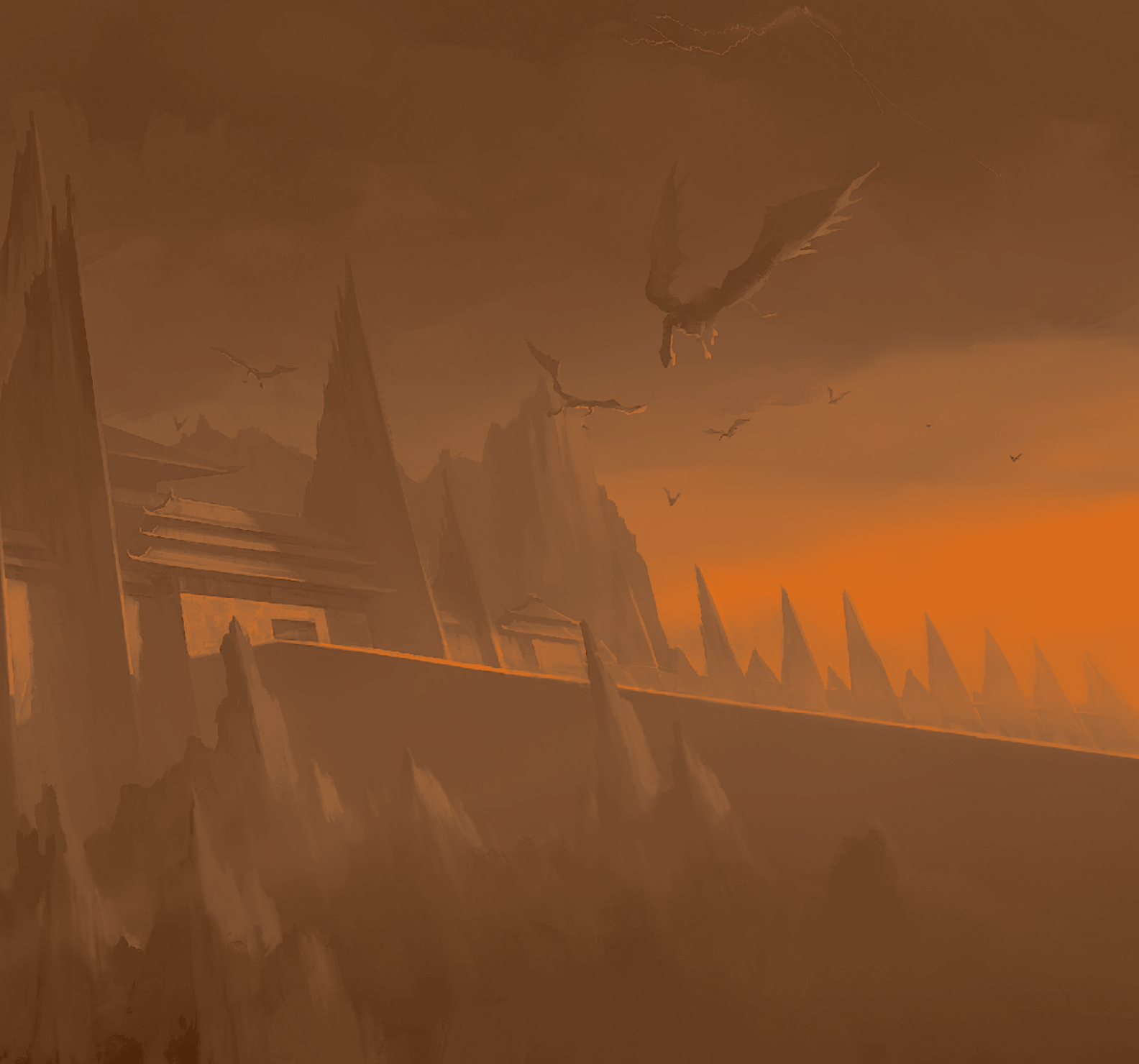
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OUR CHANGING INDUSTRY



Technological innovation has always resulted in rapid changes to our industry. Now we know M&E can quickly adapt its business to worldwide societal shifts as well. An accelerated move to a streaming-first distribution model, rapid acceptance of remote working and the tools needed to make it happen, understanding and making fast use of the data coming from unprecedented consumer viewing data, all have proved transformative. No doubt our industry has changed, permanently. And accepting that we're not done changing yet will prove to be an advantage.

SKATING TO WHERE THE PUCK IS GOING TO BE

The effects of the pandemic on the M&E landscape and what it means for the future of entertainment contracts



ABSTRACT: The COVID-19 pandemic has accelerated a move to immediate release to VOD in the entertainment industry. This distribution model shift, in addition to some high-profile lawsuits, has given a glimpse into where talent compensation is headed, and insight into the methods that will be required to manage it.

By Jason Kassin, CEO, FilmTrack

2020 was one of those rare times in history that seemed to divide our experience into “life before” and “life after.” The pandemic has not only altered the way we interact, the way we work, the way we learn, and the way we shop, but also the way we access entertainment and consume media. Although some of these changes were completely unexpected, others had been set in motion long before most of us had ever even heard the term “coronavirus,” but were significantly accelerated by the pandemic.

Hockey legend Wayne Gretzky famously said: “I skate to where the puck is going to be, not to where it has been.” In the media and entertainment world, we all know where the puck has been, and prior to 2020, it was no secret where the puck was headed. On-demand and streaming content had been steadily growing in popularity for

quite some time and were clearly the next evolutionary step in entertainment consumption, but what none of us could have anticipated was just how fast the puck would get there. The pandemic provided all the force and acceleration of a famous Gretzky slap shot, sending the puck to the other end of the rink in the blink of an eye. Where we were once on pace to meet the puck there, we were now left chasing, even racing to catch up.

According to a study by Conviva, time spent streaming jumped 44 percent between Q4 2019 and Q4 2020, with smart TVs seeing a whopping 157 percent increase. During that same time, Netflix added 36 million new subscribers while new kid on the block Disney+ came sprinting out of the gate to amass 116 million subscribers in its first year during the pandemic. Consumers were turning to the “big screen” in the living room over the “silver screen” of the movie theater at breakneck pace, and VOD services began stomping the gas pedal to ramp up and push out original content, often favoring episodic content over feature films. A-list talent across the board from actors, directors, and producers to writers, production crews, and editors began migrating in droves to episodic projects created for subscription-based services. And just like that, the distribution model was completely turned on its head.

Not only did we see new content being released immediately to VOD, but we also saw feature films originally slated for theatrical release make sharp U-turns and go straight to VOD. This unprecedented move was catalyzed by rapidly shifting consumer behavior brought on by social distancing protocols during the pandemic. But as we’ve seen through a number of high-profile lawsuits that have emerged in the wake of this shift, talent contracts that were signed pre-pandemic were not constructed for the unexpected landscape that was about to emerge practically overnight. Talent compensation under those deals was largely tied to box office numbers, so what happens when the box office gets booted for a VOD service? Well, there we have the rub.

Can a deal that was made under one set of circumstances but applied under a completely new set of circumstances be upheld in good faith? Should talent take a pay cut simply because the audience is sitting on a couch rather than in a theater seat? This is the war being fought on the fresh dirt of the newest entertainment battlefield, one that will no doubt shape talent contracts from now on.

WHERE'S THE PUCK GOING FROM HERE?

One thing we know for sure is that typical contracts are going to become exponentially more complex simply by the nature of what they will need to encompass. As revenue streams become more sprawling and multifaceted in nature, all talent from actors and directors to writers and producers will need to be compensated in a

WE NOW LIVE IN A TIME when the industry has been able to gather and leverage massive amounts of data to understand consumers better, and that data can just as easily be leveraged to ensure that contributors are being paid their fair share.

variety of ways. This will necessitate a fundamental need for transparency in contracts, which have historically been quite opaque when it comes to how the numbers are being calculated.

We now live in a time when the industry has been able to gather and leverage massive amounts of data to understand consumers better, and that data can just as easily be leveraged to ensure that contributors are being paid their fair share. This will require contract and royalty management systems that can handle complex calculations and are flexible in nature, because as we now well know, everything can change in an instant. The way talent gets paid will also be revolutionized as we’ve seen parallel acceleration in the world of FinTech. Not only do we now consume differently, but we also spend differently. We expect the ability to pay and be paid instantly with the click of a button, and the combination of modern contract systems with modern financial systems will allow all parties involved in a contract to do just that—safely and accurately.

While we may not know what the future holds when it comes to the pandemic still in our midst, we do know that in the world of media and entertainment, the puck is not going back to where it has been. Nor will the puck stand still. Wayne Gretzky is known as “The Great One,” not because he was the fastest or strongest player on the ice, but because he always seemed to be in the right place at the right time, ready to capitalize on every opportunity. Similarly, those who will rise to the top as the great ones of the post-pandemic entertainment industry, just like Gretzky, will be the ones who skate to where the puck is going to be, not to where it has been. ■



Jason Kassin is the CEO and co-founder of FilmTrack. Since the company's inception, he has evolved it into an extensive ecosystem that encompasses content creation, distribution, rights management, and monetization. He is responsible for orchestrating the strategic development of FilmTrack products and solutions. info@filmtrack.com @filmtrack

ROAD-MAPPING THE INDUSTRY'S DIGITAL FUTURE

Keeping up with consumers' high expectations means dedication to digital transformation



ABSTRACT: For the media and entertainment industry there's no going back: the changes triggered by COVID-19 are having a profound, transformational impact on our industry. How has the pandemic affected network alignment and cloud efficiencies; system re-architecture projects to meet new and growing demand; cybersecurity for privacy and content protection; decarbonization and other areas?

By Allan McLennan, Client Executive Partner, Head of Media and Entertainment, North America, Technology, Media, Telecom, Atos

As both the range and volume of consumed content increased dramatically during lockdowns, audience engagement evolved together with the accelerated shift to digital channels. At the same time, the constraints of social distancing and restrictions on travel amplified changes to work practices across content production and distribution.

Take the mass shift to internet protocol (IP), a key step in digitalization and the transfer of data. While this was already underway before the pandemic, a recent survey found that 71 percent of broadcasters have accelerated IP adoption. With increased use

of automated and templated workflows, IP-enabled digital supply chains are becoming mainstream.

Even before the pandemic, technological advances, combined with growing cost and competitive pressures, were driving more virtualized and remote ways of operating. Scripted content production, for instance, has been undergoing a transformation. Sophisticated CGI — thanks to the transition of gaming technologies into film — has once more put studio buildings front and center.

Adaptations since 2020 have served to underline what many in this industry already knew: you don't

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THE CASE FOR DIGITALIZATION has been won: fewer resources, less real estate, lower capex. Combine this with more flexibility and liquidity and the argument is compelling, especially because we can see that the quality of content and production is being maintained.

need a large crew for a great production. Outside broadcast teams were downsized, or partially replaced, with more intensive use of cloud-based centralized facilities, workflow efficiencies, and remote editing platforms. Live programming and sports adapted, with production evolving into distributed remote production by team members in multiple locations.

These necessities have served as proofs-of-concept for the efficient and optimized digital supply chains of the future. The case for digitalization has been won: fewer resources, less real estate, lower capex. Combine this with more flexibility and liquidity and the argument is compelling, especially because we can see that the quality of content and production is being maintained.

REARCHITECTING DIGITAL INFRASTRUCTURES

The challenge now for any media company is how to integrate what's happened and press forward with digital transformation. The pace of change won't let up: as normal life begins to return consumers' high expectations will keep growing and market dynamics will intensify and diversify.

Enabled by IP, the digital supply chain will see increased and intelligent automation and streamlined processes with the ability to scale up and down rapidly. A modern digital infrastructure is therefore essential, enabling production and distribution teams to work more flexibly in real time. As we have seen in our work with the BBC, for example, at its new broadcast center

in Cardiff, Wales (Europe's most connected and environmentally sustainable broadcasting center) a leading-edge media environment serves to streamline workflows and support mobile and connected ways of working.

Following an intense strategy, design and deployment at the new center, BBC Cymru Wales has the bandwidth, capacity and flexibility required to produce new forms of content and support ultra-high-definition production as new technologies emerge. A prime example of these new technologies and techniques is in action over in London, at BBC Studioworks, where Atos has been working with another mainstream UK broadcaster, ITV. Our Broadcast Network Control System+ (BNCS+) — a digital platform for controlling hybrid media content and infrastructures — was called into play, supporting changes to working practices, wider use of mobile devices, and any move to cloud.

DATA-DRIVEN CONSUMER ENGAGEMENT

Turning to consumer engagement, digital platforms, enabled by cloud together with artificial intelligence and machine learning capabilities, now offer our community new ways to reach audiences — and to measure the impacts of engagement strategies. The shift to digital and changing audience expectations have opened up new possibilities, particularly in the area of live content engagement. Consumers have themselves become contributors; harnessing their desire to participate in content key.

Continued on page 132



Allan McLennan is a C-suite, senior market realization executive in global advancement in the media and entertainment technology, hybrid multi-cloud and connected device revolution for more than 25 years. He is the head of technology, media, telecom and M&E North America for Atos. allan.mclennan@atos.net @Atos

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WHAT A DIFFERENCE A GLOBAL PANDEMIC MAKES



Going global means taking a more culturally aware approach

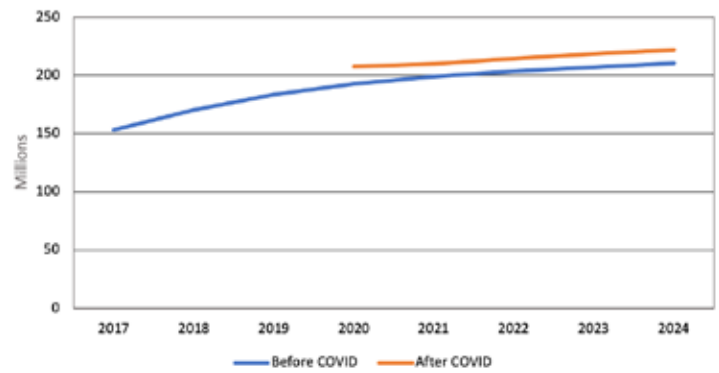
ABSTRACT: The COVID-19-accelerated shift from linear to streaming has ignited global distribution opportunities. M&E companies must navigate regulatory and cultural hurdles to release content in new, unfamiliar markets. Artificial intelligence and human-centered machine learning can bolster success by understanding human language, emotion, and the cultural context of content. We'll show how.

By Teresa Phillips, CEO, Co-Founder, Spherex

The COVID-19 pandemic that began in December 2019 was an accelerant of change in the media and entertainment (M&E) industry for which no one could have prepared. Unprecedented closures of live performance and movie theaters meant consumers had few available options for finding entertainment other than online. Forced to stay home, consumers turned away from broadcast linear platforms to streaming platforms to access thousands of movie and TV titles not available on traditional services. This resulted in new content distribution opportunities not expected for another five or more years.

The data company Statista forecast back in 2018 that by the end of 2021, large OTT and VOD platforms would have 188.3 million total subscribers in the U.S., which reflected a respectable 3.2 percent growth rate from the previous year. Thanks to COVID, streaming service subscriptions in the U.S. jumped 22 percent to nearly 230 million in 2020. That's a level that wasn't projected to be reached until 2025 or later. Worldwide, the story is the same. Global VOD subscriptions are projected to increase by 108 percent to 1.6 billion or more by 2026, up from 769.8 million in Q3 2020.

U.S. OTT/VOD Subscribers 2017-2022



The demands of today's remote and virtualized productions call for cloud storage and file management solutions — from set to finish — that guarantee security.

Consumers going online found themselves with a wide variety of platforms from which to choose. Fourteen years after Netflix launched the streaming industry, 600-plus OTT and multiple flavors of VOD platforms are available worldwide. Hardware products like Roku, Amazon Fire TV, and Google Chromecast provide access to the major streaming services while hosting hundreds of independent channels. Roku reportedly hosts 3,000 channels, and Amazon's Fire TV has more than 200 channels available. Thus, platforms are providing consumers with a proverbial candy store of content options.

These providers have plenty of content upon which to draw. According to IMDb, an average of 15,000 films and 270,000 TV episodes have been produced and released worldwide each year over the last decade. IMDb estimates the full content catalog available to providers consists of 438,554 movies and 5.2 million TV episodes from 216,017 TV series. Content providers universally offer only a fraction of available titles on their platforms. Amazon offers 14,600 movie titles in their U.S. catalog, which is just 3.3 percent of all titles currently available, and Netflix offers 3,500 movie titles in the US, which is 0.8 percent of all available titles. The demand or necessity for any one company to provide access to every title imaginable does not exist today.

Here's the challenge facing content creators and distributors in a post-COVID world: figuring out how to profitably release content to a global market of two billion consumers on over 600-plus distribution platforms, when providers are drawing upon the same content catalog of six million-plus titles, while trying to differentiate themselves in consumers' minds.

Decisions on where to release a title are typically made according to which markets provide the best audience and revenue opportunities. The total box office revenue from the top 20 box office markets worldwide in 2019, the last full year of theatrical releases before the pandemic closed theaters down, was \$37.2 billion. Comparatively, the global market for streaming video services was reported as \$43.7 billion in 2020 and is expected to grow at a CAGR of 18.1 percent to \$139.6 billion by 2027.

There are 7,139 known languages spoken in a world of 6.8 billion people. Of those, 4.1 billion speak at least one of the 23 most common languages used today. Sixteen of those are spoken in the top 20 box office markets. Keep in mind that these numbers do not include the total number of dialects (or accents) or secondary languages spoken in any given country, which can impact distribu-

tion decisions and localization efforts.

Presuming the title's original language is any one of them means it must be processed 15 times before international release in every one of the top 20 countries.

PREPARING CONTENT FOR RELEASE

Localization is the process of preparing content for international release by translating the spoken audio into the local language as either text subtitles (aka "subs") or spoken in a separate audio track ("dubs") or both so that the content can be released, and money made. "Culturalization" ensures the film is released with edits or deletions consistent with societal, legal, religious, or other cultural norms of the country so the content can earn an acceptable or targeted age rating, thus increasing the audience size and revenue, while avoiding negative press or legal jeopardy.

Localization is a very labor-intensive, human process. Only humans, fluent in the target language and who understand the cultural and contextual nuances, can begin to assess the script, listen to the dialogue, and perform the translation competently to tell the story accurately. Culturalization matters because some words or phrases do not translate well across borders, languages, or cultures, especially if slang or colloquialisms are used.

Until recently, the entire localization process consisted of choosing which market to enter and translating the script into subtitles or audio dubs. Today, due mainly to local content regulation, attention must be paid to the intended audience, the desired age-based rating, depiction



Teresa Phillips is co-founder and CEO of Spherex, a global data and technology company revolutionizing the future of entertainment. The company's technology enables media and entertainment companies to culturalize their content to reach the largest audience possible, increase revenue and ensure brand safety.
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HERE'S THE CHALLENGE facing content creators and distributors in a post-COVID world: figuring out how to profitably release content to a global market of two billion consumers on over 600-plus distribution platforms, when providers are drawing upon the same content catalog of six million-plus titles, while trying to differentiate themselves in consumers' minds.

Top 20 International Box Office Market

Country	Total Box Office (\$B)	Dominant Language
1. U.S./Canada	\$11.4	English
2. China	\$9.3	Mandarin
3. Japan	\$2.4	Japanese
4. South Korea	\$1.6	Korean
5. United Kingdom	\$1.6	English
6. France	\$1.6	French
7. India	\$1.6	Hindi
8. Germany	\$1.2	German
9. Mexico	\$1.0	Spanish
10. Russia	\$0.9	Russian
11. Australia	\$0.9	English
12. Italy	\$0.7	Italian
13. Spain	\$0.7	Spanish
14. Brazil	\$0.7	Portuguese
15. Taiwan	\$0.4	Mandarin
16. Netherlands	\$0.4	Dutch
17. Indonesia	\$0.4	Bahasa
18. Poland	\$0.3	Polish
19. U.A.E.	\$0.3	Arabic
20. Malaysia	\$0.3	Bahasa

Top 20 international box office markets and dominant languages, via Motion Picture Academy's '2019 Theme Report.'

of characters or historical events, sacred places or themes, and other cultural sensitivities.

It cannot be overstated that regulators are increasingly more restrictive of the type of content and stories they're willing to release in their countries. China, for example, prohibits content that, in their view, includes political criticism, deviancy or is a threat to "national security." Titles with LGBTQ+ scenes or characters are often banned in Russia, the Middle East, and several Asian and African countries. Content that regional groups may perceive as "blasphemous" is banned in India. These restrictions are becoming more, not less common, and knowing what they are in your target markets and preparing for them is a wise business decision.

Given the competitive challenges we've described,

having tools available that help speed content to market while reducing localization costs is most welcome. Artificial intelligence and machine learning are good at finding patterns, making rules-based recommendations, and automating repetitive business processes. Researchers have been working for years to make AI/ML recognize action and events in video properly. It is now possible, for example, for AI/ML to correctly identify and classify a knife used in a kitchen to make a meal compared to one used in a violent act. The benefit to content creators, post-production, and localization firms is significant because a trained AI engine could be used to flag dialogue, scenes, or actions requiring human review at any stage of production.

Spherex is investing heavily in developing AI/ML tools that know country-specific regulations and cultural sensitivities and can identify relevant compliance issues in advance, thus, shortening post-production time, reducing localization costs, and mitigating legal risks.

The pandemic has dramatically altered how and where consumers watch content. Never have more people had more access to more content in more ways anywhere in the world than they do today. Never have content creators had a more straightforward path to global markets than they do today. Yet, every title must still be individually assessed for linguistic, cultural and contextual compliance issues. The challenge we face when creating automated tools to do this work is first developing our own capacity for understanding the cultural realities consumers and regulators take for granted.

Only when we have it right ourselves will we be able to teach machines how to do it for us. Steps are being taken in the right direction, but we still have a long way to go. ■

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PRIORITIZING FOR M&E'S FUTURE



**How different
(and in what ways)
will the future of M&E look
when compared to a
pre-COVID Hollywood?**

ABSTRACT: In order to put people over process, you need the best of both. COVID-19 taught us that we not only can but must be flexible and change the landscape of the traditional workforce. Increased global partnership, education and training, and most importantly engaged communication will be key to success.

By Vincent Lavares, Director, Operations, IDC LA

In our ever-changing industry landscape, we have had to adapt in order to keep businesses thriving in a safe and healthy environment. Our industry leaders had to take a deeper dive into breaking free from industry traditions, pre-COVID business models and environments.

Working from home/remotely has surfaced new challenges and benefits to business leaders and their team members, but it has forced an industry wide pivot to further embrace and develop technology to facilitate adapting to the new world we live in as well innovate and create new workflows, software and hardware in order to ensure the success of our business units, projects and our people.

Our new world has opened doors to remote, global partnerships which take advantage of a “chasing-the-sun” work schedule. Around-the-clock coverage can be achieved with team members working in various time zones to cover a workload without needing overtime, late shifts and avoiding potential burnout. Traditional work schedules have been adjusted to accommodate peaks and valleys of workloads

through an employee’s workday. This, in turn, produced unexpected benefits.

MORE COVERAGE, PRODUCTIVITY AND WORK-LIFE BALANCE

Leveraging technology and remote work would cause a reduction in traditional business real estate footprints. With this reduction in cash outlay, more money and effort is being spent on ensuring connectivity and productivity is maintained (and in many ways) increased while

benefiting from lower cash output for physical space needed to provide physical workspaces for employees. By focusing on remote workflows, cloud solutions, and tools to facilitate off-prem workflows in a secure environment, we increase productivity, work-life balance and regain time to continue to innovate in order to set our sights on higher goals in our roadmaps.

What education and training are required for employees and executives at content wonders and service provider



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AMIDST ALL THESE CHANGES AND CHALLENGES, we needed to increase knowledge and practical application of remote collaboration. We learned how to better communicate and convey our ideas, feedback and instructions in a way that's digestible through a variety of channels in lieu of being in-person.

companies in navigating changes in the evolving ecosystem of connected supply chains in creation and distribution? Where will your partnerships (with customers, technology companies and industry groups) fit into your roadmap?

Evolution has been an underlying theme in our industry in our new world. The learning curves for safety protocols, remote workflows, meetings, social events and conducting day to day business had to be abbreviated in order to gain traction quickly adopted in order to keep our businesses alive. Amidst all these changes and challenges, we needed to increase knowledge and practical application of remote collaboration. We all had to learn how to better communicate and convey our ideas, feedback and instructions in a way that was digestible through a variety of channels in lieu of being in-person.

LEARNING WHAT'S NEEDED

Education and training for employees and executives in effective communication for in-person, virtual, and digital interactions is something that may not have been needed in a pre-COVID world. Or was it? Being an effective communicator is something that we read in a job description, but it is a key component of our day to day in media and entertainment. We want our audiences engaged. By this, they need to be listened to, captivated, connected and invested in our conversations. This level of engagement and connectivity ensures that we maintain the humanity in what we do in such a high-tech work environment.

Additional cybersecurity training for internal staff. Creating a video call strategy with clients to remain in touch and catch up to continue business opportunities and maintain sales growth.

And what matters the most to you and your partners going forward? Media and entertainment leveraged technology in new ways during the pandemic. Automation, remote sessions, workflows and processes, answer bots, forums, chatrooms, run books, online tutorials, education modules, marketplaces and seminars. The list goes on and on. Some key things to keep in mind during the midst of these amazing advancements are some of the main aspects of the very reason we are all in this

business in the first place. Connecting with an audience and providing meaningful communication with sound, imagery and word.

With all this said, perhaps we should think in terms of the following? Humanity over technology; people over process; strive to effectively communicate and equally important, effectively listen.

Often we hear buzz words or the term "full transparency" in our corporate communications. It's a good move in the right direction, but we move the needle even further. Do good business and uphold ethics and accountability for the products and services that are being provided. Conduct and run businesses with integrity and solidly built relationships. A healthy, safe, solid work community that provides support to the staff and promotes open communication. Continuously work to improve in keeping the company team members updated and aware of all wins and losses. We continue to come up with ideas to keep the staff engaged and inclusive whether working from home, remote hybrid or in office in order to maintain a strong feeling of community. We do the same with clients via email with more personalized status updates on wins and on social media for a broader outreach.

GOING FORWARD

Our industry has changed from the traditional workflows of the not-too-distant past. Film workflows to tape workflows to digital workflows. Today we have remote production, physical production, remote postproduction, virtual writing rooms, virtual sets and virtual happy hours. Some, if not all, of the aforementioned may become the new normal regardless of a pandemic.

We as an industry have learned, embraced and innovated new technologies, techniques and communication in order to continue to thrive in a challenging world, but it has also opened doors, broadened horizons, expanded and developed new and exciting global partnerships.

One day the masks will come off and COVID-19 will live on as a cautionary tale and learning lesson for us all, but we as an industry have grown, rose to challenges in order to continue creating, entertaining and engaging the masses. ■



Vincent Lavares is the director of operations for IDC L.A. Throughout his career he has built data operations teams for well-known VFX, postproduction companies and studios and has been at the forefront of the transition from film and tape to file-based workflows vincent.lavares@idc-la.com @VLavares

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INNOVATION REMIX

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on what's come before

ABSTRACT: Innovation has reinvented the M&E landscape in the past decade and will continue to be a driving force in the future. We all know what good innovation looks like when we see it, but where does it start? Slalom is laying the groundwork for the roadmap to M&E's future with the launch of its Innovation Lab, where leaders will shape the future with cutting edge technology and ideas.

By Erika Nolting Young, Senior Principal, Slalom Strategy

"Innovate or die, and there's no innovation if you operate out of fear of the new or untested," writes Bob Iger, former CEO of The Walt Disney Co. in his recently published book, "The Ride of a Lifetime: Lessons Learned from 15 Years as CEO of the Walt Disney Company." Myriad examples of this are touted across the internet, such as Tower Records, Blockbuster, Nokia, and Myspace. Innovation is essential, but how do you get started? Where do creativity and new ideas come from?

Kirby Ferguson, a Canadian filmmaker, writer and speaker, said he believes that innovation and creativity come from remixing ideas we've been exposed to before. In his 2012 TED talk at TED Global he explained: "... 'The Grey Album' is a remix. It is new media created from old media. It was made using these three techniques: copy, transform and combine. It's how you remix. You take existing songs, you chop them up, you transform the pieces, you

combine them back together again, and you've got a new song, but that new song is clearly comprised of old songs.

"But I think these aren't just the components of remixing. I think these are the basic elements of all creativity. I think everything is a remix, and I think this is a better way to conceive of creativity."

Related to this school of thought, David Cope, an American author, composer, and scientist, developed Experiments in Musical Intelligence (EMI), AI software to which a user can upload music for the system to decompose, analyze, look for patterns and reconstruct in new ways, without copying anything exactly as it was in the original compositions. He used EMI originally to overcome writer's block through experimentation with music and patterns to inspire new compositions.

Slalom is playing out this notion about where creativity and innovation stem from

EXPONENTIAL ADVANCEMENTS IN TECHNOLOGY have continually accelerated the rate of change in the media and entertainment industry. In turn, it's possible to graph and visualize how companies in the media ecosystem have emerged and grown faster over time aided by technology.

at its Innovation Lab in New York, which launched Oct. 28. The lab is 5G-capable to enable clients to test run use cases on a 5G network and experience the difference. At the lab, guests can tour scenes staged to illuminate the possibilities of human and machine relationships, total automation, and digital twins and explore multimedia and enterprise innovation concepts using audio, video, projection technology as well as industrial and commercial technologies. Facilitators aim to get visitors thinking about how the technologies on display, such as cameras, sensors, augmented and virtual reality headsets, robots, tablets, and holograms are changing human interactions and expectations and what it means for an industry or organization.

The lab offers tours of innovation at play around New York City, lab tours and workshops to help leaders visiting the lab with structuring ideas, prioritizing roadmaps, understanding the customer experience of the future, establishing alignment and more.

Some lab guests visit with a specific idea they are percolating — a new product, a desire to break into a new market or segment, new partnerships being considered, or a new capability they need to bring to bear. Others foresee looming disruption or changing customer expectations that necessitate change and innovation, but they're not sure how or where to get started or lack the innovation culture needed to pivot or grow into new areas. Everyone comes with a thirst for inspiration and a desire to build and shape a better future.

The Innovation Lab gives visitors absolute freedom to innovate, discover and challenge convention. Through Slalom's technology-agnostic approach built on a fundamental understanding of human behavior, visitors will push boundaries, break out of constrained thought patterns, and explore the questions, themes and technology that will shape the future of business and culture.

Technology has always been the backbone of the media and entertainment industry, from the cable, telecom and satellite systems that deliver content to homes across the U.S., to streaming media delivered via IP-enabled services like Netflix, to the cameras that



Innovation can result from previous advancements. New ideas can come from building on what's already working.

capture content, and the software used to edit, process, and distribute media — the industry thrives on technology. Exponential advancements in technology have continually accelerated the rate of change in the media and entertainment industry. In turn, it's possible to graph and visualize how companies in the media ecosystem have emerged and grown faster over time aided by technology. And, just as they mature and cement well-established processes and ways of working, new emerging technologies and nimble startup competitors necessitate change for survival, making the media and entertainment industry a poster child for innovation.

Many are focused on the awesome growth of social online gaming and virtual live events spurred by the pandemic. But what most people aren't thinking about widely yet is how many industries beyond media and entertainment discovered the power of video during

Continued on Page Continued on page 137



Erika Nolting Young is a leader in Slalom's global strategy team, which collaborates with Slalom's 40 markets, delivering strategy expertise, project leadership and perspective for a wide array of clients. erikany@slalom.com @Slalom

THE HOLE AT THE CENTER OF THE M&E INDUSTRY

Independent creators and small production companies are not being catered to, and that means missed opportunities

ABSTRACT: There is a simple problem with modern production technology and software: it's too often built for enterprise companies, leaving behind influencers, freelancers and small/mid-sized studios. Consequently, we're seeing influencers spearhead new technology and steer the industry based on what their followers enjoy. The M&E industry needs to adopt a bottom-up approach, where industry leaders empower independent creators with the right tools to expand their creative visions. Here we outline this argument and highlight a few trends and companies that are worth watching.

By Matt Cimaglia, Co-Founder, Alteon by Third Summit

Imagine you're an influencer on YouTube. Video is your entire life. You're making good money doing what you love and racking up hundreds of hours of footage every month. You edit your own videos, but you don't have professional experience. You're probably using iMovie, or maybe even YouTube's native editing tools.

Sooner or later, you'll reach a breaking point. You will max out your computer and hard drive space — then what? Where do you put those hundreds of hours of footage? Do you buy more drives and stack into ever-higher towers on a shelf in your bedroom? Do you start paying for a cloud storage platform? Do you just start erasing old content?

NOW, MULTIPLY THAT DILEMMA BY TENS OF MILLIONS OF PEOPLE

This is a fundamental problem for what's called the "creator economy," a new group comprising more than 50 million creatives — videographers, video editors, photographers, artists, gamers, journalists, producers, influencers and others

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— who, thanks to modern technology, are finally able to transform their passions into careers.

For the most part, these content creators are being overlooked by mainstream companies building tools for the media and entertainment industry. Meanwhile, companies that do target them are seeing a sharp rise in their user base. Consider Cameo, TikTok, Substack, Linktree and Ko-fi: all have sprung up in the last few years, catering exactly to these types of independent creators.

This has created a tug-of-war between the old tech giants and their niche competition. Neither side is clearly winning. Influencers on Instagram might never need to touch Photoshop, since Instagram regularly adds new native editing tools to its platform. This creates a symbiotic relationship: influencers grow thanks to Instagram's free tools, and Instagram quashes its competition (see: Snapchat) by adding new functionality.

The social media giants will not win every battle, however. Consider how YouTube's paid subscription model launched the same month as Patreon, back in May 2013. YouTube failed to crush its startup competitor; earlier in 2021, Patreon tripled its valuation to \$4 billion.

In this light, I believe technology companies in the media and entertainment industry are missing an enormous opportunity.

I've spent much time so far discussing the influencer market — and with good reason, since influencer marketing has ballooned from a \$1.7-billion economy in 2016 to one worth an estimated \$13.9 billion in 2021, according to Influencer Marketing Hub. As of 2019, 86 percent of Americans aged 13 to 38 were willing to try influencing, according to a Morning Consult poll. That's more than a trend: we're witnessing the birth of a new economy.

But the same dilemma applies to freelancers in the film and television industry. Startlingly few companies are developing tools for independent contractors to help them work more efficiently, organize their content more easily and collaborate more quickly. Consider companies in the media-management space, such as Reach Engine, which specifically targets enterprise corporations such as Disney, Fox and HBO, or Frame.io, which evolved from a tool for independent creators into an industry giant used by Google, Vice and Condé Nast, and which was acquired by Adobe for \$1.2 billion.

This is not a knock against Frame.io or Reach Engine —

STARTLINGLY FEW COMPANIES
are developing tools for independent contractors to help them work more efficiently, organize their content more easily and collaborate more quickly.

I've used and enjoyed both. There is certainly a strong argument for building software that world-class brands can buy and scale to operate more efficiently. But freelancers are the backbone of the production industry. They comprise the vast majority of people on any given set.

Moreover, the freelance market, like the influencer economy, is seeing enormous growth. Throughout 2020, Netflix alone was releasing 40 to 50 new original titles, or returning seasons, every single month. There is simply more content being created and consumed than ever before, and the majority of this content is being created by freelance cinematographers, editors and independent production companies.

Yet these independent creators and small production companies are left in purgatory.

The media and entertainment industry must adopt a bottom-up approach, where business leaders provide independent creators the right tools to expand their creative visions. New platforms — including my own, Alteon — are popping up to support creators directly by offering tools that help creators focus on creating. By designing products for people, rather than companies, we can solve many of the systemic problems bogging down the production industry, focusing on more intuitive cloud-based organization, frictionless access to assets and smoother remote workflows.

Video production will continue to rise for years to come. This is a good thing: it means creators are expressing themselves more, while audiences are engaging more deeply with people whose work they love. Creatives are making content and investing in tools that are available to them. But it is the role of leaders in the media and entertainment space to connect the dots between professional tools and a burgeoning economy of millions of creative minds. ■



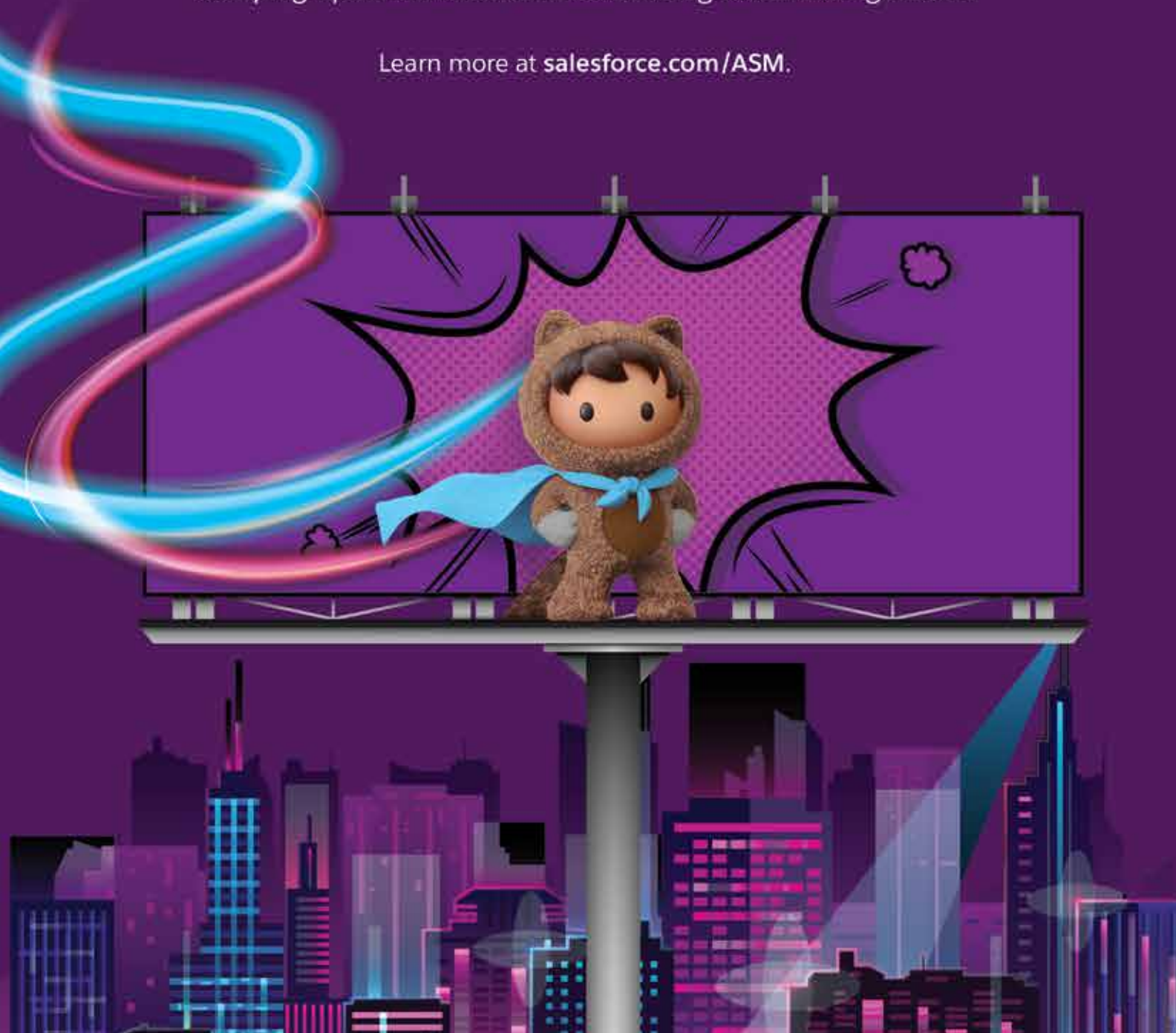
Matt Cimaglia is the co-founder of Alteon, an ecosystem for production professionals that simplifies cloud-based workflows, asset management and remote collaboration. He has spent more than 20 years as the head of Cimaglia Productions, an award-winning creative agency. michael.fraiman@thirdsummit.com @Alteon_io

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Risks & Rewards

IN A TIME OF RADICAL, UNPRECEDENTED TRANSFORMATION IN OUR INDUSTRY, THE VERY FIRST STEP IN M&E'S ANTI-PIRACY AND CYBERSECURITY EFFORTS REMAINS THE SAME: ADJUST



The collaboration benefits with digital pre- and post-production moving to the cloud. The convenience (and savings) associated with hybrid and fully remote workforces. The need for vendors to meet extraordinary distribution demands calling for more content for more services in more countries. There's plenty to like about how our industry operates today.

But these rapid changes have come with a host of new cybersecurity and piracy concerns. And our defenses may not be keeping pace.

The mass shift to remote work means worrying about employee home networks and the use of personal devices to do their jobs. The widespread adoption of cloud services and web-based applications means more concern around access to assets. And more access to more content on more streaming services also means more piracy for you to track and take down.



The piracy risks and cyber threats are evolving, expanding, and enormous. But with each new threat, the content protection and cybersecurity tools adjust and evolve in response.

To keep pace, your business must adjust as well.

SECURING M&E'S REMOTE WORK REALITY

A host of new cybersecurity concerns — along with both anticipated and unexpected benefits — have emerged



By Chris Tribbey, Editorial Director, MESA

In late 2021 a workplace survey from remote-access tech firm Teradici not only confirmed what the media and entertainment industry already knew, but put an exclamation point behind it: workforces en masse are splitting time between the office and home. And it's a permanent reality.

Ninety-nine percent of more than 8,000 respondents said their workplace will split time between the office and remote settings post-pandemic, and nearly 40 percent

said they expect half of their workforce to operate remotely at least twice a week going forward.

But with that convenience comes major security concerns around securing the hybrid workplace in 2022 and beyond, with endpoint security and data integrity both keeping CISOs up at night: ninety-eight percent of respondents said they are concerned about security and data integrity due to employees commuting with endpoint

BECAUSE WE KNOW CHANGE IS A CERTAINTY, we must be ready to adapt the way we will defend. That's why security matters: it's a business of constant evolution, adjusting to the ways we are attacked.

devices, with 90 percent of respondents reporting their companies are using a mix of employee- and corporate-owned devices. Only 10 percent of workers are predominantly using corporate-owned devices, and 74 percent of companies saying they expect more use of employee-owned devices to get their jobs done.

"The pandemic has caused a fundamental shift in how people work, and the 'office' will never be the same," said Ziad Lammam, global head of Teradici Product Management. "As a result of the enormous security concerns associated with unmanaged devices, as well as [bring your own device], organizations are changing how they think about securing their corporate assets. Expect to see companies move away from traditional VPNs to zero trust architectures to shore up their endpoints and protect their data."

Matthew Lane, CEO and co-founder of X Cyber Group, a cybersecurity intelligence and advisory firm, calls this "extension of a company's digital estate" the biggest challenge facing traditional security planning, which historically centered around prioritizing protection of a core network or set of processes, rather than the whole of the system from threats. "That's now been rendered almost entirely redundant," he said.

"Companies are having to both trust their employees, but at the same time recognize that previously novel risks are now a key potential threat: people's home networks and personal devices are in essence an extension of the corporate," Lane said. "Digital sprawl, where well-meaning employees set up workarounds and temporary solutions — especially virtual storage — become part of a firm's footprint, likely outside of the cybersecurity team's knowledge, and therefore protection."

A mid-2021 report "Remote Workflow Optimization Game Plan," jointly released by video workflow platform firm Shift and geolocation security specialist GeoComply, touched on this salient point around the adoption of services and platforms for remote workspaces: even if your home network is safe, workers are back on the go post-vaccine, and will take their devices to airports, coffee shops, hotels and more. To combat the threats presented by vulnerable public networks, your remote employees better be setting up virtual private networks (VPNs), look into geolocation-based security and location fraud detection, and work with cloud providers with file transfer security and watermarking features.

"Remote workflows open a huge opportunity for cyber theft and digital attacks, with an enormous amount of sensitive content in transit every day," the report read. "Recorded meetings, confidential legal documents, and pre-release video content are especially vulnerable. Features like watermarks and viewer reporting will deter those who are considering bad choices and make it easier to track down those who do."

Kurt Mueffelman, global COO and U.S. president of archTIS, which provides software solutions for secure collaboration of sensitive information, pointed to research showing that nearly 80 percent of companies see data leakage as the greatest potential threat to remote work. Yet many are still relying on user training and reactive behavior monitoring and perimeter-based technologies to protect them from the threat vector of trusted employees with legitimate access to applications and systems.

"While these technologies serve an important purpose, they don't proactively address data loss from simple human error and malicious users with legitimate access to

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*Chris Tribbey is the editorial director for MESA. An award-winning journalist, he's previously covered the media and entertainment industry for *Variety*, *The Hollywood Reporter*, *Home Media Magazine* and *Broadcasting & Cable*. chris.tribbey@mesaonline.org @CCTribbey*

ALIGNING CYBERSECURITY RISK WITH BUSINESS IMPERATIVES

The foundation of any successful security program is understanding what you are trying to protect

ABSTRACT: The C-suite can enable better risk management by socializing security professionals with the rest of the organization and supporting their understanding and appreciation of operations. Successful CISOs understand their company's business and can align the security program to enable business imperatives and enhance shareholder value. After all, a CISO must fundamentally understand the business they are entrusted with protecting in order to create a defensible plan to enhance security while combating excessive business risk.

**By Luke Tenery, Partner, and
Ross Rustici, Managing Director, StoneTurn**

The world in which multinational organizations operate today is fraught with complex and ever-evolving risks. However, just as an effective general counsel and/or chief compliance officer enables the business to seize opportunities while staying within the bounds of acceptable risk, a robust security program can reduce, shape, and mitigate the nature of threats but should not be expected to eliminate threats altogether, particularly cyber threats.

As SolarWinds correctly pointed out in its motion to dismiss litigation against its CEO and CISO resulting from a 2020 security breach: "Subjecting cyberattack victims, who never promised invulnerability to such crimes, to class action securities fraud claims would undermine the ... intent and fuel securities litigation in the wake of every cyberattack."

Cybersecurity, just like physical security and compliance programs, is about managing business risk. By definition then, a well-designed and implemented program is created with the expectation of some

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PREVENTION IS ALWAYS more cost effective than remediation in the long run.

losses. Determining an organization's specific risk appetite with regard to cybersecurity requires a close partnership between security and business leadership. Too often however, CISOs are unable to answer the below questions, which may explain why the average tenure of a CISO is just 18-24 months:

- What is the primary way which my company makes money?
- What are the core value propositions of the company's services or goods?
- What key assets are required to deliver those core value propositions?
- Where is the business attempting to expand, change, or adapt its core offering?
- What technology and programmatic elements will be required to enable those plans?

WHAT A SUCCESSFUL CISO SHOULD CONSIDER

The foundation of any successful security program is understanding what you are trying to protect. Once the CISO understands the business, the drivers, and the goals, they can then create a smart plan to reduce risk based on asset criticality.

Asset criticality is more than just the "crown jewels" or even the latest buzzwords of zero trust. It is about understanding how the business operates and how to protect the critical processes, which sometimes involve (but rarely starts and ends with) data. Once you understand the what, then you can start formulating the how.

While security fundamentals are a requirement, they do not always provide significant reduction in risk: organizations must patch, implement asset tracking, standardize configurations, and deploy technology that is

required by regulation or law. But these tactics are called fundamentals for a reason; these controls and measures are designed to create a base of security akin to installing a dead bolt on a glass door. Does it increase the level of effort required to break in? Yes. Does it add any significant impediment? No.

Once the fundamentals are implemented, the tailoring of security controls to business risk is what will make or break the security program. Think about your network in terms of the contours of the battlefield; IT security professionals should work to create impediments and areas of natural flow. The goal of implementation should be twofold:

1. Harden the key business processes/assets to the fullest extent possible
2. Understand and channel intrusions to more dispensable areas of the network

It is very rare that an intrusion uses only zero-day exploits for the full exploitation of a network. Building defenses around the assumption that even with the most hygienic regime, zero-days or human error could undermine the hardened perimeter, allows you to channel the adversary by creating paths of lesser resistance to areas where the security program can engage directly without impacting the core business.

Successful implementation has more to do with knowledge, planning, and exercises than technology. At this point, a program can build a highly functional security stack with almost all opensource tools. The technology spend should not be the focus of the plan or the justification; rather, the CISO must be able to explain how their

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Luke Tenery is a partner with StoneTurn, bringing nearly 20 years of experience helping leading organizations mitigate complex cybersecurity, data privacy and data protection risks. He applies extensive expertise in cyber investigations, threat intelligence, incident response, and information risk management to assist clients across the threat and risk continuum—from prevention to detection, mitigation through to remediation and transformation. ltenery@stoneturn.com



Ross Rustici is a managing director with StoneTurn, and has more than a decade of experience advising governments and global corporations on cybersecurity matters, as well as building security and intelligence programs for clients. Ross has also designed go-to market strategies for SaaS products and managed a multitude of service offerings in the threat intelligence space. rrustici@stoneturn.com



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RANSOMWARE: THE BOOGEYMAN THAT WASN'T

With proper incident response foresight
there's no reason to become a victim of
a ransomware attack

ABSTRACT: Hollywood knows best that when it comes to security: you can't put the genie back in the bottle. 2021 showed a post-vaccine Hollywood with greater access to viewers but also an increase in security horrors. At Richey May we are always innovating and thinking ahead to help our partners in M&E. Here we will help you get a better understanding of how ransomware has evolved and grown into the No. 1 issue in Hollywood.

By Jason S. Hamilton, Director,
Cybersecurity Services, Richey May

MEMSA Platinum Member

Ransomware everywhere. We hear about it so frequently it has lost its novelty as a buzzword. It is such a commonly uttered term in fact, not unlike "the cloud," we should take a step back and define it to make sure we understand what it is at a fundamental level and see if we can pull back some of the boogeyman aura that has become associated with it. Once we're sure we know what it is, we can talk about how to prepare for it, detect its presence in our infrastructure, mitigate the damage, sanitize our systems, and recover from it with as little impact as possible.

WHAT IS RANSOMWARE?

Ransomware is a type of malware that infects a computer system and encrypts data files using an asymmetric encryption methodology, making critical data unusable. It contains a component which then informs the victim their data is being held hostage in this unusable format until a ransom is paid, and typically directs the user to transfer

funds to a crypto wallet in exchange for the private key needed to decrypt the compromised files. There is no guarantee the decryption key will be delivered, or that it will actually work when provided. There have been numerous cases where the ransom is paid and the victim receives nothing in return, leaving them to recover the data on their own, or accept the loss and move on. This begs the question: if an organization must lean on its own internal processes to recover the encrypted data anyway, then what was the point of paying the ransom or interacting with the perpetrator at all? This is an important consideration, so we'll circle back to this in a moment. First, let's talk about how we can proactively defend against a ransomware attack.

THE BEST DEFENSE: POLICIES, PROCEDURES, AND STANDARDS

Incident Response Procedures are a fundamental component of any security program. The first step in defending your network from a ransomware attack is to make sure you have a procedure for detecting and addressing potential threats. A suspicious event can be reported by a user, a Security Operations Center (SOC), or an alert from a monitoring system (e.g., files suddenly appear to be all written in windings, numerous files suddenly change ownership to a single user, or of course when the ransom demand is displayed on a workstation). Once a threat is detected, your IT team should first validate the threat, and then initiate the organization's Incident Response Procedure.

The Incident Response Procedure should include at least: defined roles and responsibilities of the Incident Response Team (IRT), data classification mapped to severity level, a decision tree to determine escalation levels and associated tasks, and a communication plan to understand whom to notify and when. It is also a good idea to create a separate procedure that is specific to ransomware, which includes how to validate the threat, mitigate the damage (i.e., re-imaging of infected endpoints), and recover as quickly as possible.

Network segmentation and logical segregation of data and business critical resources can also play a major role in proactively defending against a ransomware attack (and really, against any type of malware attack or active compromise). Fairly basic malware can easily locate mapped file shares and encrypt data located there as well. Locking down internetwork traffic with implicit deny policies can prevent malware from spreading, effectively isolating the threat and shortening the time to recover

DO NOT PAY RANSOMS. Do take the time to ensure you have an incident response plan, a solid backup and restore procedure, and knowledgeable staff who are ready to execute those plans.

normal operations.

The key component of defense against a ransomware attack is to have a comprehensive backup strategy in place. Seems simple, right? It is simple, and yet somehow this fundamental procedure is ignored in the face of a real-time attack, decision-makers panic and ransoms are paid, perpetuating the cycle and benefitting only the attacker. Your organization's backup strategy should include: a list of business-critical resources such as servers, applications, and data warehouses; the frequency and methodology by which each resource is backed up; and the restoration procedure, organized in order of criticality.

The ransomware procedure mentioned above should reference backup strategy documentation and mandate that restoration processes be employed immediately following eradication of the threat from the network. The higher frequency with which backups are taken and the faster the restoration processing speed, the lower the impact to the organization. That's to say, TEST the restoration process frequently. Get better at it. Do it faster and with fewer errors and fewer redundant steps. The efficiency of your restoration process is directly proportional to productivity saved in the face of a ransomware attack.

That's it. That's really all there is to it. This is not theory; it is tested and proven in real world scenarios. Remember the Colonial Pipeline ransomware attack in May of 2021? Shortly after paying the nearly \$5 million ransom, Colonial recovered their operations not by using the decryption tool provided by the hacker group who perpetrated the attack, but by restoring from their own backups. At the end of the day, paying the ransom was a pointless waste of time and money. Ransomware attacks should not be any more frightening than infection by any type of malware. With the right controls in place, cooler heads ultimately prevail. Do not pay ransoms. Do take the time to ensure you have an incident response plan, a solid backup and restore procedure, and knowledgeable staff who are ready to execute those plans. ■



Jason S. Hamilton is the director of cybersecurity services for Richey May. He has more than 20 years of experience supporting and securing information systems and has held roles in many progressive cybersecurity positions supporting companies in data services, financial services, public-sector, and telecommunications. jhamilton@richey.com @RicheyMay

WIN THE BATTLE AGAINST CONTENT PIRACY: IT'S IN YOUR CONTROL

Everyone — rights holders, broadcasters and distribution platforms — needs to work together to make anti-piracy work

ABSTRACT: As the entertainment industry evolves and technology advances, the value of content increases and paths to large-scale content theft are more numerous and ubiquitous. With piracy a constant threat, implementing content protection solutions from the ground up must be considered a best practice and integral to a company's value proposition.

By Derek Chang, CEO, Friend MTS

Piracy has been around as long as media and entertainment has existed. As these industries evolve and content becomes more valuable, the stakes only increase. As technology becomes more advanced, the paths to content piracy become more numerous and ubiquitous.

Statistics back up what we all know: that video pirates are the greatest threat to content, revenue and brand for streaming services, live-sports organizations and media companies. By 2023, revenue lost to pirates for pay TV and non-pay TV video is expected to exceed \$67 billion worldwide.

Yet if you ask industry executives — from content rights holders to distribution partners — what they can do about piracy, you get no clear answer. There's

a tendency to sidestep the issue, look to others to take responsibility, or claim you're doing "your part."

ASSET PROTECTION IS SERIOUS BUSINESS

Media, sports and entertainment businesses need to take content security seriously and commit to taking action to do so. That means investing money and resources.

Think about it this way: in any industry, shareholders and board members expect business leaders to protect their assets and undertake appropriate risk mitigation efforts. If you're a business making and selling furniture, you'd have an abundance of locks, alarms and security cameras in place every step of the way — from materials receiving to the shipping dock — to thwart thieves from

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CONTENT PROTECTION IS *also challenging because, simply put, it's not always a priority with every individual who touches that content along the way, or with leaders at the top.*

breaking in and stealing your assets.

The only thing different in the media and entertainment industry is the nature of the asset. Instead of a tangible armchair or table, it's content. Every year, hundreds of billions of dollars are spent on the production, distribution and sale of content. If you're a content developer, owner, distributor or platform, and you're not securing your content, you're not securing your assets. And when you aren't protecting your assets, you're undermining your business.

TAKING RESPONSIBILITY

Admittedly, content protection can be complicated, because of the multiple points where content is handled. That makes for plenty of opportunity for theft, and we all know that a system is only as good as its weakest link.

Content protection is also challenging because, simply put, it's not always a priority with every individual who touches that content along the way, or with leaders at the top. But given the core responsibility to safeguard assets — and the opportunity to improve financial performance by doing so — executives today can step up and make it happen. Integrating anti-piracy measures from the ground up, in program and revenue planning, should be viewed as a normal course of doing business to reduce churn and acquire new customers who might otherwise utilize pirate services.

And businesses need to do it together. To get the best results possible, rights holders, broadcasters and distribution platforms must deploy anti-piracy technology in a practical integration. For instance, at Friend MTS, we work with major sports leagues to implement content protection technologies in conjunction with platforms. We've found these measures extremely effective.

Every part of the media and entertainment ecosystem must be involved in the effort. There's no room — or

time — for pointing fingers. Just as all the homeowners in an HOA need to come together and pool resources to fix a deteriorating neighborhood street, all the entities involved in your content need to join forces and act as a team to effectively combat piracy.

The growth of streaming services can facilitate the incorporation of content protection from the bottom up, as direct-to-consumer (D2C) platforms proliferate. Since these services own the content from end to end — from production to distribution to the end user — it becomes even easier to implement systems that protect the entire distribution chain. They can't point fingers at someone else.

The bottom line really is the bottom line. Executives must make the call to protect it.

IT'S IN YOUR CONTROL

The landscape of live sports, media and entertainment is changing at break-neck speed, and content pirates are constantly evolving with it. That's a reality. Companies' commitment to implementing continually innovating, scalable, flexible content protection technology is no longer an option, but a mandatory part of doing business. And when done right, it works extraordinarily well.

Piracy is a threat to the bottom line, and protection measures should be built into any business planning as a best practice. There is a solution, and with the right content protection partner, it's very much within your control to tackle in an effective way. After all, it's taking control of the health of your business. ■



Derek Chang is CEO of Friend MTS, which provides content protection technology services to media and entertainment businesses. With advanced services that measure, monitor, detect and disable content piracy, Friend MTS provides a 360-degree view of the constantly shifting content piracy protection ecosystem. pr@friendmts.com @friendmts

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HAVE SECURITY PROCEDURES KEPT PACE WITH THE NEW THREAT LANDSCAPE?



The rapid transition to distributed working, the cloud and software-as-a-service apps has opened new fronts in cybersecurity awareness

ABSTRACT: Despite the pandemic, the M&E supply chain is extremely busy — and virtually everyone has changed their working practices, whether through remote working, the cloud, new web apps, or using freelancers. Content owners are not so convinced that security levels have kept pace with this change. We explore areas where revised best practices and implementation guidance can help vendors strengthen their defenses and enhance their offerings.

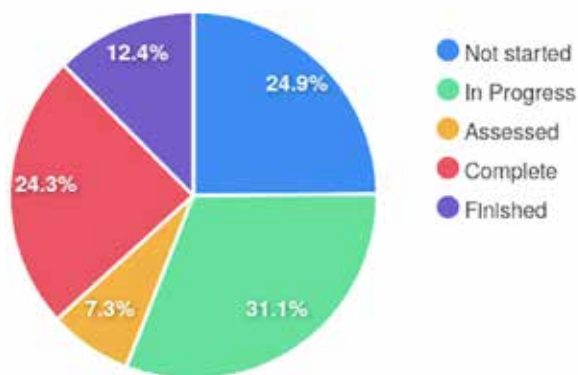
By Mathew Gilliat-Smith, EVP, Convergent Risks

■ MESA Platinum Member

Even in late 2021, it seemed that only a minority of people working in the M&E supply chain were back in their office. “The biggest impact of COVID-19 may be remote work. Pre-pandemic, roughly five percent of full-time employees with office jobs worked primarily from home. That figure is likely to settle at 20-30 percent in the new normal, with variation across occupations and industries,” according to a *Forbes* report.

Looking forward, how will security best practices and procedures within the M&E supply chain be upheld to their usual high standards? For content owners it gradually became apparent that a whole layer of the supply chain was escaping the security scrutiny of controls that would be in place if they were in the office. This is in part because the Motion Picture Association best practice guidelines mainly cover

Assessment Summary

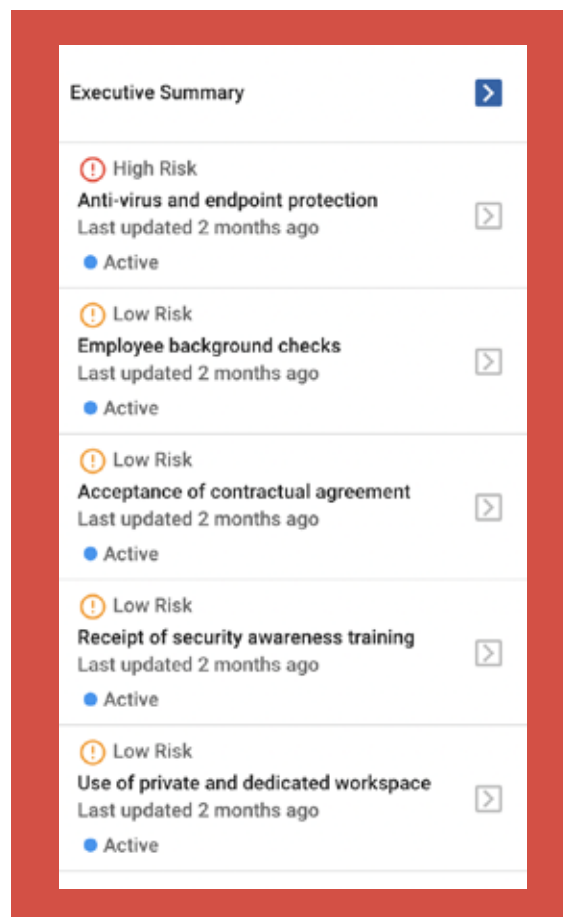


A visual of your assessment progress.

site security only, but also because many creatives have left their previous companies and set up on their own and in turn employ their own network of freelance creatives. Staff working remotely and independent freelancers are two different scenarios.

Convergent has tried to take a proactive approach by working closely with content owners to create a specific set of remote worker security best practices, relevant particularly for freelancers, which achieves a couple of key objectives. First, by using Convergent's interactive Sanctum portal, it educates remote workers in security and safe practices; and secondly, it provides assurance to the content owners that freelancers working on a particular project have been vetted and are safe to engage.

By inviting the freelancer to log-in and answer a relevant list of security questions where evidence can be uploaded, such as screen shots and documents. This process itself can provide a personalized form of security awareness training. A qualified assessor can conduct a mini assessment to check which working practices do and don't meet best practice and then make a risk assessment of items that need addressing. Examples may be around use of private a workspace, endpoint protection, whether the freelancer has undergone any security awareness training, acceptance of a contractual agreement, network



Assess your organization's risk priorities.

security practices, logging and monitoring of a server containing content, and so on. The freelancer can then understand the risk, learn from it, and implement the necessary changes. In completing this questionnaire, a database is created for approved freelancers which can be referenced on future projects.

Education and assessing risk levels is based on a security RACI matrix which sets out the relationship between the asset owner, asset custodian and the remote worker as to who is responsible, or accountable (or both) and who needs to be consulted and kept informed. There is a big difference for example between using BYOD or company owned devices. Sanctum also comes with analytics so the asset owner can see how many remote workers have gone through the security awareness and how many still need support.



Mathew Gilliat-Smith is the EVP of Convergent Risks and has 20 years' experience in the media and entertainment sector, with strong relationships at many levels with studios, broadcasters and vendors. He co-founded three digital security start-ups and has held senior roles in major media corporations. mathew.gilliat-smith@convergentrisks.com @ConvergentRisks

LOOKING FORWARD, how will security best practices and procedures within the M&E supply chain be upheld to their usual high standards? For content owners it gradually became apparent that a whole layer of the supply chain was escaping the security scrutiny of controls that would be in place if they were in the office.

CLOUD MIGRATION

COVID-19 has accelerated the migration to cloud workflows within all sectors and particularly in M&E. Many VFX and postproduction vendors have re-invented themselves through necessity and opportunity, shedding unused office space, but with the ability to scale creative resource up and down as needed. There has been an increased use of “virtual desktops” leveraging the cloud. Many have opted for visualization tools like Teradici and HP with their private cloud storing the content, but also using SaaS apps on the public cloud for tasks like rendering. The return on investment is justified by dramatically increased performance and the ability to scale in more cost-efficient ways. However, a comprehensive security strategy underpins any successful cloud workflow. Without this you are taking unnecessary business risk and not taking full advantage of what the cloud offers.

In adapting to this new way of working it's important to embrace readily available security guidance. SaaS applications can be configured by the user in either a “secure” or “insecure” manner. It's essential that SaaS apps are used securely so that an acceptable security posture can be maintained. Cloud providers do issue sound best practice guidance, but implementing this isn't always straightforward, especially if you are having to do it retrospectively after you have created your new workflows. It's advisable to understand and implement best practice before you deploy to cloud, but the challenge is that most business stakeholders will say “just get it working first” as the commercial pressures of adoption can be considerable. At Convergent we created a cloud security controls matrix (encompassing relevant MPA best practices) specifically for the M&E sector. It provides a comprehensive approach to content security and establishes the overall security posture of a vendor across their cloud environment and SaaS applications. We shared this matrix with the studios and trade bodies and have been conducting cloud security assessments for a range of vendors ever since.

The number of vulnerabilities highlighted from a

typical cloud assessment can be daunting, particularly if that vendor was previously unaware of those issues. Convergent's approach now is to provide security awareness and guidance through the way the assessments are conducted. Going forward we will provide interactive training by taking the audience through the questions, providing explanations and the consequences of not implementing the best practice guidance. For example, when the vendor drills down to the detail of logging and monitoring or identity and access management, the realization of incorrect configuration becomes much more apparent.

SAAS APPLICATIONS

Studios have been inundated with approaches from SaaS app vendors showing off their latest and greatest apps. This trend is not transitory, it will continue, particularly as apps become more intuitive and smarter. But the same security principals apply here. As a Sky spokesman said at DPP's September 2021 Media Supply Festival: “Don't come to us with a SaaS application product that doesn't tick the basic security requirements. It could be the most amazing cloud native product, but if it doesn't have security, we simply can't use it.”

Well-known applications are often proclaimed to be secure, but if you don't follow the best practices, content can be exposed to risk. There are many web applications that have never undergone threat assessment penetration testing. It's only when you test shows a basic user level with a limited set of permissions and find that, through a circuitous route, you can achieve the same permissions as Super Admin user, that you realize this will probably mean you are putting content at risk.

One aspect we do find refreshing is the noticeable change in attitude among supply chain vendors who are now generally embrace security best practice and assessments as they realize it instills confidence for staff, partners and customers, ultimately making their businesses more successful. ■

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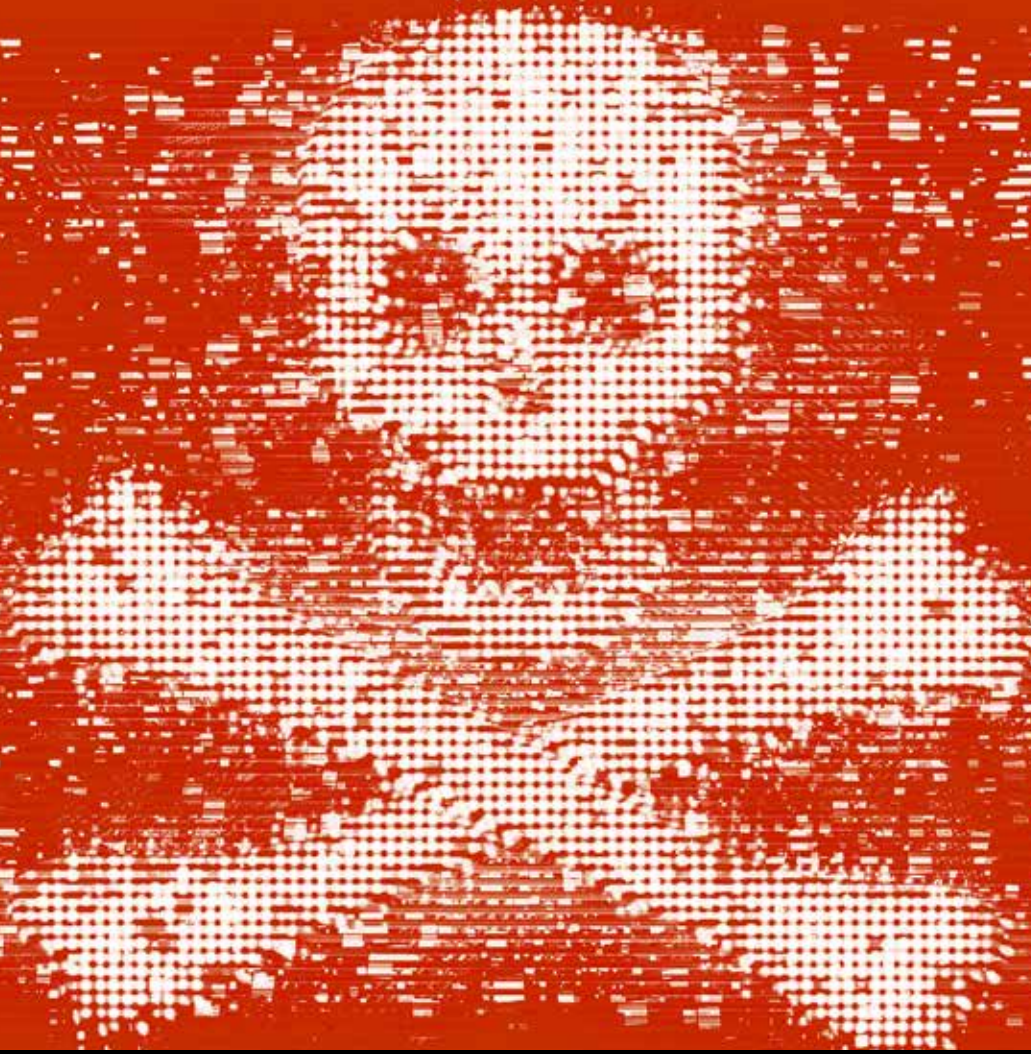
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TACKLING OTT PIRACY HEAD ON

Disrupt the evolving pirate landscape and preserve revenue by protecting your service and content



ABSTRACT: As a result of the pandemic, the stakes are higher than ever due to the increased consumption of OTT streaming, further accelerating the industry's need to act. Looking to the future, a successful approach to fighting piracy starts at the architecture and user levels and adopting a tactical approach to monitoring and disruption activities.

**By Janice Pearson, Director,
Business Development,
Synamedia**

Piracy is thriving and has become a multi-billion-dollar industry. In fact, the value of pirated video services is predicted to exceed \$67 billion worldwide by 2023 according to Parks Associates.

Studios and sports rightsholders are increasingly frustrated by the amount of premium content being leaked from their services, and rightfully so. Content owners invest substantial resources into combatting piracy and implementing technical controls. Unfortunately, the pirates have developed tactics to circumvent these controls, which result in piracy miti-

IN THE WORLD OF FILMMAKERS and film festivals, the concern and the need for cohesive, careful practices permeates the film production and distribution hierarchy.

gation that treats the symptoms of these tactics. That's why Synamedia, the world's largest independent video software provider, created new technologies that address the root causes of piracy to help content owners protect their services and allow technical controls to work as intended.

PIRATING CONTENT IS EASIER THAN EVER BEFORE

Accessing video content has never been easier for pirates. While technology has evolved and made it easier for viewers to access their content anytime, anywhere, and on their device of choice; it's also inadvertently removed roadblocks that stopped pirates from accessing that same content. Long gone are the hardware and lab setups needed for pirates to tap into services to steal content.

New pirate scripts have emerged in the form of computer programs that access content directly from the service operator's CDN. As a result, pirates have created top quality services coming directly from the CDN of the legitimate service with low latency and even audio and subtitle selections. This damages the brand of the legitimate service, especially when illegitimate services can be so good that viewers think they're getting a deal on "real" content from a "real" service provider!

PIRATES ARE CONTINUALLY EVOLVING

Pirates are continually evolving, and the use of pirate scripts brings a new level of technical sophistication where these computer programs can easily bypass the security measures that content owners and service providers typically put in place. As a result, content owners are not sufficiently protected.

Concurrency mechanisms are a common point of OTT services' vulnerabilities. In theory, they should limit users from accessing content from more than a set number of accounts. An example of this is when you're watching content via a streaming service at the same time as three other viewers in your household, and a screen pops up

letting you know too many people are viewing content on that same service. However, pirates bypass this technology by "tricking it" to allow an unlimited number of streams to play concurrently — allowing hundreds of users access to premium content under one account with no limitations.

Pirate scripts provide bad actors with the capability to duplicate authorization and CDN access tokens, resulting in content being decrypted on the fly or client redirected to the CDN after obtaining the digital rights management (DRM) license. This allows pirates to host their services using the compromised service provider's infrastructure, and the service provider pays for the bandwidth and computing resources that the pirates use for free. Unfortunately, hardening the application does not prevent compromise from these pirate scripts.

Identifying users by their properties also proves a challenge for enforcement efforts, as it's impractical in many cases because there is no unique identifier such as an IP or MAC address for emulations or browsers. This makes it nearly impossible to track who is accessing the content.

WHAT'S THE SOLUTION?

There are several key concepts to keep in mind when building an effective solution. To prevent pirate scripts from duplicating identities, it's important to ensure services have a unique client ID that is secure and provides signed verification. Anti-tampering is also necessary to detect and prevent any type of tampering within the OTT service. Protection must also be extended to the CDN to avoid servicing unauthorized devices.

To raise the stakes in the fight against piracy and in response to pirate's sophisticated and continuously evolving tactics, our security practice launched Synamedia OTT ServiceGuard. This is the first solution on the market that will help the media and entertainment industry directly address the common vulnerabilities that allow pirates to not only steal content, but also to complete against their

Continued on page 135



Janice Pearson is director of business development at Synamedia. She is responsible for building the company's studio business in North America. She brings 18 years of media and entertainment experience to Synamedia and speaks regularly at industry events and serves on industry association committees. jpearson@synamedia.com @SynamediaVideo

THE IMPORTANCE OF PROTECTING CONTENT FOR M&E

The cost of a cyberattack has never been higher, and the industry can do more to protect itself

ABSTRACT: Protecting content and intellectual property is at the forefront of the media and entertainment industry. Disruptions and downtime can cause delays in filming and production, impact back-office administrative and financial productivity, and inhibit customer experiences. The most prominent risks in the media and entertainment industry are leaked content, state-sponsored attacks, public scrutiny, and sabotage.

By Dr. S. Ann Earon, President,
Telemanagement Resources International,
Bluescape Consultant

The media and entertainment industry has all the data security needs most businesses have, but also maintains very sensitive data related to financial and personal relationships between the organization and the people it works with to develop and distribute content.

Media and entertainment firms are increasingly vulnerable to cyber-crimes. Breaches and hacks against firms can result in compromised emails, early release of films or transcripts, and diminished employee productivity due to system downtime. Per IBM's annual "Cost of a Data Breach" report the average cost of a data breach in 2021 is \$4.24 million, the highest average cost in the 17-year history of their reporting.

Protecting content and intellectual property is at the forefront of the media and entertainment industry. Operational disruptions and downtime can cause delays in filming and production, impact back-office administrative and financial productivity, and even inhibit customer expe-

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riences, all of which can result in impacted revenue.

While the media and entertainment industry must deal with the challenges of protecting scripts, films, music, and files, the sector must also deal with the same cybersecurity issues of other consumer-oriented organizations. It is important to provide secure networks that protect intellectual property, as well as critical employee and consumer data. The networks must meet the high-performance demands of customers and employees, while enabling connectivity across distributed locations. Digital innovations that enhance customer experience, such as cloud-based services, internet of things (IoT) devices, and mobile networks, must be readily available and secure. Any network downtime can hinder customer experience and negatively impact revenue and brand reputation. Firms must ensure customer data is protected and demonstrate compliance to regulations such as the EU's General Data Protection Regulation (GDPR), the Payment Card Industry Data Security Standard (PCI DSS), and the Payment Card Industry Software Security Framework (PCI SSF).

Infrastructure for media and entertainment firms consists of IT services that support data for finance, HR, sales, marketing, and valuable intellectual property. Networks must support employee and third-party supplier mobile and IoT devices, as well as deliver web and mobile applications for external customer experiences. Protecting corporate systems and assets is critical to the success of each firm, but new, complex, distributed networks in the face of advanced threats make achieving end-to-end security increasingly difficult. Media and technology firms need to protect their corporate infrastructure by breaking down silos via a simplified, integrated security architecture.

The best approach for media and entertainment firms is to deploy public Wi-Fi as an integrated part of their overall security architecture, versus as an independent solution that creates silos, manual processes, and complexity.

As the entertainment industry continues to migrate away from broadcasting and DVD and Blu-Ray sales toward online content and streaming, the risk of hacking and its potential damage increases daily.

In "The Rise of Hactivism," journalist Dorothy

OPERATIONAL DISRUPTIONS and downtime can cause delays in filming and production, impact back-office administrative and financial productivity, and even inhibit customer experiences, all of which can result in impacted revenue.

Denning with the Georgetown Journal of International Affairs writes that the dangers of state-sponsored hacktivism are a growing concern, especially in entertainment where political ideologies and messages are often incorporated into movies and music.

The most prominent risks in the media and entertainment industry are discussed in "Hacking Hollywood: Cyber Security Threats in the Entertainment Industry" by Walker Banerd, D3Security communications manager, in his company's blog:

■ **Leaked content:** Insiders with access to not-yet-released content can leak files to file-sharing servers. Also, hackers can use spear-phishing techniques to trick high-profile entertainment personnel into divulging access credentials to secure databases and servers, revealing new music and movies to malicious actors.

■ **State-sponsored attacks:** Entertainment corporations generally maintain significant pull on cultural trends and beliefs. Like the alleged North Korean-sponsored attempt to take down "The Interview," state- or organization-sponsored hacktivism attacks can target controversial entertainment content.

■ **Public scrutiny:** Leaked emails are common after successful hacks, but leaked emails and communications of celebrities are fodder for public scandal, media circuses and ruined lives. And a lot of leaked information can be taken out of context.

■ **Sabotage:** Productions can be attacked and crippled by malicious actors for any number of motivations,



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annearon@aol.com @Bluescaper

including terrorism, religious fundamentalism, political idealism or simply a desire to spread anarchy for anarchy's sake. Regular file maintenance and backups can reduce this type of attack.

"All of these threats pose a tangible risk to the financial, legal and reputational standing of entertainment companies," Banerd wrote. "In Hollywood, even the comparatively benign publication of private information, messages or images can have an outsized effect given the importance of brand, celebrity and professional relationships."

Content development relies on intense collaborative activities. Bringing entire teams together to develop and review work is cost, time, and space prohibitive. Video conferencing and screen sharing fall far short of recreating the benefits of working together in a room. As a result, the quality of work suffers, and budgets and timelines are threatened.

BLUESCAPE

Bluescape is a secure, infinite, collaborative workspace designed to accelerate decision-making by enabling anyone to create, communicate, visualize, organize, and strategize virtually anything, anywhere, anytime. Bluescape is designed to meet the needs of media and entertainment professionals. Bluescape is designed to help users conceptualize work and ideas in a physical plane — a type of spatial collaboration that facilitates creative innovation and product development. All content placed on the workspace is viewable by everyone, who can add and edit for all to view. Participants can quickly access content shared months ago and have an immedi-

ate view of all work without the need to search old documents or postings. Consequently, Bluescape has penetrated a variety of industries like filmmaking, creating marketing, and production that require sophisticated visualization engines unsupported by traditional collaboration tools.

Operated on cloud-based software, Bluescape can be accessed on multiple devices, including large-scale, high-definition, multi-touch screens: iPads, laptops and mobile devices. There is no limit to the total amount of information an organization can have in Bluescape. The format of the information is visually organized (by the person who uploads the information) so the content is clear, and ideas easily understood. No other platform combines this second visual self-organization with other features like video conferencing, an API for easy integrations, and the broad array of content types supported by Bluescape.

Complex organizations require more than just collaboration tools. Teams need virtual whiteboards. Enterprises need smart collaborative features and enterprise ready scalability and security. Bluescape delivers with intuitive features teams need, and the architecture to support thousands of users and protect proprietary data.

Give media and entertainment teams a virtual work platform that lets them work together like they are in the same room. Whiteboarding, integrated video conferencing, and compatibility with existing applications mean employees find value in Bluescape on day one. At the same time, extend existing enterprise roles and permissions throughout Bluescape and keep systems safe from breaches using industry leading security. ■

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DISRUPTING PIRACY

Using multi-DRM and watermarking
to combat illegal viewing and
distribution of content

ABSTRACT: It's not often that an industry undergoes the revolutionary shift that streaming video has undergone in the past three years. It's as if someone just made a switch in the tracks and streaming is now the primary media and entertainment platform. COVID-19 has catalyzed this shift by effectively moving most of the digital pre-production and post-production for theatrical and series-based releases to the cloud. Disrupting piracy in the streaming industry is now a crucial component to success for live sports, theatrical releases and popular series. Here, we take a deeper look into how watermarking with multi-DRM disrupts piracy of your content while enabling new viewing models and playback platforms.

By Christopher Levy, CEO, BuyDRM

Once upon a time, commercial VOD content was distributed via physical media: video cassette, LaserDisc, DVDs, and ultimately Blu-ray. Every town had its share of video rental stores that would stock up on physical copies, sometimes hundreds of copies of a presumptively popular title per location.

Copy protection mechanisms, reproduction equipment requirements, and physical media costs met the content owner's anti-piracy requirements. The cost and storage requirements of these physical artifacts severely limited the availability of content at any one location, creating an opportunity for mail-based businesses like Netflix. Technological



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WHEN CONTENT IS RE-DISTRIBUTED ILLEGALLY, the ability to prove how many copies were distributed and who stole them is required when assessing damages.

constraints relegated live content like sporting events to purpose-built broadcast, cable, and satellite networks. While these networks could theoretically support VOD services, capacity constraints severely limited their growth.

OTT video streaming originally meant content on social media sites like YouTube, Facebook, Instagram, and others. With content available for free to anyone who wanted to watch, there was no incentive for unauthorized re-distribution. The growth of these social media sites was paralleled and enabled by the proliferation of OTT video devices including smart phones, tablets, and smart TVs.

In 2007 Netflix, which had just shipped its one billionth DVD, introduced a limited VOD streaming service, heralding the birth of the commercial streaming industry. Two years later, Netflix customers were watching more videos than they were renting on discs. Two years after that, Netflix was the largest source of internet traffic in North America, representing 30 percent of all traffic during prime viewing hours. Today, over 80 percent of worldwide internet traffic is video.

Streaming video completely changed the economics of video piracy. For commercial streaming services content rights are the single largest expense, often more than 50 percent of all operating expenses. An HD movie can be stored in the cloud for just pennies per month, and a single copy can be streamed to an unlimited number of viewers. Delivery of an individual stream costs just a few more pennies. COVID-19 upped the ante when the movie industry was forced to release new movies to streaming the same day as the theatrical release (if the movie was even available in theaters).

DISRUPTING PIRACY

There are two tools to fight streaming piracy, Digital

rights management (DRM) and watermarking. Industry groups including the Digital Cinema Initiatives, MovieLabs, and the Streaming Video Alliance have published standards for content protection. These standards require both DRM and forensic watermarking, and compliance is generally a requirement in your content license agreement.

DRM refers to technology, tools, and systems used to protect and control access to proprietary content. Watermarking refers to marking digital content so that it can easily be traced to its source. Visual content watermarks can be either visible or invisible.

The most familiar form of watermarking is a visible overlay over the image, and all stock image providers use them. The overlay allows a potential customer to evaluate the image while at the same time preventing its commercial use. Importantly, the presence of the overlay does not affect the usability of the image for its intended purpose. As the presence of the visual watermark has rendered the content unsuitable for an end-user, we don't need to worry about tracing it back to its source, so the same watermark can be reused for all content.

As visual watermarking intentionally degrades the image, it is not suitable for content intended for end-users, such as streaming. Video stream watermarks have four key requirements:

- They must be present but visually undetectable; it can't degrade the image, even when viewed on a large-screen UHD display under ideal viewing conditions.
- They must be traceable back to the original stream for forensic purposes. Each video stream must have a unique watermark that can be traced back to the original stream.



Christopher Levy is the CEO of BuyDRM and is a globally recognized expert in the commercial application of DRM technologies. BuyDRM benefits from two decades of Levy's leadership working closely with large media and entertainment companies to secure and distribute their digital media content. clevy@keyos.com @BuyDRM.



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- They must be resilient. If the watermark can be damaged or removed, then it isn't useful.
- They must be usable at scale.

BUYDRM'S MULTIMARK SERVER MEETS ALL THESE REQUIREMENTS.

Content providers have a strong interest in protecting their brand when licensing content for streaming. Content license agreements will often include requirements for image quality, sometimes specifying the resolutions and bitrates required to assure that the viewer sees "their" content at the highest quality possible. These quality requirements also apply to watermarking.


Watermark traceability is important for a couple of reasons. When content is re-distributed illegally, the ability to prove how many copies were distributed and who stole them is required when assessing damages. For live streaming, when a pirated stream is discovered the watermark traceability allows you to identify and terminate the source of the stream in real time without impacting legitimate customers.

Because DRM does such a good job of protecting the original stream, pirates often start with a legitimate stream and attempt to capture the actual video stream after it is decoded. Common techniques include digital screen grabbing, intercepting the HDMI connection to the display, and even pointing a camera at the video screen. After capturing a stream, they may crop, resize or completely reencode the video to try and avoid detection. A resilient watermarking must be impervious to all these attacks.

An otherwise good watermarking system is useless if it is too expensive to deploy. The encoding step seems like a logical place to insert the watermark but dedicating a unique encoder to each stream isn't economically feasible if you want to support millions of simultaneous streams. This is where two-step watermarking comes in. In the first step, placeholders for the watermark are included throughout the video stream during the encoding process. In the second step, stream-specific watermarks are then inserted in the pre-defined locations during packaging.




NEW OPPORTUNITIES

Content owners have invested vast sums in producing the content and reasonably expect a return on that investment. Pirated content is a direct threat to that return. In the past they have attempted to protect the content by using secure distribution channels like movie theatres, sports stadiums, music venues, and secure, dedicated broadcast networks. When the COVID pandemic disrupted many of those traditional distribution channels some content producers chose to experiment with digital streaming as an alternative. When they did, they found that streaming increased the market for their content, and their margins. A premium price to purchase a video stream of a new movie or live event is still cheaper than gas, parking, and tickets for the event. Now that the results of these forced experiments are coming in, more and more content producers are looking for secure digital streaming options. ■



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PROTECT THE FIELD OF DREAMS BY COMBATTING GEO-PIRACY



Defeating illegal access to content outside of intended regions is easy with the right tools

ABSTRACT: The growing reliance on streaming platforms for live sports is whipping up the perfect storm for geo-piracy as viewers try to illegally access content in other regions. Fortunately, there is an easy way to protect valuable territorial rights, which is by implementing a robust VPN and proxy detection solution.

By James Clark, GM, M&E, GeoComply

In the summer of 2021, sports fans around the world finally got their fair share of live action, first with the UEFA Euro 2020 followed by the Tokyo 2020 Summer Olympics.

But athletes aren't the only ones setting records. There's an entirely different type of world record being broken, for pirate streaming. It's flourishing as more and more fans are disregarding territorial content restrictions to access these high-caliber live sports events from wherever they want, regardless of whether they have to use nefarious techniques to get it.

THE PERFECT STORM

The COVID-19 pandemic caused a major paradigm shift in media consumption habits, which saw streaming services drive record subscriber growth as people stopped attending live sports events and movie theatres. Along with an increase in streaming came a corresponding increase in the number of people using VPNs and proxies to circumvent territorial restrictions on geographically restricted content (geo-piracy).

Almost a third of all internet users use a VPN. Fifty-one percent of them do so to access “better entertainment content,” according to a survey by GlobalWebIndex. In addition, data collected by nScreen Media finds that over 50 million U.S. homes no longer have a traditional pay TV subscription. Combine these shifts in consumer behavior with the fact that anyone with a smart Android TV can now set up a VPN from their TV and watch territorially restricted content on their big screen, and the streaming industry has a big fight on its hands. Both to keep content where it is supposed to be, and to uphold the lucrative territorial licensing deals it depends on.

A growing reliance on streaming platforms is whipping up the perfect storm for geo-piracy as viewers try to illegally access content in other regions, either because it's unavailable in their country or available elsewhere at a much lower price. For example, savvy UK-based pirates can subscribe to watch English Premier League matches in the Baltics, using a VPN for only \$1 a month, which is a fraction of the UK price.

This upswing in pirated sports streaming and geolocation fraud might seem like just a harmless by-product of the new streaming age. In reality it's a serious threat facing the very business model that sports rights owners and sports leagues rely on.

IN THE STRIKE ZONE

Sports leagues and other content producers license their content on an exclusive territorial basis to OTT video providers and other streaming video platforms. This territorial licensing is the basis for virtually all their revenue. But when users circumvent geographical restrictions via VPNs and proxies, these revenue streams shrink.

Not only that, by letting their streaming platforms

THIS UPSWING IN PIRATED SPORTS streaming and geolocation fraud might seem like just a harmless by-product of the new streaming age. In reality it's a serious threat facing the very business model that sports rights owners and sports leagues rely on.

become a potential free-for-all, broadcasters and OTT providers are at risk of both breaking their contractual obligations with rights owners and possibly jeopardizing future rights deals.

There's also a growing body of evidence that shows viewing illegal live streams displaces legitimate viewing, which in turn results in lower subscription- and ad revenues over time.

FLIPPING THE SCRIPT

Fortunately, there is an easy way to protect valuable territorial rights: by implementing a highly accurate VPN and proxy detection solution. For instance, GeoComply's GeoGuard, which recently won the 2021 CSI Award for Best Content Protection Technology, is used by leading broadcasters and video streaming platforms globally, including the BBC, beIN Media and Amazon Prime Video, to detect and stop geo-piracy.

Compared to complex and expensive security solutions such as digital rights management (DRM) and watermarking, VPN detection software is affordable and quick to deploy, making it accessible to smaller broadcasters as well. Estonia's Postimees Group relies on GeoGuard to meet their contractual obligations with the International Olympic Committee.

Another benefit to tagging geo-pirates from the beginning is a lightening of CDN loads. As soon as MultiChoice Group, which streams live and on-demand content in countries across sub-Saharan Africa, deployed GeoGuard, it was able to block tens of thousands of pirate viewers each month on its DStv app. This dramatic reduction in geo-piracy cut CDN

Continued on page 134



James Clark is the GM of media and entertainment for GeoComply, where he leads GeoGuard's market-leading solution for VPN and proxy detection. During his 14-year career in the digital TV sector, Clark has accrued a deep technical understanding of security technologies and gained extensive experience of working closely with businesses to fight video piracy. solutions@geocomply.com @GeoComply



LOCALIZATION



The localization sector has stepped up to the challenges of the last two years like no other corner of our business. Fully embracing the ability of talent to work remotely? Easy. Rapid adoption of the tools and cloud offerings that facilitate remote talent's work? No problem. The creation of services to quickly find talent who possess the exact linguistic and technical skills any project calls for? Done. There's work yet to be done ... but localization has flourished during this onslaught of new content, making entertainment accessible most anywhere you can imagine.

MAINTAINING A PERMANENT STATE OF AGILITY FOR M&E SUCCESS

Meeting localization demands amid today's onslaught of content means embracing new tools ... and collaboration



ABSTRACT: It's no longer simply about meeting the demand for content. Evolving trends surrounding data security, a changing workforce, advancing technology, complex delivery requirements and a hyper-competitive market are raising the stakes in media and entertainment. Content owners and solutions providers must maintain a permanent state of agility for continued growth.

By Simon Constable, SVP, Global Language Services, Visual Data Media Services

If the past 18 months have taught us anything, it's that embracing change is the only way forward.

We've all learned to adapt in every aspect of our lives: our social interactions, our work and how we consume our entertainment. Viewers have certainly become more agile when it comes to accessing content, moving between traditional broadcast TV to mobile devices and creating a surge in multi-platform content consumption. To keep pace, content owners and solutions

providers in the media and entertainment industries have responded with the same agility.

It's no longer just about meeting the demand for content. Evolving trends surrounding data security, a changing workforce with heightened expectations, new technologies requiring new skills, complex delivery requirements and a hyper-competitive market with compressing timelines are all raising the stakes for media and entertainment professionals.

OVER THE PAST FEW YEARS, more employees and companies have realized the benefits of hybrid working. The pandemic has simply amplified and accelerated this trend, and the change has been massive for both content owners and solutions providers.

Agility is no longer a reactionary response. It's now a permanent state of being. Let's look more closely at each of the trends reshaping media and entertainment.

INCREASED COMPETITIVE PRESSURES

If we go back to the beginning of the pandemic, when content owners turned their full attention to streaming platforms, we've since seen a big uptick in localization volumes as well as a push to get content out to the market faster.

Look at what's been happening in the theatrical world over the last 12 months, where titles have been released to streaming platforms and cinemas simultaneously. The deadline to get dubbing, subtitling and media processing supplied for content has really changed and that acceleration is not going away. Access to better, more efficient solutions is now more important than ever.

NEW WORKFORCE, DEEPER TALENT POOL

Over the past few years, more employees and companies have realized the benefits of hybrid working. The pandemic has simply amplified and accelerated this trend, and the change has been massive for both content owners and solutions providers. This new workforce, working remotely around the world, has created both benefits and challenges for many organizations.

Some workers have embraced the change, with many relocating to other cities, states and even countries. This shift can be seen as an advantage as we've been able to pursue talent in regions that we wouldn't have been able to access pre-COVID-19. We don't see that trend changing in the future. It's simply a new model, one that gives us the ability to find the best people regardless

of where they live.

Having teams in different global time zones helps us scale up our localization services and gives us more opportunity to work with the best talent, regardless of location. This is another trend we don't see changing and, frankly, now that we've transitioned to a more efficient way of doing things, why would we even want to revert?

Of course, there is still a significant core of professionals who will continue to work on site. Remote solutions for media supply chain tasks are improving but they don't fit all the necessary workflow requirements. We are still very much working in a hybrid environment and will be for a while.

THE TOOLS

The increasing number of remote workers and production teams also increases the need for embracing more cloud-based technologies. The available tools must continually improve to provide the flexibility for employees to work collaboratively, feel like part of a team and still securely access the data and content they need to do their jobs.


This issue impacts the entire industry: content owners, streaming platforms, media servicing partners and software developers. It is not uncommon for there to be upwards of 20 different tools in use at one time on any given project. These tools all have value, often fulfilling a single part of the supply chain. But as these tools multiply there is an even bigger need to have systems talk to each other to improve the process for all the stakeholders in the supply chain. As an industry, we need to work collaboratively on better ways to integrate these tools and processes.

Balancing the needs of a security-focused industry with the open environment re-

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Simon Constable is SVP of global language services for Visual Data Media Services. Since joining Visual Data in 2015, he has successfully grown the company's worldwide access and localization services business, including dubbing, subtitling, captioning, audio description, scripting and metadata for international distribution. sconstable@visualdatamedia.com [@wearevisualdata](https://www.visualdatamedia.com)



The ability for localization talent to work remotely needs to be permanently embraced

THE CLOUD STANDS OUT IN MEETING TODAY'S TRANSLATION DEMANDS

ABSTRACT: The media and entertainment industry has faced a dramatic increase in the volume of content, with greater demand for products in more languages, delivered under shorter timelines. Cloud technology enables the industry to be truly global, virtual, connected, and ubiquitous. This formula is the path to satisfying market demand while fueling growth.

By Eric Blassin, Executive Director, Media Technology, TransPerfect

There's a theory that software architecture drives industry structure. We have seen this theory validated in many industries, starting with our own: the translation business.

Pre-technology, translators were hired to come onsite to company offices and provided with the equipment to do their work, simply because individual translators couldn't afford the computers and other equipment themselves. Then the model moved to outsourcing and the employment of in-country single language agencies, who had the local footprint and equipment to bring translators onsite to serve client companies.

With the adoption of cloud technology, most agencies are now multilingual and hire translators anywhere in the world, with the work done almost exclusively from their home offices. This transformation in translation has been interesting because it brings a scale and a speed that was simply impossible to achieve before.



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One of the objections to remote work in media localization highlights the emotive aspect of the content industry. Media localization is deeply human and benefits greatly from human interactions. However, the reality is that a movie production has very different types of human interactions when compared to movie localization. A movie production is a multi-month adventure, with actors, directors and technical staff living and working together for the duration of the project. This is a deeply human experience that will impact the emotive aspect of the movie.

When it comes to dubbing, this human experience is not on the same scale and is more fragmented. The duration of production will be shorter by an order of magnitude, and many of the crew and talent will never meet.

Another objection we often hear relates to the equipment. Computers were unaffordable for individuals in the early '80s, as was recording equipment over the last few decades. Most tech products are following a similar evolution trending toward individual affordability (drones are a good example). And a quality home studio is now a low four-digit investment.

Despite these objections, there are forces that we think will accelerate this transformation. One of the most prevalent is demographics. Those of us with several decades of experience should remember that 40–50 percent of today's U.S. workforce is made up of millennials and Gen Z, and this number is expected to grow to 65–75 percent by the end of the decade. For those digital natives, remote work, cloud technology, and the flexibility to work from anywhere at any time are all part of their DNA.

We believe that this digital transformation can bring a lot of value to the M&E industry in the following ways:

Agility: With digital transformation comes the opportunity to simplify and streamline processes, including real-time progress visibility; and corrections and retakes done without any overhead; last-minute changes integrated on the fly. With rising demand for shorter production cycles along with the opportunity offered by parallelization of production and post-production, agility will be key.

MEDIA LOCALIZATION IS DEEPLY HUMAN and benefits greatly from human interactions. However, the reality is that a movie production has very different types of human interactions when compared to movie localization.

Scalability: Talent's home studios will complement our owned dubbing studios, increasing capacity by an order of magnitude. Thousands of talent could provide thousands of additional studios for a virtually unlimited scale.

Talent pool: Historically the pool of available talent has been limited to those living close to the main dubbing capitals. However, there is great talent outside of those cities, and by removing the geographical constraint, the pool of available talent can be increased dramatically, adding further capacity to meet the demand.

Diversity: Access to a larger pool and ability to use any talent anywhere dramatically increases the options for directors. There will no longer be a problem using talent on the other side of the world if you believe it is the perfect voice for dubbing a character. This increased access opens up diverse options, and this diversity will make the final viewer experience richer.

Although you can never be certain that you are accurately predicting the future, there are many forces and trends that suggest that, once more, software architecture will transform the media localization industry structure. The question is: how fast will this transformation happen? ■



Eric Blassin has spent more than three decades in technology roles and the last two decades working on cloud technology in leadership roles. Since joining TransPerfect in 2016, he and his team have developed the MediaNEXT platform from the ground up. Before joining TransPerfect, he was chief technologist with Lionbridge, where he created that company's cloud-based language technology platform through both organic development and acquisition. eblassin@translations.com @TransPerfect



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TALENT SOURCING? NOT A PROBLEM

An independent industry registry for localization talent is helping to meet the demands of a strained industry

ABSTRACT: As media localization continues to flourish in line with the growth in the entertainment sector, the words ‘talent crunch’ echo in industry forums. The POOOL is a market-wide initiative offering a solution to this issue.

**By Yota Georgakopoulou,
Audiovisual Localization Expert, OOONA**

As streaming platforms take over the world and the volume of entertainment content continues to increase, talks of the so-called talent crunch echo in industry forums. They most frequently relate to specific roles in the media localization industry, such as voiceover actors and dubbing directors, or subtitlers in new language combinations.

This talent shortage has been a theme at recent industry events that focus on content localization, such as MESA’s Content Workflow Management Forum (CWMF) and the Languages & the Media 2021 conference. As new streaming launches are announced, industry experts predict that the situation will worsen in coming months, and even the traditionally better-resourced pool

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THE ABILITY TO QUICKLY FIND NEW TALENT who possess the linguistic and technical skills required to competently perform tasks commonly required in today's subtitling workflows has become more important than ever before.

of subtitling talent will become strained.

Early in 2020, content owners and distributors said they saw few delays in their work, other than issues related to worldwide lockdowns. Since then, the situation seems to have taken a turn for the worse, with a combined talent crunch and rising translation demands.

Large media localization providers have gone from working in 60-plus languages a few years ago to 100-plus, and non-English content is growing at an incredible pace. Mark Howarth, president of Iyuno-SDI, the largest media localization provider in the market, shared how his company has seen unprecedented attrition, both with freelance workers as well as in-house staff, a sign of an industry trend that plagues not only language service providers (LSPs) but content owners as well. He predicted “an insane amount of demand” for localization in the next 24 months.

“Massive, multiple streaming launches are expected to continue one after the other, fighting over the same demographic,” he said. “Unfortunately, they are not coordinated or scheduled in a manner to optimize the supply and demand on resources, and so it puts a huge strain on the supply chain.” This is bound to result in significant problems with sourcing media-trained talent at all lines of production.

How we handle this capacity constraint going forward will be one of the biggest challenges we will have to face as an industry.

Fortunately, a number of training initiatives have already been launched by individual LSPs. Netflix has taken this to another level, by funding a course on translation and adaptation for dubbing in collaboration with the Centre for Translation Studies at University College London, which made its debut in Latin America

recently and has plans to expand in Europe. In October, a group of well-known academics at the University of Warsaw also launched an online audiovisual translation (AVT) masterclass, aiming to offer continuous training to professionals in the subtitling market, with specialized courses to suit different skill levels, so as to enable speedy training and upskilling of professionals. They have invited other academics that specialize in AVT to join them, with the aim of broadening the offering in a number of languages.

RECRUITMENT ISSUES

While the training of new resources is tackled from many angles, in order to expand the pool of available resources to cater for the market demand, this does not fully address the recruitment issue that LSPs face.

The POOOL — an initiative spearheaded by OONA, one of the leading software developers in the media market — has been launched to close this gap and enable quick searchability of resources by creating an independent industry registry for professionals working in all areas of media localization. Freelance talent can self-register, detailing their skills and expertise, so they can more easily be connected to the 100-plus LSPs that have already become members during the beta release of the platform.

The POOOL is governed by a steering committee and an advisory board consisting of acclaimed academics in the field of audiovisual localization, as well as representatives of LSPs, translator associations and industry bodies such as MESA. They collaborate on the design of the platform to ensure its acceptance and usability both by individuals wishing to raise their visibility in the sector

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Panayota (Yota) Georgakopoulou is a leading audiovisual localization expert, specializing in the application of language technologies in media localization and the creative industries in general. She is the owner of Athena Consultancy, which offers services to high-profile organizations around the world, advising on strategy, business development, quality, tools, workflows, machine translation implementation, as well as talent sourcing and management. yota@athenaconsultancy.eu @YotaGeorg



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THE FUTURE OF LOCALIZATION: A QUESTION OF STANDARDS?

Netflix's Timed Text Authoring Lineage authoring format has transformative potential ... but will competitors realize its potential?

ABSTRACT: Will we soon see the localization industry embrace standardization and leverage data to drive efficiencies across the content supply chain? Could products like Netflix's Timed Text Authoring Lineage authoring format herald a new approach to localization? And will other M&E powerhouses get on board?

By Claire Brown, VP, Global Sales, Take 1

Netflix's new authoring format, Timed Text Authoring Lineage (TTAL), promises to streamline data exchange and file management for subtitling and dubbing. It's a development that could have a transformative effect on the industry ... but is it going to happen quickly?

The speed and scale at which the media and entertainment industry continues to evolve in the age of streaming never ceases to amaze. But while we are undoubtedly witnessing a golden age of content, the increased volume of production and growing global reach of many services have heralded some profound logistical challenges, encompassing everything from network distribution capacity to content localization.

The importance of the latter topic is something we can attest to at Take 1, where we focus on utilizing data-centric workflows to provide high-quality transcription, localization and access services. Like others in the sector, we have observed the phenomenal rise in demand for these services, paralleled by a rather less-pleasing growth in the complexity of data exchange. In no small part this is caused by the use of too many different script file formats in authoring and prompting, which serves to slow down the entire localization process.

But that could soon change. In July 2021, Netflix announced that it had decided to "remove the stumbling block" presented by multiple file formats and inconsistent localization information by developing a new authoring specification, TTAL. The format enables the seamless exchange of script files between authoring and prompting tools in the localization pipeline.

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WHAT MAKES TTAL TRANSFORMATIVE

The streaming giant explained that a TTAL file is able to carry “all pertinent information such as type of script, dialogues, timecode, metadata, original language text, transcribed text, language information etc. We have designed TTAL to be robust and extensible to capture all of these details.”

Netflix’s release of TTAL could be the impetus to change localization workflows across the industry, and as a company that has been active in this space for two decades and has always pioneered data-driven workflows, we believe that TTAL has transformative potential. Our clients already benefit from these workflows but, as a boutique service provider, making the case ourselves for a unified data format was always going to be challenging, with potentially limited impact.

Even in the face of increased competition from existing and emerging streaming services, Netflix boasts a subscriber base of more than 210 million, so logic dictates that there will be many post service providers who want to become early adopters of TTAL. It also stands to reason that the vendors in the Netflix Post Partner Program (NP3) will want to ensure that they are TTAL compatible. Providing a directory of vetted partners offering services in dubbing, audio description and scripting, the NP3 program promotes collaboration around audio localization to ensure that Netflix can deliver a consistently high-quality viewing experience worldwide.

From a vendor perspective, the roadmap is relatively clear in that they need to incorporate TTAL as a standard format in their platforms so that it becomes a regular option. Once that has happened across the market, dubbing houses and other post services can be supported to use it as a standard input format, making the entire data exchange process more swift and seamless.

WIDESPREAD ADOPTION?

But, as influential as Netflix remains, the broader indus-

WHILE WE ARE UNDOUBTEDLY WITNESSING a golden age of content, the increased volume of production and growing global reach of many services have heralded some profound logistical challenges, encompassing everything from network distribution capacity to content localization.

try will need to get behind the format if it is to achieve lasting traction. That means that other networks, streamers and content providers would need to adopt a format developed by their biggest rival. And, while the industry at large has made great inroads toward adopting a more collaborative approach in recent years, this may be too much to expect. Perhaps it’s more realistic to hope that other networks and platforms will recognize the benefits of TTAL and develop their own data-driven approaches, leaving standardization as the next challenge to conquer.

If this consistent data-driven approach to localization is going to become a reality, there will need to be a lot of coordinated intra-industry action. It is hoped that the existing leading industry associations, like MESA, DPP and SMPTE, can work together on this topic, along with other entertainment standardization forces.

Whatever the short-term outlook for TTAL, Take 1’s increased presence in the localization sector during the last few years has only reinforced our long-term view that a data-driven approach is the only logical way forward as content production and delivery continue to expand.

We see time and again the advantage of data-driven localization in terms of streamlining workflows and cutting costs. Now that one of the world’s biggest streaming services has decided to make this a major tenet of its strategy, we can only hope that the rest of the industry will follow suit. ■



Claire Brown is the VP of global sales for Take 1. During her 20 years working across multiple disciplines in the digital media and broadcast industry, from TV production to playout, media management, localization and access services, she’s held senior positions at international organizations including BBC Digital, National Geographic and Red Bee Media. hello@take1.tv @WeAreTake1



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ITALIAN DUBBING, FROM ROME TO MILAN

Italy's role in the birth of dubbing, and how two cities became different hubs for translation services today



ABSTRACT: Rome for movies. Milan for animation and TV content. The rich history of content localization in these two cities — and Italy in general — dates back nearly a century.

**By Giorgio Papetti, Director, Digital, Media,
Jinglebell S.r.l., a Keywords Studios Company**

The Italian dubbing industry prides itself on a very long tradition that began in Rome's Cinecittà Studios, and later expanded to Milan. Nowadays, Rome is tops when it comes to dubbing films, while Milan has an ever-growing leading role in animations and TV series.

At the beginning of the 20th century, it wasn't technically possible to record sound while filming, with images backed up by music played live by an orchestra physically located in the theater, or played on a gramophone. The first film with sound was released by Warner Bros. 1926 with *Don Juan*, in which some music and sound effects could be heard, but no spoken dialogue. In the following year, Warner Bros. presented *The Jazz Singer*, the first-ever movie in the world with synchronized dialogue. It was just a few lines — one of which was famously addressed to the audience — but it marked the beginning of a new era for cinema.

While film dialogue was an instant success in America, the concept initially struggled in Europe, partly due to theaters not being equipped for sound, but mainly due to national governments not willing to broadcast foreign language works.

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WHILE THIS LONG-RUNNING RIVALRY in the field of dubbing is bound to continue, it results in an even stronger offering of qualified suppliers and an expanding pool of professional voice actors for a constantly growing market.

The Italian fascist regime at the time was among the first to understand the huge potential of cinema as a means of control over the masses (as well as to oppose the use of foreign languages) so much so that they started replacing the original audio with captions displayed on a black background, or on a still image, resulting in awful viewing experiences and a disproportionate increase of a movie's duration (sometimes tripled).

At the time, Italy was a relevant market for the American film industry, and the big majors sought a solution: in 1929 Fox California Studios hired Augusto Galli to produce the Italian audio of a scene from *Married in Hollywood*. This was the birth of dubbing, initially produced in the U.S. by mostly using Americans of Italian descent.

Following the success of dubbing in Europe, Paramount created a central hub in France, where actors from various European countries would travel to dub their language releases. In 1932, however, an Italian royal decree established that any foreign film dubbed outside of Italy could not be screened in Italian theaters. Consequently, in that same year the first Italian dubbing studio opened in Rome, and the following years witnessed a real dubbing boom. Voice acting became an esteemed profession and some voice actors became actual celebrities, such as Paolo Stoppa, Andreina Pagnani and the little girl Miranda Bonansea, who was the Italian voice of Shirley Temple.

On Dec. 31, 1938, however, due to heavy Italian taxation on dubbing, most of the American film companies stopped exporting their movies to Italy. And shortly thereafter, World War II blew the entire dubbing market away. The dubbing industry was rebuilt only after the war ended: in 1945, the Cooperativa Doppiatori Cinematografici (CDC; Film Dubbers Cooperative Association) was founded, followed by the Organizzazione Doppiatori Cinematografici (ODI) (Film Dubbers Organization).

In the following decades, dubbing became increasingly important and sophisticated. Thanks to the spread of TV broadcasting in Italy, with the subsequent appearance of commercial channels, the so-called "Milanese school" flourished in the '80s, especially since the TV network "Fininvest" (later renamed as "Mediaset") began

to entrust the Milanese co-operative associations with the dubbing of Italian versions of cartoons and TV series. Along with the proliferation of television channels and OTT platforms, the demand for qualified voice actors increased steadily and, though cinema dubbing remains to this day an almost exclusively Roman domain, Milan gained a distinguished leading role in animation movies, cartoons, documentaries, and TV series.

In recent years, dubbing in the "capital of the north" has had a dizzying development thanks to the technologies and know-how of studios accustomed for decades to work both in the advertising field — where attention to quality and detail is obsessive — and on extremely complicated projects such as the dubbing and localization of modern video games. Such products often require the use of dozens of actors, who usually rely only on assets made of hundreds of fragmented script sentences and standalone reference audio tracks, and thus can't count on the typical linear narration of a film or a TV series, or the visual support of images and videos.

It's no coincidence that a company such as Jinglebell S.r.l. — with 40-plus years experience in audio production, localization and post-production — quickly became a globally recognized player in the dubbing field, to the point of joining a large international group such as Keywords Studios that can better support Jinglebell in offering its services to the Italian market.

In short, while this long-running rivalry between Milan and Rome in the field of dubbing is bound to continue, it simply results in an even stronger offering of qualified suppliers and an expanding pool of professional voice actors for a constantly growing market. ■



Giorgio Papetti is the director of digital and media for Jinglebell S.r.l., a Keywords Studios company based in Milan. A computer science expert and journalist, Papetti has been involved in localization, dubbing and media production since 1992. papetti@jinglebell.com @keywordstudios

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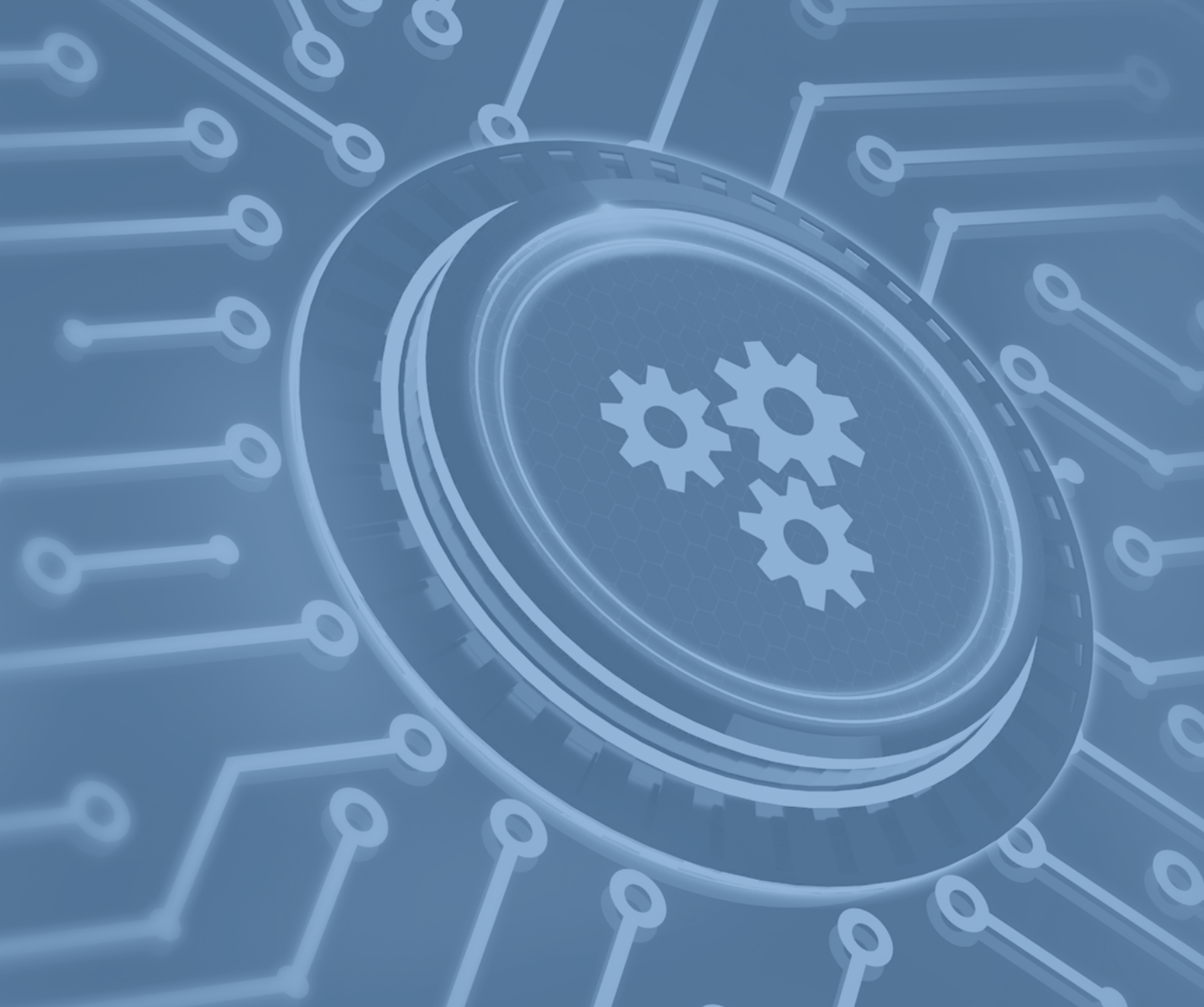
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GETTING RIGHTS RIGHT — AND ROYALTIES, TOO



The need for agility in the cloud for the media industry

ABSTRACT: Over the past two years, powerhouse players have been making dramatic moves in the industry: Amazon acquiring MGM, AT&T's merger with Warner-Media has now become Warner-Media's merger with Discovery, and Viacom/Paramount with CBS. Few can accurately predict how the changes happening today will alter the media landscape over the long term. If industry change is the rule, then business agility is the response. For all their dynamism and creativity, media companies seem to struggle on the business agility front.

**By Amos Biegun, Global Head,
Rights, Royalties, Vistex**

It's no secret that the media industry is in a period of major flux. Modern-day distribution channels are actively acquiring studios and content providers — a distinct change from the days when content creators owned their respective distribution outlets.

With increasingly more sophisticated — and, dare I say, “demanding” — customers, media companies have been pioneers in the cloud, driving new distribution models such as direct-to-consumer streaming. Where media companies often lag behind, however, is in the area of flexible back-office business processes.

BEAT A RETREAT FROM THE SPREADSHEET

My key area of focus is media rights and royalties, an aspect of the media business that demands more streamlined and agile processes.

Managing rights and royalties is exceedingly complex. The business units that touch processes for rights and royalties are themselves diffuse and spread out far and wide across the enterprise. After years of M&A activity, many of these units use either isolated

solutions (sometimes referred to as spot solutions) or homegrown systems to manage the associated data.

Far too much organizational muscle and manual effort goes into aggregating this data. Historically, this work has been performed or augmented by spreadsheets, which don't lend themselves to agility. Today's media companies need a smarter and more automated approach that yields real-time insights and the ability to make decisions in the moment.

BUY-OR-CREATE DICHOTOMY OF CONTENT

There is little doubt that content remains king in the media and entertainment industry. More content is being developed and consumed faster across an increasing number of platforms. There are two ways to get content: you can either buy it or create it.

Buy it In my opinion, Amazon's recent acquisition of MGM is a recent example of buy it. What Amazon gets is an extensive library of content which it will exploit on Amazon Prime Video and which will need to go through a licensing process. This will give Amazon complete control over this content, rather than going through the licensing ringer, allowing it to exploit those rights on its platform for a given amount of time across designated geographies.

Create it Many media companies, of course, have gone increasingly in the other direction and are now in the business of creating their own content. With this approach, you typically hire third parties — including writers, directors, actors, and production crews — to produce the content. In the end, and after what can only be described as a long, difficult, and risky process, you have your content.

With both approaches, you're required to manage and honor all the associated rights and royalties for all parties per the contracts governing the deals. Each approach has unique complexities. For example, when purchasing an existing library, a primary challenge is bringing the content in-house and integrating any data into your own systems. This is a classic M&A challenge

WITH THE CLOUD, you can see everything from anywhere, make decisions quickly and move promptly when opportunities arise. During this period of change and dynamism in the media industry, agility is needed not only to survive, but to thrive!

that can have a significant impact on the customer experience. If Amazon cannot quickly integrate the new MGM content onto its Prime platform, customers will look to stream it elsewhere.

For newly developed content, the challenge is entering the contractual data, including that governing rights and royalties, into your existing systems and then managing the details. For instance, a new series will have seasons, episodes, and distribution details across geographies and platforms — all of which impacts the way you manage your rights and distribute royalties. And that's without factoring in any elemental rights such as music content that was used, which comes with additional levels of complexity.

The flow of rights and royalties can be bidirectional. Your company may owe royalties, but it may also seek to collect them when you are selling or licensing content to other platforms. Try tracking all this with spreadsheets or without a system designed to manage these intricacies!

REACH FOR THE CLOUD

These issues speak to the need for a cloud-based, standardized approach for media companies to manage rights and royalties across all owned content, regardless of where in the world that content resides. Moving foundational business processes to the cloud suddenly presents a variety of options.

With the cloud, you can see everything from anywhere, make decisions quickly, and move promptly when opportunities arise. During this period of change

Continued on page 134



Amos Biegun is the global head of rights and royalties for Vistex. With more than 25 years of experience in the enterprise software industry focusing on intellectual property rights management and royalties, he has led Vistex to be the largest supplier of rights management, licensing, and royalty processing software to the music, film, TV, brand, merchandising, and intellectual property industries worldwide. amos.biegun@vistex.com info@vistex.com

THIS IS YOUR CLOUD WITHOUT BARRIERS

Communication, leadership and technology all must work together

ABSTRACT: Few industries pose as many storage challenges as media and entertainment. Today, more content is being produced than ever under demanding schedules and tight budgets. In this high-stakes environment, cloud storage has become an essential tool for production backup, remote collaboration and content archiving.

By Whit Jackson, VP, Technology Alliances, M&E, Wasabi Technologies

Modern media workflows are all about flexibility, scalability, and the ability to collaborate over distance. Does that description fit the media landscape of 10 years ago? Five? If there's one thing we know for sure it's that the foundations of our industry are shifting, and fast. Getting caught flat footed in a changing environment can have disastrous consequences. No one wants to be the Blockbuster of their day.

One way to stay nimble is to remove barriers. Do you know why the 400m dash is faster than the 400m hurdles? No barriers. Barriers tend to be broken down into two main groups: people driven barriers and technology barriers. If you think about things like communication, leadership, collaboration and process, you start to get an idea as to the soft skill side of the challenges that come with streamlining modern media workflows to optimize output and reduce cost. For example, if there is poor communication which can cause misalignment of expectations, then you get a team that doesn't function optimally. The dysfunction that results can create a frustratingly inefficient work environment that leaves deadlines missed and deliverables incomplete.

Similarly, a lack of solid leadership to provide a vision for the roadmap of success can also lead to barriers, preventing organizations from staying competitive and realizing their full potential. Without the proper leadership to measure and course-correct as needed, teams can struggle with execution of said roadmap and fail to implement their strategy quickly

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IF THERE'S ONE THING WE KNOW FOR SURE it's that the foundations of our industry are shifting, and fast. Getting caught flat footed in a changing environment can have disastrous consequences. No one wants to be the Blockbuster of their day.

and efficiently. You can't have creative collaboration without visionary leadership and effective communication. Seldom are product launches done in a silo or from a single person. It takes a village as they say, so not having these skills will become a significant barrier to successfully implementing modern media workflows.

Technology is another major piece of the barrier equation that must be worked out so that teams with strong communication, leadership and collaboration skills can also have the tools they need to be successful. In today's fast-paced environment, you can't wait for servers, compute power or bandwidth to be allocated based on older, on-premise datacenter paradigms. Having the type and amount of compute power, coupled with things like AI and machine learning, can encourage faster failures to lead to successful innovations. Whether you're talking about pre-production, post-production, transcoding or rendering, having a solid technology stack that is available on-demand (i.e., in the cloud) is critical to being able to digitally transform.

If you remove barriers to access and visibility, everyone who needs a piece of content can summon it at a moment's notice, from anywhere in the world. Editors seeking a particular piece of B-roll can find it with a simple search powered by AI. Producers see the most up-to-date version of their projects as soon as changes are made. A centralized, cloud-based lake of data accessible to an entire organization does away with the hurdles of how we used to do things: navigating email chains, WeTransfer links, zipping and unzipping files, and the endless searching, searching, searching for what we need at the moment it's needed.

Imagine a world where applications work together seamlessly. Editing software is integrated with your storage, giving directors a bottomless pool of clips,

which can be instantly added to your timeline. Content distribution is linked with your central content repository, making it easy for your audience to consume your entire library. Removing these barriers to interoperability makes for a greater ecosystem for users to create the way they want, and for new avenues of monetization to arise.

Another important consideration in today's world is data integrity and security given the multitude of ransomware attacks that occur throughout the world in every industry. Imagine spending millions of dollars and years of work to create content, and then one day having it stolen and held for ransom simply because the right technologies were not in place to mitigate the risk in the first place. Even if you pay the ransom, there is a very slim chance you will actually get your data back intact.

It's a world where protecting your content is as intuitive as knowing when to cut, where features like immutability and object locking come standard to keep your content safe from the hands of time and out of reach of hackers and bad actors who might wish it harm.

The biggest players in media have made it clear that the old way of doing things is behind us. Apple, Viacom, and NBCUniversal have all launched streaming services within the last two years in attempts to reach audiences in their homes and on their phones. WarnerMedia's paradigm-shifting day-and-date rollout strategy for their tentpole releases sent a clear message that the way of the future will be digital and direct-to-consumer. You may not be Disney or Netflix, but you can take a cue from the most profitable names in entertainment all the same: the times they are a-changin'. ■



Whit Jackson is the vice president of technology alliances and media and entertainment for Wasabi Technologies. He is driving the adoption of Wasabi hot cloud storage in media and entertainment creation and distribution. wjackson@wasabi.com @wasabi_cloud

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THE FUTURE OF MEDIA PRODUCTION: FASTER, CHEAPER, AND MORE SECURE

Realizing the vision to bring workflows to your content



ABSTRACT: Today, M&E companies leverage technology solutions to unleash themselves from traditional frameworks and content silos — helping creative teams work faster and more collaboratively. As tools increase, defining workflows that emphasize security as much as convenience are critical. Tomorrow's workflows must combine a Least Privilege Access model with a Least Locations model to facilitate security and integration while simultaneously increasing workflow efficiency.

By David Rosen, VP, Cloud Applications, Solutions, Sony Electronics Professional Solutions of America

M&E companies leverage disconnected technology solutions to help creative teams work faster and more collaboratively. As the number of tools increase, defining workflows that emphasize security as much as convenience is critical. Tomorrow's workflows must combine a Least Privilege Access model with a Least Locations Storage model to facilitate security and integration while simultaneously increasing workflow efficiency.

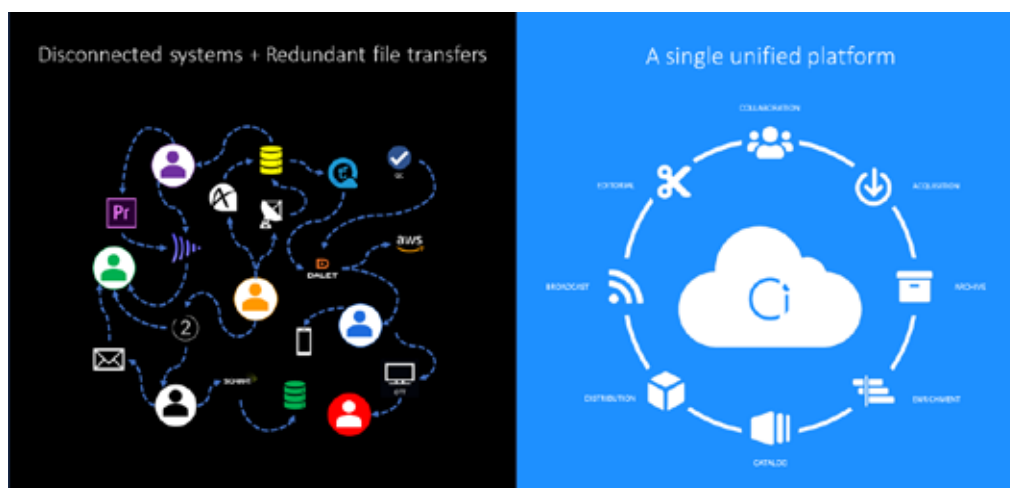
THE EVOLUTION OF REMOTE WORKFLOWS

Remote workflow is here to stay. The trend towards remote content production started well before the pandemic. However, the pandemic accelerated the trend and forced it to expand to all aspects of the media life cycle. Even work that was being done in the same city shifted to remote as work-from-home took hold and meeting in person was limited.

This rush to remote workflow was accomplished by making as many copies of the content as necessary and sending them wherever the creative talent happened to be. While this allowed remote work to proceed, it was less than ideal. Large file transfers can take hours or days to complete — costing the production valuable time. Copied content requires redundant storage and additional bandwidth to be purchased which costs the production more money. More concerning is the fact that every storage location becomes an additional threat vector that needs to be protected and managed.

Remote workflow needs to evolve to a “Least Locations” model where rather than moving content to each process, the process

WORKFLOWS BEFORE AND AFTER



A visualization of workflows before and after a unified platform approach.

moves to where the content is stored. In the same way that the Least Privilege Access model is used in software and supply chains to minimize risk exposure, the least locations model must be used in remote workflow to minimize the expanding risk of storing content in multiple locations. This is imperative for three business-critical reasons: improving security, decreasing costs, and increasing speed.

The core tenet of the least locations model is to minimize copies and maximize access. As a result, storage costs are reduced, time lost to file transfers is regained, and security can be consistently applied and tightly focused.

A NEED FOR CLOUD-NATIVE MULTI-FUNCTIONAL SOLUTIONS

The cloud provides an ideal foundation to build scalable solutions that adhere to the least locations model and vendors have begun to offer cloud-based SaaS solutions which take advantage of that. However, most vendors offer a single function such as transcoding, file transfer, or collaboration, and, as a result, production teams must still move content from service to service. What is needed is a solution that provides multiple post-production services while at the same time allows secure and centralized access to other additional service providers.

Sony's Ci Media Cloud is such a solution. Built on top of AWS, Ci is a SaaS solution that offers five

key services that every production needs: high-speed transfer, live real-time collaboration, asset management, transcoding, and archive. All of these services use the same shared storage, meaning no additional copies are required. And since Ci can integrate with the production's AWS S3 bucket, the production can authorize multiple vendors or solutions to access it. Alternatively, Ci can programmatically provide access to other applications. This approach provides the additional benefit of ensuring all content interactions are centrally logged across all applications for audit purposes.

LEAST LOCATIONS MODEL IN VFX WORKFLOWS

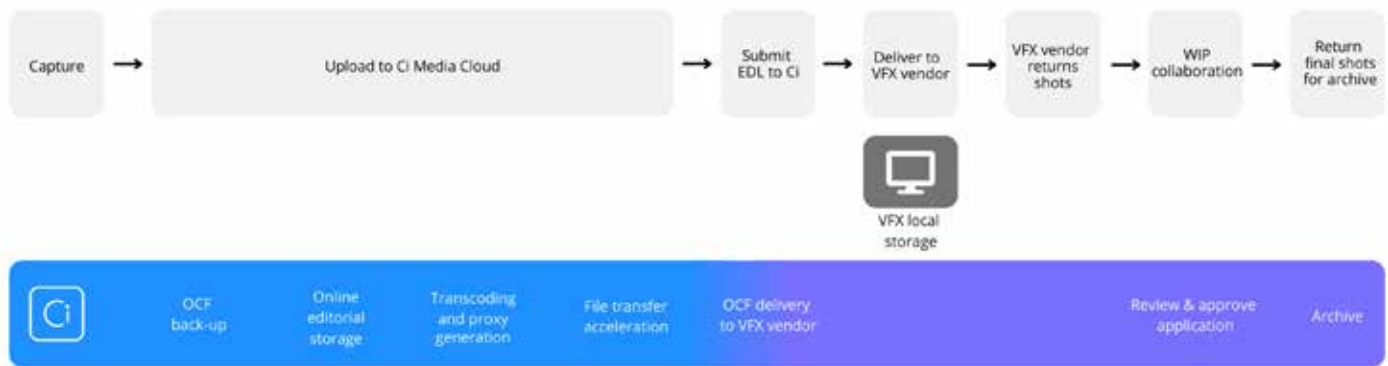
The VFX workflow provides an excellent example of how the least locations model can be employed to not only improve security and reduce costs but also to dramatically improve speed and efficiency. To highlight that, let's look at the traditional VFX workflow and then compare that to an alternative using Sony's Ci Media Cloud.

After capture, content is backed up on hard drives, copied to online editorial storage, and backed up to LTO. Content is then stored in a temporary file transfer location to be delivered and stored at the VFX company. When work is ready to be reviewed, cuts are uploaded and stored in yet another collaborative review application and repeated until a final version is approved. Once approved, final files are transferred



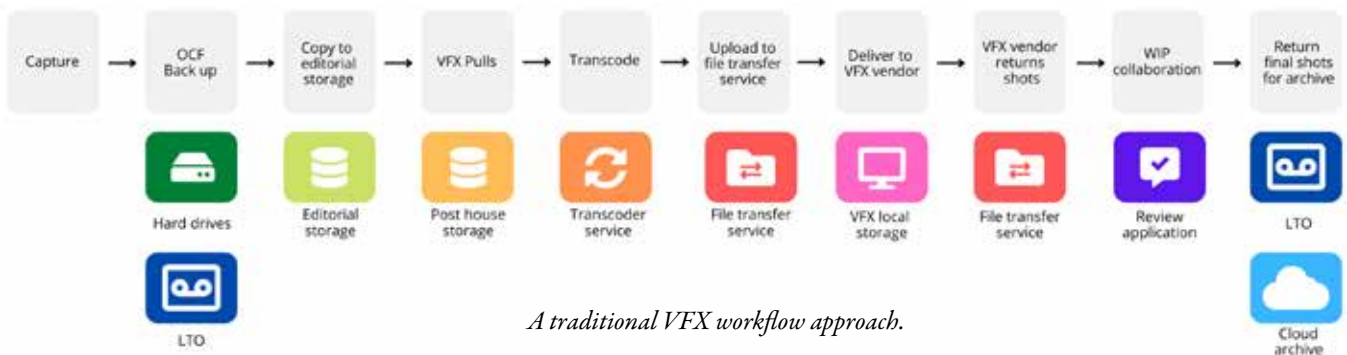
David Rosen is VP of cloud applications and solutions for Sony Electronics Professional Solutions of America, where he has global responsibility for leading Sony's Ci Media Cloud SaaS business. As one of the original founders, he has grown the business from inception into the largest and most profitable SaaS company in Sony's history. david.rosen@sony.com @SonyProUSA

VFX WORKFLOWS WITH CI



A VFX workflow with Sony Ci.

TRADITIONAL VFX



A traditional VFX workflow approach.

from the VFX vendor to the production company. That is a lot of file transfers and storage that need to be paid for and protected. The VFX pull workflow has room to benefit from the least locations model.

Sony's Ci Media Cloud has added functionality that allows that same VFX workflow to happen with 80 percent fewer storage locations while making the entire process faster and more secure.

Rather than backing up Original Camera Files (OCF) to LTO, they can be uploaded directly to Ci and stored in the production's bucket. Once safely backed up, Ci creates preview proxies so that the content can be securely viewed from anywhere. When an editor needs to pull shots and deliver frames to the VFX vendor they can simply submit an edit decision list (EDL) to Ci to initiate the workflow. Ci locates the referenced OCF that was previously backed up, converts the referenced clips into the desired output format, and dynamically provisions access to just those frames directly to the VFX vendor and notifies them when delivery is complete. The VFX vendor can then assign specific shots to specific artists.

All of this happens without leaving Ci and with the content stored in a single, secure location. When it is time to review the VFX shots that have been created,

they are uploaded back to Ci where the built-in video review tool is used for real-time playback, commenting, and annotation. This ensures that the original content and the created content reside in the same storage location — making the eventual handoff to the archive team very simple.

A LOOK AHEAD

This use of the least locations model is a significant step in the right direction, however, there is more work to be done. Different applications require storage with different performance characteristics. For example, online editing requires incredibly fast storage while archive storage can be slower. Until this changes, there will need to be multiple copies. In addition, productions may consume services from different public clouds necessitating at least one copy in each cloud.

The goal of the least locations model is to minimize copies and maximize access while working within current technological constraints. As more software vendors move to cloud-native architectures they must keep this as a foundational tenet and treat seamless interoperability and workflow efficiency as first-class product features. ■

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COULD AUTOMATION BE THE KEY TO KEEPING CREATIVES CREATIVE?

It's time for solutions that help creatives prioritize imagination over administration



ABSTRACT: As digital transformation accelerates, demands on creative teams to create more content, more quickly, continue to grow. To succeed, organizations must rethink how they scale content creation by optimizing workflows. Adobe's automation tools, via scalable cloud services, automate tedious production tasks while allowing designers to retain full creative control.

By Landon Giss, Product Manager, Derek Lu, Principal Solutions Consultant, and Emily Palmer, Solutions Consultant, Adobe

There comes a time in most jobs where the work you do starts to feel less and less like the work you signed up for.

This is particularly true in the creative world. You finally secure a job in your dream industry, and you're ready to spend your days making stunning visuals, producing music, or conjuring worlds on film. But suddenly it dawns on you that you're spending your actual hours doing mundane tasks. Applying the same process to file after file; image after image; frame after frame.

Today's creative teams are spending less time being creative, and more of their time cycling through processes. And in our multi-platform, multi-format world, the demands for "more" are only getting louder.

Automation has frequently been presented as a counteragent to creativity. But, when applied in the right way (such as in automating mundane, repetitive tasks), it offers a vital opportunity for creative professionals to reclaim their time and withstand the demands that are now commonplace in their industries.

WHERE WE ARE NOW

At Adobe, we have frequent conversations with creative teams about their ideas, plans, and challenges. As these teams plan for the next few years, they acknowledge that the volume of output they'll be required to produce will need to scale (possibly beyond their capacity).

This can be exciting, but it has a cumulative effect on the people they employ. And many of these issues have only been exacerbated by the COVID-19 pandemic, as teams disperse to work remotely, and the line between work and home life blurs.

Earlier this year, we decided to delve deeper. Adobe's "Future of Time" study surveyed more than 5,000 workers and leaders from small and medium businesses (SMB) all over the world. It investigated how we now think about time, and how we spend it.

It revealed that 48 percent of enterprise workers — and 61 percent of SMB leaders — feel pressured to be on-call "around the clock," while 53 percent of workers and 57 percent of SMB leaders feel constantly stretched for time at work.

Furthermore, these creative people believe they are spending too much time on tasks that get in the way of doing their jobs effectively. For example, workers say a third of their week is spent on unimportant tasks. Ninety-one percent are hungry for tools that can make these processes more efficient, or free up their time. And more than half would be willing to switch jobs in order to access these tools.

On top of that, 24 percent of employees have experienced burnout over the last year. This means that businesses that value their talent need to take steps to protect both their time, and their mental and physical health.

In truth, while the pandemic has accentuated many of these issues, they weren't exactly unfamiliar to creative workers before COVID-19. A single piece of content now often needs to be repurposed for a variety of uses — across multiple social channels, different screen sizes, media formats, and in many languages. That means resizing, adding metadata, and much more. And with that comes a higher risk of human error, and the possibility that you'll need to return to the task to correct mistakes that may impact multiple files.

Ambitious teams are left with a choice: Ask more of creative professionals, and risk them burning out and leaving; recruit more staff to tackle the more mundane tasks; and free up top-level talent for the creative flourishes. Or embrace tools that automate those repetitive tasks, and help creatives achieve more with less.

THE NEED FOR AN END-TO-END SOLUTION

Automation is the clear solution to solving these workflow challenges in a scalable and future-proof way. However, the big questions at hand are how to seamlessly introduce automation into workflows and which tools will best serve that need.

In recent years, companies have invested heavily in digital transformation. The days when a post-production editor

AMBITIOUS TEAMS are left with a choice: Ask more of creative professionals, and risk them burning out and leaving; recruit more staff to tackle the more mundane tasks; and free up top-level talent for the creative flourishes. Or embrace tools that automate those repetitive tasks, and help creatives achieve more with less.

would fly cross-country with a hard drive are dwindling, and not just because of COVID-19. Companies now offer tools and services which operate in the cloud, providing solutions for both common and niche tasks.

While there are many great tools out there, we believe Adobe is best placed to address this problem. Switching to a standalone tool that automates part of the production process might solve some issues but could also force creatives to adapt to a new, unfamiliar workflow. Adobe offers a suite of tools that are already embedded in the workflow of many creatives and have been for many years. This allows them to automate their workflows without losing the comfort, control and consistency that comes with working with the tools they know well.

In addition, our cloud-first approach means that our tools are regularly updated, adding new features and capabilities. This means that all customers get access to the same opportunities for collaboration and automation. We also offer

Continued on Page 134



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Landon Giss is a seasoned product manager at Adobe, where he drives Adobe business strategy for usage-based products such as Stock's enterprise and Creative Cloud APIs. He works with the largest businesses in the world to help them meet their ever-increasing content, creative and delivery demands. rgiss@adobe.com @Adobe



CONTENT IS STILL KING

But managing and monetizing it today brings new challenges

ABSTRACT: Ateliere has seen an increase in studios and content owners not knowing what is in their content libraries and wanting to streamline and consolidate what they have. Additionally, the proliferation of global distribution points has created a mass of content versions and duplication. One of the ways this industry issue can be addressed is by using componentized master content. Here we delve deeper into these issues, how they have been addressed in the past and how to help resolve them.

By Bill Admans, COO, Ateliere Creative Technologies

Are we living in a golden age of content?

For consumers, quite possibly yes, with more viewing options and greater access to more titles than ever. For studios and content owners, the answer is not always as clear.

The global demand for diverse media titles across multiple platforms in multiple formats is increasing at an accelerated rate. Yes, higher content demand creates more business for everyone, but it can also fill libraries to almost breaking point. The sheer volume of titles currently in many studios' catalogs can make it difficult for them to manage, locate, deliver — and monetize — their content.

Combine this issue with simultaneously occurring industry trends such as compressing timelines, complex delivery requirements, and heightened customer expectations and it

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ONCE CONTENT ASSETS are consolidated into a single in-house cloud location, studios can perform an archive discovery process to comprehensively analyze each of the titles in the library, their formats, and state of readiness.

becomes clear new types of content management and workflow orchestration are needed.

This creates challenges but also significant opportunities for media supply chain partners like Ateliere Creative Technologies (formerly Ownzones).

The content landscape has undergone a series of changes over the last 15 years, moving from physical media, such as film and tape, to digital and file-based content. All this occurred rapidly, and the development of efficient and elegant infrastructure technologies couldn't keep up.

Many large enterprises built their own infrastructure around proprietary storage library environments, tying up a lot of capital investments in the process. However, these solutions typically involved manual processes and didn't enable the levels of content management or flexibility necessary to keep pace with the rapid proliferation of titles and growing consumer demand.

The result: thousands, if not tens of thousands, of files, all in different places and different states of readiness. A studio may have 60 files of a movie, but they might not know what each of those 60 files represents. Is it the Spanish language version for cinema versus Spanish language version for television? Is it 1080P, 4K, PAL or NTSC, REC 709?

The optimal solution is for content owners to regain control of their digital supply chain by bringing it in-house and onto a cloud platform. With cloud-based orchestration, they can realize the benefits of fully automating the process of managing, repackaging, and delivering content. These include reducing the transcoding time for a title by 35 times and reducing library storage footprint by up to 75 percent — all contributing to total annual savings of millions of dollars.

Once content assets are consolidated into a single

in-house cloud location, studios can perform an archive discovery process to comprehensively analyze each of the titles in the library, their formats, and state of readiness. They can identify the many duplicates in the library as well as the many assets that may have become “orphaned” over time.

All these different files need to be matched together. This process can be streamlined by using the Interoperable Master Format (IMF), the SMPTE standard for enabling efficient content management and distribution.

The beauty of IMF is that you're able to easily find the most common version and make that your master track. Only the differences need to be saved for the other versions. Creating an IMF library of total assets allows you to catalog all titles and group different localized versions with related metadata into single easy-to-manage packages.

Really, it's all about the metadata — the data that describes other data. For any title, opening credits are usually different by region, the title is different, credits like executive producer will be different, and the same goes for the closing credits, audio, subtitles, and any text pieces or changes made for regional compliance. All the scenes in the middle tend to be the same, or common, and we're able to track all this in a single package using rich metadata.

We can create virtual versions in a content playlist, which tells the system to play different pieces depending on delivery requirements. For each alternate version, we're only saving the different elements and then pointing to the common elements to bring all those files together into one package. Now, they don't get lost as easily as they did before, and the whole library is more organized and searchable.

Continued on Page 141



As chief operating officer, Bill Admans leads the operations, media services, human capital, and marketing teams while working closely with the CEO to continue developing and executing the growth and innovation strategy that makes Ateliere the premier cloud platform for creative and supply chain workflows. bill.admans@ateliere.com @TeamAteliere



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DEFINING THE 'CLOUD' MEANS DEFINING YOUR PRIORITIES

What does cloud access and scale mean in the new normal?

ABSTRACT: The “cloud” has been more than a buzzword for over a decade. It has become an integral part of our everyday lives. From backing up files to what you’re going to watch on TV next, the “cloud” is a part of that experience. But what does the cloud mean to media and enterprise companies and how can it help improve their efficiency?

By Dennis Radeke, Director, Sales, LucidLink

There are a lot of different “cloud” services, and I don’t put it in quotations to be dismissive. Rather, we should realize there are different definitions depending on what our priorities are.

For example, there are several emerging ideas as to what “camera to cloud” means. One definition would be capturing the content on local drives and then quickly pushing a proxy version to the cloud for editing and collaboration. Another definition would be capturing live, full resolution video directly to a cloud storage system. Both have merit but one may have more value to you than the other depending on your workflow.

For LucidLink, the cloud facilitates uninhibited content creation regardless of where the content is in relation to the creatives. No longer must the work be near the worker. As companies around the world are adapting to permanent remote or hybrid type work, LucidLink Filespaces become a key solution in the new normal.

How we access content is changing. By the end of 2021, remote workers will represent 32 percent of all employees. Cloud usage and workflows will continue to increase and some of the most used services will include Microsoft OneDrive, Google Drive and Dropbox. These types of services are called “sync and share” because they all offer the ability to synchronize content in the cloud and provide access to teams of people. These solutions



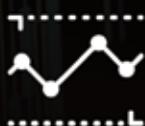
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AS THE CLOUD CONTINUES TO MATURE, I believe we will be able to scale up storage as we need it, transparently. Egress is ultimately a dead end. Companies will only pay for what they use — whether an increase in storage size or when you need to access your data.

are simple to use, work with any program, globally accessible and can scale to any size.

Then why aren't more companies using these with creative media? Part of the answer is that few people would call these solutions fast. Solutions like these utilize replication or copying of the content to every user, and it takes time for files to get up to the cloud and then more time for it to trickle down to the others who have access.

With LucidLink, we provide instant access to the content with no waiting for copying files to many users' computers. Changes to a folder on a LucidLink Filespace happen instantly while you watch. There is an added benefit here as well: LucidLink provides a "single source of truth" that everybody has access to. One storage location for all users regardless of location. This is important for a couple of reasons. First, it removes the chances of duplicate files because everyone can see and search across the Filespace. Second, the single source of truth helps facilitate collaborative workflows whether designed like a MAM or ad hoc within your team. For example, multiple people can work on a Premiere Pro project through Adobe's Team Projects or Productions technology and that only happens because all the data is in a single location. Finally, companies can hire the best people and not worry about where they are located.

Accessibility, and more importantly, the immediacy to the content can vary widely. This is a fundamental advantage that LucidLink brings to customers.

LET'S TURN OUR ATTENTION TO THE IDEA OF SCALE.

One of the very best aspects of moving content to the cloud is the ability to increase your storage on-demand. Not only is it infinitely scalable, but you are only charged for what you use. This has huge implications as more and more companies move away from capital expenditures.

Many companies have purchased large racks of storage that provided fast access and performance throughout the building or network. Ensuing produc-

tivity increases. However, as time passes, the storage pool becomes full, and companies are faced with how to add on to the system or bring in something new entirely. Both choices can become costly decisions.

The world will always need more storage and the world's appetite for more is increasing, but until the cloud came along, you couldn't easily add capacity on-demand.

However, with some solutions, replication can still be an issue and your drive is getting filled up without you even knowing it. With object storage systems, when you want to retrieve something, you are egressing the entire file and therefore being charged a fee to do so.

Using a LucidLink Filespace and an object storage platform like IBM, AWS, GCP, Azure or others, you have the scalability of the cloud, but only pay for what you use. You are not weighed down with replicated files or being forced to egress (download) the entire file if you don't need it. Here's an example: If I have a 10-minute long clip that I need to get ten seconds from to cut into a shorter piece, I have to egress the entire clip in order to get those ten seconds. If that file is 10GB in size, not only do I lose time, but I am paying a fee to access my content! In contrast, accessing the same file through LucidLink, you only access the content you need, and the egress is a small fraction of what you would have had otherwise.

As the cloud continues to mature, I believe we will be able to scale up storage as we need it, transparently. Egress is ultimately a dead end. Companies will only pay for what they use — whether an increase in storage size or when you need to access your data.

One size doesn't fit all, and every solution will inevitably have its pros and cons. ■

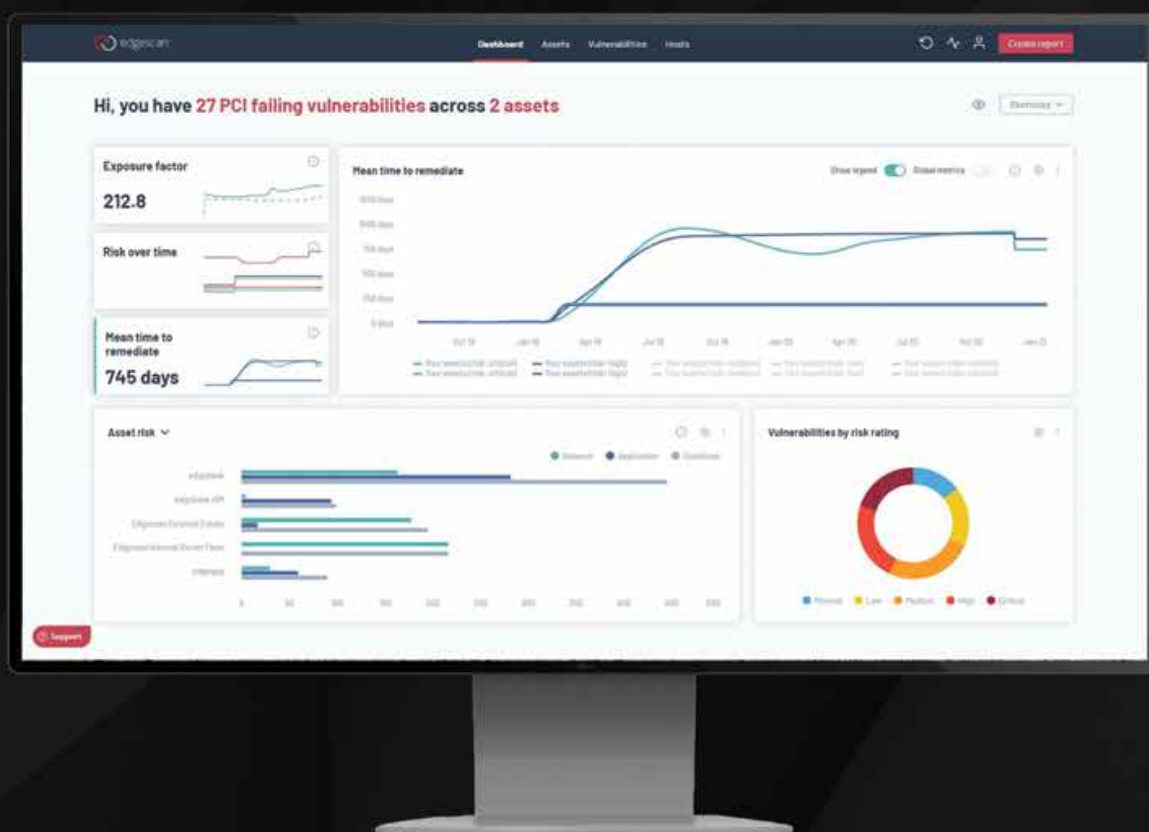


Dennis Radeke is the director of sales for LucidLink and has worked with media and entertainment companies, large enterprises, and creatives for more than 20 years. His experience in creative workflows, broadcast, and enterprise production were developed during a long career in video with Adobe.
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THE ROADMAP TO M&E'S FUTURE

Transforming the industry with a new approach to content

ABSTRACT: As workplaces continue to evolve, we're witnessing the lasting impacts of distributed teams, widespread digital transformation, and an increasingly complex and high-stakes security and regulatory environment. This new reality represents both a challenge and an opportunity for companies to move to more secure, collaborative, productive ways of working. And at the center of this opportunity is content.

By Jade McQueen, VP, M&E, Box

The media and entertainment industry runs on content. Talent agreements, scripts, production specs and marketing assets, content is your business. Files like these are at the heart of every process in media and entertainment.

As we continue on our mission to ensure that every organization can get the most out of their content, we are excited to share with you three key ways the Content Cloud is transforming your industry:

PROTECT YOUR CONTENT: FRICTIONLESS SECURITY, COMPLIANCE

A 2018 survey found that 51 percent of media and entertainment companies experienced three or more cyber-attacks over a 12-month period and, according to industry reports, cybercrime could cost the world \$10.5 trillion annually by 2025. Phishing remains the most common type of cyber-attack, but ransomware and malware are also on the rise.

At Box, we're continuing to protect your content with built-in, deep learning-based malware detection in Box Shield, so you can discover and contain the spread of malware before it becomes a data breach or a significant loss of business continuity. Box Shield customers benefit from malware detection on active files — files that are uploaded, shared, previewed, downloaded, or otherwise acted on — that touch their Content Cloud, which reduces the risk of ransomware and other



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novel malware attacks. But threat detection is only half of the story. We've enhanced Shield Smart Access to give you more ways to manage classification with: auto-classification for additional info types (including Canadian PII, such as Canadian bank account and Social Security numbers), auto-classification based on file type (including both common and proprietary file types, so you protect your IP and regulated data), and added support for classifying historical content whenever a user views, shares, or downloads it (in addition to auto-classification for new uploads).

EMPOWERING PEOPLE: SEAMLESS COLLABORATION, WORKFLOW FROM ANYWHERE

To ensure teams can be productive from anywhere, we're excited to bring you an enhanced Box Mobile app with new features like intelligent Capture Mode. That means you can upload photos, audio, or videos directly to Box, and file metadata will auto-populate. Plus, with built-in optical character recognition (OCR), you can scan documents on set or in the studio, and instantly convert them into searchable PDFs.

To capture ideas in real time or edit concepts, we now have an all-new Box Notes, designed to enable more seamless team collaboration. Box Notes will include capabilities to power rich, high-value content creation, like in-line collaborator cursors, rich embeds, code blocks, enhanced table features, and more. We're also simplifying content organization and navigation within Box Notes, with automated table of contents, anchor links, and more. We believe these new features will power an even broader range of collaboration activities such as virtual writer rooms, pre and production operations, and much more.

We also launched Box Sign, our new, natively integrated e-signature solution delivering unlimited e-signatures via the web application. Our robust set of Sign APIs enables customers to integrate Box Sign into their custom applications.


New features have added more flexibility into Relay workflows for users, admins, and developers: Scheduled workflows let you set a Box Relay process to kick off on a regular cadence (daily, weekly, etc.), and workflow ownership transfer empowers you to reuse and scale workflows you've created by transferring them to anyone in your

THE MEDIA AND ENTERTAINMENT industry runs on content. Talent agreements, scripts, production specs and marketing assets, content is your business. Files like these are at the heart of every process in media and entertainment.

organization. And finally, our workflow trigger API lets you trigger a Box Relay workflow from an external system or application.

MANY WORLDS, ONE UNIVERSE: INTEGRATED WITH ALL APPLICATIONS

New enhancements to our Box for Slack integration enables users to use Box as their content layer in Slack — so that any file you share in Slack (or any in-progress work you want to revisit) can be seamlessly stored and managed in the Box Content Cloud. This summer we launched the new Box app for Zoom, which lets you directly access Box from within Zoom to provide a more seamless experience between the two platforms. Earlier this year we announced a new integration with Dolby that makes production-quality audio as simple as uploading a file to Box. With this new integration with Dolby.io, companies using Box can offer their users seamless and cost-effective audio enhancement tools that leverage Dolby's decades of expertise enabling best-in-class entertainment experiences, all within the Content Cloud. Finally, we acquired leading content migration vendor Cloud FastPath, powering the all-new Box Shuttle to help organizations of all sizes migrate content into Box at petabyte scale. We also released new self-service tooling for Box Shuttle, so organizations can easily migrate smaller amounts of content on their own, at minimal cost — or, in some cases, completely for free.

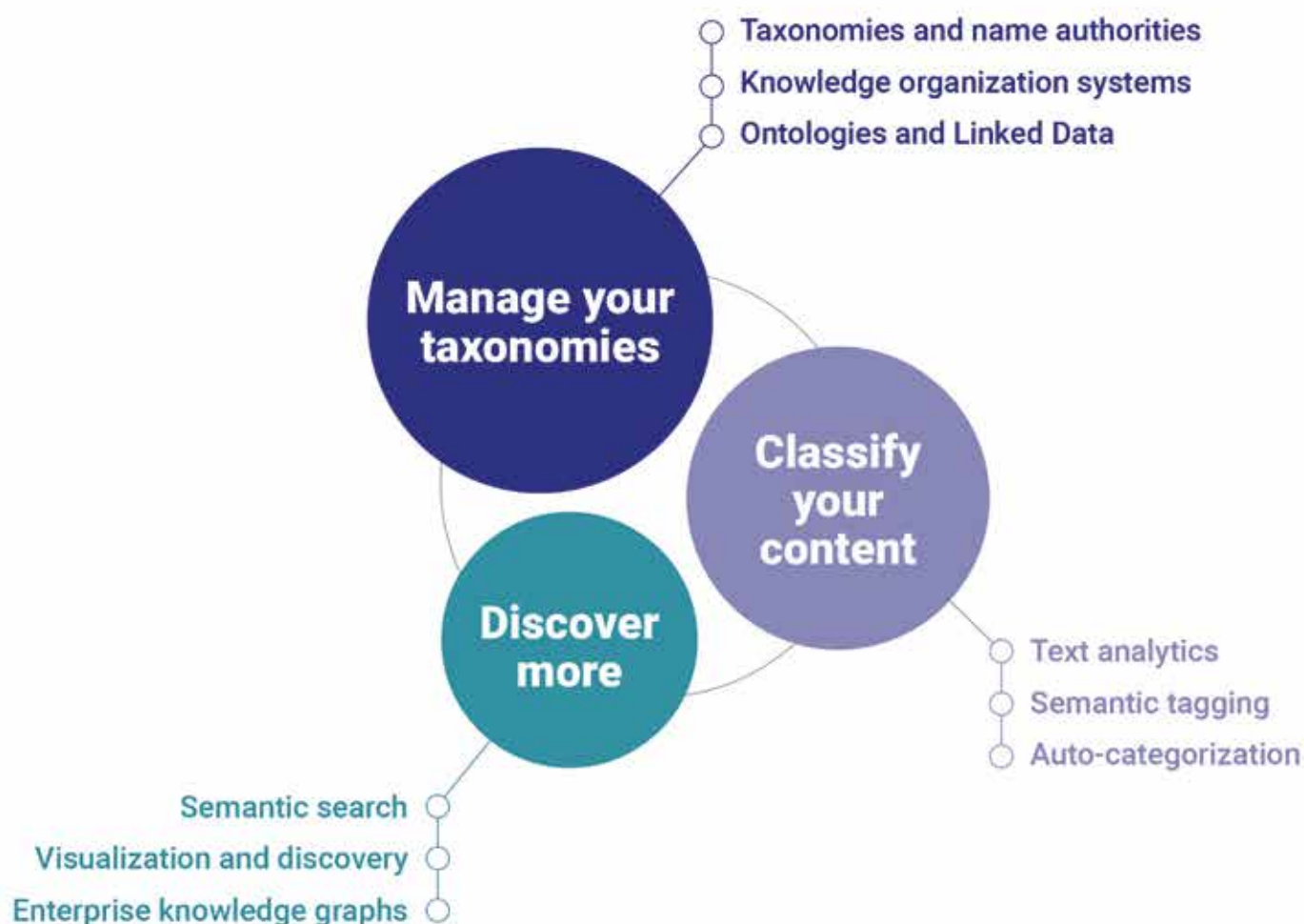
And we're just getting started. We'll see you in the Content Cloud. 



Jade McQueen is the VP of media and entertainment for Box and oversees the company's retail and CPG strategies globally. Her love of innovation and technology coupled with a desire to bridge the gap between entertainment and tech led to her current position. jade@box.com @Box



Media organization and discovery





SMART CONTENT



Data drives our business, that's no secret. But the sheer volume of data coming our way today (along with the ways we're finding to use it) is unprecedented. Smart, connected metadata is taking the form of knowledge graphs, upending content discovery and personalization. Predictive modeling is making everyone who uses it look like a content licensing genius. AI-driven data analytics has resulted in everything from increased content creation to more reliable monetization of entertainment. But while all this data is making our content (and decisions) smarter, do we need to take a step back, ask if we're using it all responsibly?

Is it time for media and entertainment to play a bigger role in building a kinder, safer world?

DATA'S POTENTIAL FOR HEALTHIER CONTENT CONSUMPTION

ABSTRACT: Due to the internet and an abundance of in-home entertainment options, social isolation was a mental health concern long before the pandemic hit, and after nearly two years of lockdowns and social distancing, the problem has become even worse. Media and entertainment companies, with the massive amount of viewer data they have on hand, have a unique opportunity to identify potential mental health issues, and offer help.

**By Brajesh Jha, SVP,
Global Head of Media, Publishing,
Entertainment, Genpact**

During most of the past two years, acts of kindness have swept across the world. While the world grappled with a virus that disrupted life and business, individuals and organizations worked together to find innovative ways to make the world a better place. And media and entertainment did its part.

The industry harnessed the very best of human creativity and ingenuity to quickly deploy technology and drive exceptional user experiences through new digital platforms, content, and business models. As the world drifted apart under social distancing rules and lockdowns, the ubiquitous availability of streaming shows and social media kept us engaged and connected.

However, there's a flip side. Our multi-modal consumption habits have fueled a sharp increase in screen time: according to Zuora's Subscription Economy Index Report the global subscription growth rate for OTT video streaming companies grew seven times in March 2020 in comparison to the growth rate over the previous 12 months. People are spending longer hours binge-watching their favorite shows or scrolling through social media, causing health experts to flag concerns about increasing isolation and mental health issues in societies around the world. As Noreen Hertz pointed out in her thought-provoking book "The Lonely Century," we were already going through a "social recession," and months of lockdowns have made this problem only worse.

HEALING EFFECTS OF POSITIVE MEDIA

For years, the research on the impact of media was focused on the negative. Whether in establishing a correlation between aggression and media violence or about increase in societal bias related to racial and gender stereotypes, the goal was mostly to protect consumers from harmful content. However, in recent years, attention has shifted toward the positives.

According to a study conducted at Pennsylvania State University, films can also elicit a warm and uplifting feeling when we see someone performing an act of gratitude, generosity, or loyalty. In the study, a group of students was asked to recollect movies that were particularly meaningful, and they came up with examples that told stories of altruism, fairness, and social justice. This study and additional body of research is covered, "Media Effects: Advances in Theory and Research," a recent book on positive media psychology.

Uplifting, feel-good content is a genre to itself, of course. Movies and shows such as *It's a Wonderful Life*, *Zootopia* and *The Pursuit of Happyness* and books such as Matt Haig's "The Midnight Library" have been hailed as antidotes for today's troubled times.

The key question then is whether such media could play a role in addressing the combined effects of loneliness and mental health on society.

WHAT IF this existing infrastructure were to take on the additional objective of identifying viewer behavior that could point to potential mental health issues and trigger a positive intervention? This could involve media platforms picking moments in content that could touch viewers in a positive way and address clinical issues.

CREATING A HEALTHY DIET OF CONTENT CONSUMPTION

The majority of content platforms today are built with underlying recommendation engines. These engines track the genre, quality, category, and other key attributes of shows chosen by a uniquely identified viewer linked to the account. This enables them to capture a massive amount of data about viewer preferences, stickiness, and repeat viewing tendencies. The engines then leverage this rich data to build accurate user personas and drive content optimization and curation to deliver a hyper-personalized experience and maximize the commercial appeal of content.

What if this existing infrastructure were to take on the additional objective of identifying viewer behavior that could point to potential mental health issues and trigger a positive intervention? This could involve media platforms picking moments in content that could touch viewers in a positive way and address clinical issues, or even content and social media platforms collaborating to combine first party and third-party data to create richer personas that encompass mental health attributes.

As physical health is better understood than mental health, let's bring in an analogy from the world of food and nutrition to illustrate this point. If we were to label gritty, realistic, graphic or potentially triggering social and relationship issues as carbohydrates (satisfying and



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essential, but to be consumed in moderation), inspirational or informational content as healthy protein, and user-generated social media content as junk food, recommendation engines could play a role in ensuring users consume a balanced content diet that promotes wellbeing and happiness.

Of course, this is easier said than done, as such attempts will directly conflict with the prevailing algorithms which are designed to maximize engagement. On the other hand, privacy concerns will require careful handling of sensitive, individually identifiable data.

However, if there is a level playing field with checks and balances in place, a wellness-focused content strategy may gain greater acceptance. It would require users and platforms to share information identified as psychological attributes relevant to mental health. Likewise, the implementation would have to be consistent across platforms.

BUILDING BLOCKS OF A MEDIA UNIVERSE THAT WORKS BETTER FOR PEOPLE

While a media ecosystem that tracks and promotes mental wellbeing may seem futuristic, technological assets that are currently in use can serve as the foundational framework to support the concept. These fall into the following three key areas:

■ **First** is the ability to carry out rich labeling of content attributes at the most granular level. This should be embedded in all media that is freshly created as well as decades of historical content that could find its way onto platforms. This is possible given the immense capabilities that firms such as Genpact bring to the table in sifting through tons of content everyday across multiple platforms and tagging them with appropriate tools. They deploy a combination of artificial and human intelligence to accomplish this today and it can be easily extended to include psychological data based on industry standards.

■ **The second** involves building a rich unified view of consumers. With the exponential growth in customer data, companies are relying on customer data platforms (CDPs) to build the right customer experience. Genpact regularly works with media organizations in rolling out CDPs as they move away from a channel centric to a consumer centric approach. This is a critical piece for all successful content platforms as they look to maximize their investments. It also means we already have a key building block in place where consumer profiles are being managed and maintained. These just need to be

enhanced with additional psychological data.

■ **The third** important area involves creating algorithms to detect bad habits that affect mental health negatively as well as ones that gently nudge consumption habits toward positive, healing choices. The computing expertise is already in place, the challenge here would be building partnerships with mental health professionals to design strategies that work.

The good news as a result of the renewed attention on social media's impact on users, researchers are amassing a wealth of information that should be readily deployable to drive positive outcomes for users.

FUTURE POSITIVE

Rolling out such a solution will require significant cooperation across content creation, distribution, and entertainment companies. In addition, public policy experts, mental health specialists, media consumption researchers, and many other entities will need to come together to make this a reality.

The world of streaming, gaming, and social media are all converging. Imagine a scenario where the safety and security of individual consumers and society as a whole is not an afterthought but a key consideration at the heart of all media products and strategy. In this new ecosystem, automatic safety alerts trigger timely action to safeguard the user from harmful content or behavior. Immersion and engagement algorithms tap into the natural human instincts of building meaningful relationships with others and drive a healthy mind-body balance for consumers.

The invisibility of mental health issues often leads to late detection and action. But we see the impact played out in the form of gun violence and polarization.

It is time that the media and entertainment industry does its part in tackling this problem. As a service provider catering to this industry, we are committed to helping media be a beacon of hope and positivity. ■

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HOW PREDICTIVE MODELING IS CHANGING THE CONTENT LICENSING GAME

There's a better way to get just the right content to the right audiences on your platform



ABSTRACT: To tackle today's demand for content and stay competitive, entertainment organizations need more comprehensive intelligence to make better decisions, fast. Enter the Whip Media Exchange, an online rights marketplace and central hub for discovery, buying and selling content rights, one that provides enriched predictive insights to get deals done more efficiently.

**By Sherry Brennan, EVP, GM,
Content Licensing, Whip Media**

MESA Platinum Member

The entertainment industry has been evolving rapidly in recent years, with seemingly every major company engaging in a streaming arms race. And while 2020 brought a seismic shift that changed consumer viewing habits for good, most of these companies are still programming their platforms the old-fashioned way: through a combination of gut instinct and manual processes. Most deals are still done over the phone, by email and at in-person film markets using spreadsheets and walled-off, proprietary analysis.

Distribution and programming executives are faced with a plethora of new business models, global expansion and an insatiable public appetite for content. To meet this exponentially bigger demand, they need new tools built for this new landscape. Simply put, buyers and sellers of content need more comprehensive information fast to make better licensing decisions in this dynamic marketplace.

The industry needs a new transformational online content marketplace with workflows that keep up with today's ever-changing and fast-paced licensing world. A rights marketplace that serves as a central hub for discovering, buying and selling content rights, enriched with proprietary predictive insights, and combined with sophisticated tools to streamline licensing workflows, will



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THE INDUSTRY NEEDS *a new transformational online content marketplace with workflows that keep up with today's ever-changing and fast-paced licensing world.*

enable buyers and sellers to work more efficiently and get smarter deals done faster.

For example, a buyer might need a certain number of hours to fill with children's content, or content produced in a specific European country to meet local production requirements. Or a seller might have lots of children's content, but not know which buyers are in the market for their titles. Organizations need to quickly see all available options for these types of situations, and to be able to select the content that not only meets their criteria but also has the highest likelihood of performing well.

Another mismatch in the current paradigm stems from the fact that in-person marketplaces and relationship-based deal-making are inherently structured to make it hard for new players to break through. A platform that helps to foster communication between newer and more established buyers and sellers of content would provide value for both sides of the equation.

While big players don't need much help in finding one another at conferences or from long-standing relationships, smaller companies on both the buyer and seller sides have a harder time making contact and vetting one another. Ideally, buyers would know how offered content will stack up versus what they've already got, and sellers would know how their catalogs could succeed on each platform in each territory. Even large companies may lack resources to efficiently find the best smaller players, and smaller companies need help to gain the attention of larger entities. A platform that helps level the playing field and efficiently identify the best potential partners regardless of size would be a great boon to the licensing space.

WHIP MEDIA EXCHANGE: AFFORDABLE SCALE THROUGH TECHNOLOGY

The Whip Media Exchange provides all this and more with groundbreaking insights and streamlined workflow tools. While the Exchange provides significant added value to content companies of any size, the marginal utility for smaller, independent or foreign entertainment firms is arguably even higher. Companies that might lack the means to buy or create their own analysis can take advantage of Whip Media's ability to consolidate insights from across the digital entertainment ecosystem.

Smaller players can benefit from being able to gain access to sophisticated analytics without the heavy investment of creating these tools themselves. Larger companies will also benefit by quickly analyzing new content from a wider swath of potential licensing partners. Just as blogging software makes it possible to turn a single writer into a media outlet, the Exchange allows smaller teams to analyze and procure more content, and larger teams to find more partners.

The data which powers the Whip Media Exchange is made up of a combination of worldwide respondent-level consumption, engagement and reaction data obtained from Whip Media's consumer-facing app, TV Time. Using cutting-edge machine learning techniques, the Exchange's data scientists use this information to create "affinity mapping" between every piece of content, across every territory. These "affinity maps" are then used to generate predictive insights, including a Demand Score, demographic affinity, regional appeal and other metrics in a fully integrated user-friendly product.

The Demand Score predicts relative performance by title, territory, platform and availability window, while the other predictive metrics enhance the Demand Score with further perspective on what titles have the strongest appeal, and why. Quite simply, there's no other tool on the market quite like it and no broader dataset from which to harvest user behavior worldwide.

The trends that have transformed the media and entertainment industry over the last few years are only accelerating. The marketplace becomes more complex with each passing day, and the public's appetite for new content remains unquenched. Players large and small will benefit from an easier way to connect, a consistent way to evaluate content and a streamlined way to make deals. Finding the content that's right for every platform just got much easier. ■



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THE POWER OF KNOWLEDGE GRAPHS FOR CONTENT DISCOVERY

The use of metadata-rich knowledge graphs improves the user experience, removes barriers to content discovery, and delivers personalization

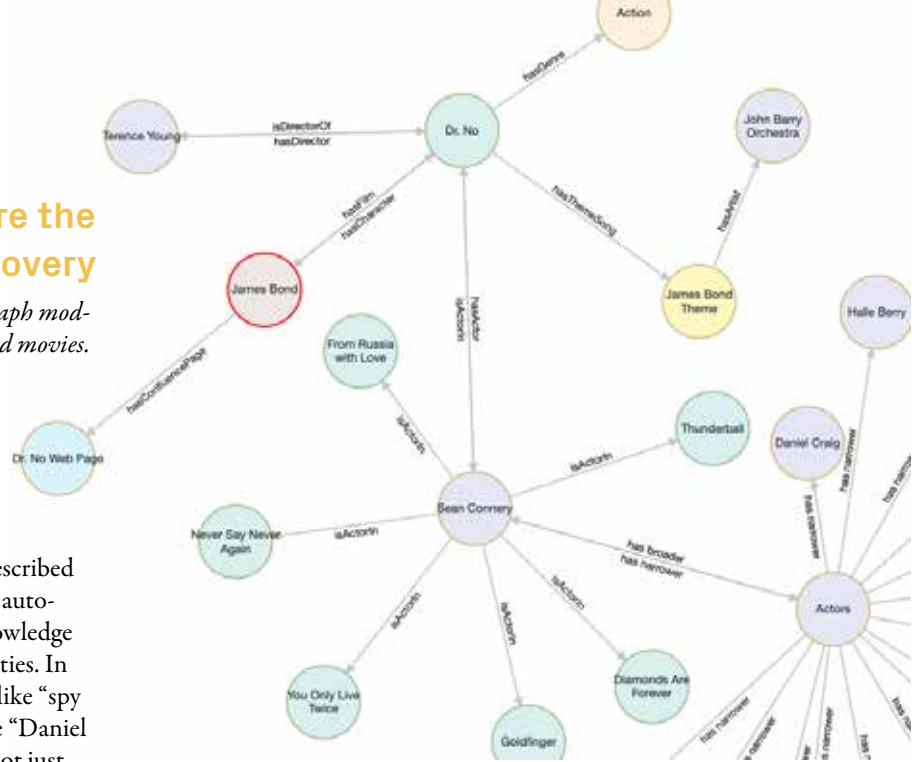
ABSTRACT: Knowledge graphs are the future of content discovery. Using smart, connected metadata, knowledge graphs improve internal and external search, offer a rich content discovery experience, and facilitate personalization and recommendations. Here we explain the basics of knowledge graphs and how they can benefit the M&E industry.

By Bob Kasenchak, Senior Manager, Client Solutions, and Ahren E. Lehnert, Senior Manager, Text Analytics Solutions, Synaptica

Searching for relevant content in any format — text, images, video — is only as successful as the way the content has been structured, organized, and described. Similarly, the serendipitous discovery of content through navigation or recommendation is also based on manually or automatically creating links between content. These links are based on metadata: the user-friendly tags or descriptions of structured or unstructured content. The main challenge for users discovering content is poor or missing metadata.

The best way to ensure metadata is applied consistently and accurately is to centrally manage these metadata values in the form of controlled vocabularies. These vocabularies may be flat lists of terms, hierarchical taxonomies, or domain-specific ontologies modeling the concepts in the domain, and the relationships linking them together.

A sample fragment of a knowledge graph modeling information about James Bond movies.



Knowledge graphs are interlinked concepts described in a formal structure that can be used by both automated systems and humans. The power of knowledge graphs is the use of relationships between entities. In a graph, metadata labels describing concepts (like “spy movies”) or specific entities (whether real, like “Daniel Craig,” or imaginary, like “James Bond”) are not just labels applied to content; they are interlinked objects in a system with attributes, properties, and even links to external data sources.

meaningful relationships between objects creates a structure which is understandable both to humans and automated systems. Relationships are the real power of a knowledge graph.

The two metadata values “Daniel Craig” and “No Time to Die” are controlled values which are easily understood. Likewise, the clearly named relationships between them “has film” and “has actor” establish how the metadata are connected. A knowledge graph connects more subjects and objects by defining their names and the relationships between them.

It is possible to apply semantic data to content at the component digital asset level. For example, an image tagged with “Daniel Craig” and “James Bond” can be linked to text content which is also tagged with the same metadata values, allowing content to be mixed, matched, and personalized. Combining content with metadata concepts in a graph also enables rich search experiences, now familiar from Google’s Knowledge Graph search results in a feature-rich and navigable graphical interface, in which information about a topic is available when searching for content related to the topic.

Daniel Craig	<i>has film</i>	No Time to Die
No Time to Die	<i>has actor</i>	Daniel Craig

We can use and expand this model to create a knowledge graph about James Bond films, actors, characters, and other information. This may be offered as a visual user interface for browsing or used behind the scenes to improve search.

In the world of the Semantic Web — an extension of today's World Wide Web, intended to make online content metadata machine-readable — resources are structured based on a set of standards allowing for the reuse and exchange of information. One of the principles of the Semantic Web is connecting objects using defined relationships. Objects can be data, content, or an aggregation of content (such as blocks of text, images, and links found on a web page). Establishing



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Abren E. Lehnert is the senior manager of text analytics solutions at Synaptica and product manager of the company's ontology management software solution Graphite. He is an information and knowledge management professional with nearly 20 years' experience in taxonomy, text analytics, search, and content and records management. abren.lehnert@synaptica.com @abrenlehnert

REALIZING THE POWER OF KNOWLEDGE *graphs requires an investment in research, development, and maintenance. Knowledge graphs must be updated to keep up with new content and organizational priorities. Adopting new technologies, integrating existing systems, and applying consistent, high-quality metadata to large volumes of content takes time and resources.*

The enabling technologies have improved, making knowledge graphs more accessible and easier to build. What are some of the ways they are being used?

Content Management

Knowledge graphs are particularly effective at aligning content silos by using a common metadata structure. The underlying values in a knowledge graph can be explicitly defined across different data sources so we can clearly identify, for example, the difference between an “apple” and the company “Apple.” So, not only are structured and unstructured data and content bridged, they’re also semantically disambiguated.

Internal Knowledge Management

Internally, knowledge graphs are used to connect content and people as part of a knowledge management ecosystem. Using a single search interface, users can search for subject matter experts, the content they produce, and how they are connected. Social network traversal, such as that used by companies like Facebook and LinkedIn, can reveal how employees are connected and what common interests or projects they are pursuing. Similarly, the content they produce is discoverable based on relevancy, popularity, or other important criteria.

Personalization and Smart Content

A key use case for marketers is personalizing and delivering content recommendations. In the vast sea of information, how do marketers connect relevant content to consumers? One of the challenges to personalized content delivery is knowing the target user: who they are and what they are interested in. Without asking users to self-identify, knowledge graphs help facilitate the delivery of relevant information by using metadata associated with content and tracking user behavior. Leveraging metadata, along with basic user information such as browser language or location, can facilitate delivering localized content that is also culturally and legally appropriate.

Smart content delivery is metadata-driven. Content can be tagged with metadata defining both the nature of the content and the delivery target: location, demographics, language, or any other defining factors which resonates with the consumer. Imagine discovering that a user’s online behavior strongly indicates this person is part of Generation X, and, therefore, content tagged with “Generation X” as a generational demographic is also connected to other content, such as a video with a tag of “80s music.” The content is assembled on the fly for personalized delivery, pushing the buttons of nostalgia and positive feelings in the consumer. The metadata, tagged content, and relationships form an interconnected graph which can be connected and delivered.

At the simplest level, standardized metadata links content. One of the most powerful features of knowledge graphs is the explicit relationships between the metadata, allowing users to discover similar or related items of interest.

Knowledge Graph Resources

The technologies supporting the construction and implementation of knowledge graphs may seem a bit daunting to those first making their way into the space. Successful projects require employing resources familiar with Semantic Web standards and best practices. However, software tools and other technologies, as well as organizations that possess the required expertise, are now widely available.

Developing an organization’s knowledge graph requires domain expertise and experience for effective information modeling and metadata development. Fortunately, there are many freely available data sets to help jumpstart knowledge graph projects. While many organizations will require domain-specific or proprietary concepts to be included, using pre-defined properties, relationships, and concepts can significantly cut down the amount of initial work.

For example, DBpedia is an open, Semantic

Continued on Page 135



HER JOB IS SECURE WHEN
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IT'S A DATA-DRIVEN CONTENT WORLD

Personalization, better recommendations, and engagement are all proving effective in retaining viewers and boosting revenue



By Kurt Nipp, SVP, High Technology, Entertainment, Softtek Integration Systems

ABSTRACT: M&E companies have experienced an unprecedented acceleration of content creation, content delivery, and monetization improvements, primarily driven by the pandemic. AI-driven data analytics has led to continued improvements in personalized content, quality, usability, and device availability. These advances will sustain improvements in the M&E customer experience.

People have constantly changed the way they consume content over the past 30 years, with OTT-driven technologies and unbundled streaming being just the latest examples. In response to this trend, content owners have fortified their content libraries and streamed content directly to their customers, disintermediating the cable and satellite providers.

The COVID-19 pandemic severely disrupted most M&E companies' revenue sources, closing movie theaters, theme parks, sports venues, and content production. In response, these companies resorted to much more significant uses of data-driven decision-making, from content to business models, to personalize their customers' experiences. These trends have been supported by recent advancements in data analytics, including improved customer data collection, AI-based predictive analytics, and online data security.

IN THE END, CUSTOMERS WILL REWARD these companies by adopting services that bring them closer to their likes and preferences.

Here are industry trends accelerated by the pandemic:

Productions and Acquisitions

Competition for content is more intense than ever and has evolved from movie libraries to other forms, including popular franchises, individual channels, and live events. The use of data has provided support for content investments. Content players spent tens of billions to acquire and produce content, using predictive analytics to make many of those decisions. Today's streaming productions rival the quality and budget of studio films, and advanced analysis of customer sentiment and other indicators is being used to determine the ROI of content acquisition decisions.

Marketing and Targeting

M&E companies have access to an unprecedented amount of information about customer behavior and contact information, using that data to reach out via targeted e-mail campaigns to drive traffic to their content. After customer sign-up, M&E companies continue to stay in touch with customers to make special offers based on predictive analytics, all in the name of improving adoption and retention.

Customer Experience

Many M&E companies start by enrolling customers using sites supported by an intelligent data-oriented platform. From there, they solicit customer preferences, and determine personas. This approach gives M&E companies opportunities to interactively suggest content that users may enjoy and builds on the selections users make on an ongoing basis, using AI to elevate recommendations and predictions. Other best practices to improve site usability include improving navigation with an easy search experience, present content recommendations more effectively, build excitement by billing future availability of content, offering parental controls, and increasing multiple language capabilities. Related content based on genre/cost can be tested for subsequent content acquisition purposes. Null searches suggest opportunities for new content, and search order provide additional insight on content popularity. M&E companies are investing a lot of resources to optimize their customer experiences to improve service usage, revenue and retention

Customer Engagement

M&E companies use data to improve connections with their customers. Accurate responses to customer pref-

erences improves ease of use and customer retention. In addition, real-time feedback from the viewer base to live performers improves their connections and excitement.

Customers have so many content choices, and are subject to subscription-fatigue, challenges with streaming quality, and can be turned off by upsell content offers behind the paywalls. Understanding customer concerns, and responding accordingly, can do wonders.

Digital Transformation

Data-driven automation throughout the M&E value chain enables improvement of every customer touch point, from increased usability to relevant content at reduced cost. System integration enables M&E companies to leverage their spot improvements together and provide customized responses to customer preferences. With quick AI-driven iteration on learnings, M&E companies can manage the shortcomings of a hit-driven business with ongoing course corrections.

Competition

With improved customer access, many companies that formerly supplied the endpoint of the value chain can provide services directly to customers. This has vastly increased the number of competitors in the industry, from traditional M&E companies to movie studios, media channels, device makers, sports organizations, and video game eSports leagues. This will continue to drive innovation in M&E.

CONCLUSION

Customers clearly benefit from more choices and accessibility of streamed content. Data-driven personalization remains the most effective approach to achieve desirable business outcomes. It's a never-ending quest to increase revenue using digitization, data analytics and high-quality content that uses all available technology to enhance the viewer experience.

In the end, customers will reward these companies by adopting services that bring them closer to their likes and preferences. ■



Kurt Nipp is SVP of entertainment for the High Tech team at Softek Integration Systems. He brings more than 25 years of operational and sales successes with online, software and infrastructure service companies to his role.
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quired for remote work is also a challenge. Using unsecured home networks and a host of other “daily communications” technologies can create a whole new set of vulnerabilities.

For the industry to make its next quantum leap, we must get over the interchange issues between all these tools. More importantly, from a security perspective, there’s a great deal of protected data in these systems that must be safe-guarded, creating an industry-wide challenge requiring continual attention and innovation.

None of these issues we’ve addressed are occurring in a vacuum. Rather, many overlap with others to present perfect storms of continually emerging content and supply chain dynamics.

For example, with our industry’s ever-condensing timelines to get content to market, more complex delivery requirements and a greater focus on timeliness, we are constantly adjusting our own roadmap and workflows to help our customers meet their goals.

In the end, everything still needs to be delivered on time, and somehow all the companies involved always manage to make that happen. But let’s not fool ourselves, deadlines will become even tighter and the workflows will continue to become more complex.

Why? Because we are all addressing the moving target that is our end user, the viewers. And they are a demanding bunch. I know this because I am one.

For an end-to-end solutions provider like us, all of this means taking on a bigger role within the entire media supply chain for our clients, creating toolsets and workflows to support an environment that didn’t exist 18 months ago, but is here to stay. ■

EIDR *Continued from 12*

collisions within your ecosystems as well. You can create a landing table to hold all the requests for a new EIDR ID, which you can deduplicate before sending the data to EIDR. You can build in logic to check for duplicates before your system submits the data. You can even have one (or 10) system set up the title and others that update the metadata. The best part is that you can build it in a way so that the business users who are tracking the title, version, and metadata have no idea that they are contributing to the registry!

Over the next few months, we will be publishing articles and hosting events in which we discuss all the ways you can automate your EIDR feeds. We hope that you will join us, bringing your architects, your engineers, your business team and more into the discussion.

So, I did end up finding the answer to my original question, on what do you get the registry that has everything: the answer is you. EIDR is a solution that grows and improves for everyone when more organizations adopt it.

We’re thrilled to work with anyone who’s interested in getting the most out of their EIDR membership. And we look forward to some amazing square filter/round hole conversations going forward. ■

As the worldwide IT partner to the International Olympic Committee since 2001, at Atos we’ve seen first-hand the digital transformation of live events. Delivering and securing all the IT systems required for every Summer and Winter Olympic Games is a significant — and high-profile — program that has benefited from significant digital transformation since 2001. Tokyo 2020 was the first Olympics ever to be delivered completely in the cloud, for instance — a model that’s being replicated for Paris in 2024.

We have also witnessed the digital transformation of the spectator’s experience. In the past, sports fan could only enjoy each Games for the competition itself, lasting around 17 days. Now, however, digital solutions can connect fans before each of the events and keep up the engagement long after the closing ceremony. Consumer engagement is a data-centric methodology to serve consumers with enriched personalized experiences and helps to promote retention and continuous participation.

DIGITAL TRANSFORMATION IMPERATIVES

Across the media and entertainment landscape, this business is about cyber-secure digital and data transformation and intelligence-gathering along networks. In an age of hyper-connectivity, success depends on harnessing data to generate actionable insights and rearchitecting digital networks and broadcast centers for IP. As the engineer and investor Marc Andreessen famously wrote back in 2011, “software is eating the world.” In this context, traditional in-house IT, hardware investments and custom-made solutions will hold any company back.

Moving to the cloud is on the critical path if companies are to build in the flexibility, cost-efficiency and resiliency that companies need if they are to continue responding to competitive and operational pressures. Effective and seamless integration of best-of-breed digital platforms and applications is also essential — as is the importance of a digital partner ecosystem so that companies can access the right blend of niche skills and solutions in an agile way.

In terms of sustainability, a by-product of the digital shift has been the significant environmental benefit, which must be sustained — and improved upon — if companies are to deliver on their net zero ambitions. There is no room for complacency. As a recent BBC report outlined, the transition from broadcast to streaming actually increases the carbon footprint.

From large, traditional broadcasters, to online content platforms, to specialist suppliers, all media and entertainment companies have the same need: to deliver the best-possible content, at pace, and at the lowest-possible cost. As a global systems integrator and digital transformation partner, we at Atos are working with leading media and entertainment companies to do just that. We guide, secure and accelerate digital transformation, so that companies can advance, win, stay competitive, satisfy advertisers and stakeholders, and achieve their creative ambitions as our exciting and dynamic industry evolves. ■

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The Quorum ■ Titles-On ■ TiVo ■ TransPerfect ■ Variety Business Intelligence ■ Veritone ■ Videocites ID ■ Vision Media ■ Vistex
Visual Data Media ■ Vobile ■ Vody ■ VSI Dubbing & Subtitling Vubiquity ■ Wasabi ■ WaveSeven ■ Widevine ■ X Cyber Group
XCapsim Learning ■ Zaszou ■ Zendesk ■ Zixi ■ Zoo Digital



VISTEX *Continued from 93*

and dynamism in the media industry, agility is needed not only to survive, but to thrive!

The ultimate goal is standardized business systems integrated into underlying financial management systems — all running seamlessly in the cloud, where nimbleness and scalability are the name of the game. On this foundation, rights and royalties functionality can be added as you see fit — like a collection of LEGO bricks that can seamlessly integrate into an existing structure — allowing you to capture the essential terms and details of deals made.

THE SILVER LINING

The end result is a single source of truth that enables real-time insight into rights and royalties data. Let's say, for example, you need to do an "avails" search — a search on available content for licensing based on a variety of parameters. With a single source of truth, you can quickly gain insight into what's available for sale in your library, across different markets, territories, or platforms, and with visibility into restrictions and financial obligations. With machine learning and the powerful importance of data analytics, insights can be generated on the fly to uncover emerging trends and opportunities that human analysis would simply miss.

Of course, this is just one example of how cloud standardization and visibility are reshaping the media industry to help you flourish. There's no better time than now to get serious about embracing the cloud to help your media and entertainment business move faster, better track how consumers interact with your content, and ultimately make smarter decisions to scale your business, increase revenue, and improve performance. ■

GEOCOMPLY *Continued from 69*

costs and freed up infrastructure capacity, which could then be used to serve more legitimate subscribers and provide a better-quality viewing experience.

AN ALL-STAR LINEUP

When choosing a VPN detection solution, it's worthwhile to select one that is independently rated as delivering accuracy rates close to 100 percent, while maintaining a low false positive rate. In addition, make sure that the solution tackles new, ever-evolving threats such as hijacked residential IPs and proxy-over-VPN attacks. GeoGuard is fully integrated with leading content delivery networks including Akamai and Amazon CloudFront, and streaming providers can defend their home base in the same time that it takes to hit a home run.

If the streaming of illegal content is left unchecked, the value of sports content will decline as competition for rights diminishes. This will result in reduced revenues for rights owners — and ultimately, lower investment across the entire ecosystem.

By flexing their muscles and blocking geo-piracy, OTTs and broadcasters are making a long-term investment in the viability of their businesses. Reducing geo-piracy increases infrastructure availability, cuts costs, and allows them to serve legitimate subscribers better while protecting their hard-won subscription — and ad revenues for years to come. ■

ADOBE *Continued from 103*

companies the chance to pay to integrate these tools into their own systems and workflows via APIs, meaning that they can do everything they need to do within a single system.

The changes that Adobe has made — and continues to make — to its tools are informed by the stories our clients are telling us, across the creative industries. For example, "ethical e-commerce" company Dreamship handles logistics for the growing print-on-demand market. It required a high-quality imaging solution to provide e-commerce clients with high-fidelity images that could be printed on shirts, mugs, pillows, and other items.

However, as Dreamship scaled, it found that the time and effort required for engineers to take Photoshop files from designers and adjust them in a third-party tool was unsustainable. Using Adobe's developer platform, it was able to use Photoshop solutions such as Smart Object Replacement. This automated the process of placing designs on product mockups — even those that required the warping of the image, such as to fit it around a mug.

This change allowed Dreamship's design team to be more focused on creative work, and reduced the time it took to create mockups from 10-20 hours to less than 30 minutes. As a result, it was able to expand its virtual inventory of images for e-commerce clients and increase its revenue more than twelvefold.

This is just the tip of the iceberg. Creative Cloud is continuously being updated with new automation features, so expect to see new ideas and improvements for all sorts of creative workflows and media types.

FRAMING THE CONVERSATION AROUND AUTOMATION

When we talk about developments in fields such as artificial intelligence, machine learning, and automation, the conversation can veer from fantastical to funereal. Every day, new technological advances show us wondrous advances, such as AI bots that can write scripts and algorithms that deliver smooth visual effects.

We should be diligent in ensuring that automation is used to empower creatives rather than undermine and compromise them. But we should not let valid concerns about potential over-reach drown out the excitement over the possibilities automation offers.

Creative teams are now able to harness modern tools and technologies to create awe-inspiring designs and immersive experiences. But they also face increasing demands on their time, which are multi-faceted and ever-increasing.

It is exciting to think of what these creatives could achieve in the future. However, these possibilities will only become real if we give them the space to make this art happen, rather than bury them in mundane tasks.

We need to champion solutions that help creatives prioritize imagination over administration, without turning their workflow upside down.

We're committed to exploring how automation and workflow simplification can be implemented throughout our Creative Cloud suite, as we expand and learn from our customers. Because, as they've told us throughout the COVID-19 pandemic, and even before, these are the sorts of features they need to empower them to do their jobs and tell amazing stories. ■

SYNAPTICA *Continued from 128*

Web-compliant data set available for use as a starting point. Information from DBpedia, or similar sources, can be captured and stored as part of a knowledge graph and exposed in a user interface to provide a rich user experience to accompany search results and guide the user to related content.

WHY INVEST IN KNOWLEDGE GRAPHS?

Realizing the power of knowledge graphs requires an investment in research, development, and maintenance. Knowledge graphs must be updated to keep up with new content and organizational

priorities. Adopting new technologies, integrating existing systems, and applying consistent, high-quality metadata to large volumes of content takes time and resources. So, what makes it worth the effort?

Knowledge graphs can improve user experiences, remove barriers to internal and external users locating relevant content, and deliver personalization. The time saved and potential revenue earned once the initial up-front work is performed is a significant return on investment. ■

TRIBBEY *Continued from 41*

data,” Mueffellmann said. “To effectively protect against these risks a new approach is needed. A data-centric policy-based approach based on zero trust is a far more effective methodology to ensure data remains secure.

“To protect [intellectual property] organizations need to assess what data an employee needs to access do their job. But it doesn’t stop there,” he added. “They also need to determine what a user should be able to do with that content if they are granted access to it. Just because you can access a file doesn’t mean you should have carte blanche with it.”

And, during the pandemic, there’s been a noticeable security cost associated with the shift to remote working, according to the 2021 edition of IBM Security’s annual “Cost of a Data Breach Report.” It found a \$1 million-plus cost difference where remote work was a factor in causing a breach, vs. those where remote work wasn’t a factor. Up until mid-2021, the percentage of companies where remote work was a factor in a breach was at 17.5 percent, and organizations that had more than 50 percent of their workforce working remotely took nearly 60 days longer to identify and contain breaches, compared to companies with 50 percent or less working remotely, according to the report.

“Higher data breach costs are yet another added expense for businesses in the wake of rapid technology shifts during the pandemic,” said Chris McCurdy, worldwide VP and GM of IBM Security. “While data breach costs reached a record high over the past year, the report also showed positive signs about the impact of modern security tactics, such as AI, automation and the adoption of a zero-trust approach — which may pay off in reducing the cost of these incidents further down the line.”

For Ted Harrington, co-owner and executive partner of cyber-

security consulting firm Independent Security Evaluators (ISE), there’s no doubt work-from-home has fundamentally changed how enterprises protect information. In the pre-pandemic world, the enterprise could control its own network environment, but as we’ve collectively moved to work from home, “now you’re having people working on their own networks, with personal equipment, and these systems and networks are not as well-secured as the enterprise. And the enterprise now has to think about how it’s going to deal with that,” he said.

Of course, issuing equipment to remote workers is one way to address security issues, but it’s the adoption of secure cloud systems that may be more important, Harrington said. “Enterprises are able to provide access to information by leveraging a more secure cloud service rather than relying on someone working locally from their home environment, and that’s a pretty significant upgrade from a security and operational perspective,” he added.

And there’s a little-discussed benefits that’s come about with this shift to mass remote working, Harrington noted: “The awareness of these issues is a lot higher now. Companies are talking about cybersecurity now, not just within the security and tech teams, not just within leadership, but across the entire organization, the entire rank and file. That’s a very positive thing, because as people start talking about security issues, it starts to drive behavioral change in a meaningful way,” he said.

“We can’t predict what’s going to change, but what we can predict is that things will change. Because we know change is a certainty, we must be ready to adapt the way we will defend. That’s why security matters: it’s a business of constant evolution, adjusting to the ways we are attacked.” ■

SYNAMEDIA *Continued from 57*

legitimate OTT services. With OTT ServiceGuard, service providers can eliminate pirate access to their CDN and allow technical controls to work as intended.

As a result of the pandemic, the stakes are higher than ever due to the increased consumption of OTT streaming, further accelerating the industry’s need to act. Looking to the future, a successful approach to

fighting piracy starts at the architecture and user levels and adopting a tactical approach to monitoring and disruption activities.

By tackling OTT piracy head on, operators, content owners and rights holders can protect their content investments, reduce infrastructure costs, and create opportunities to generate additional revenue. ■

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FINLEY *Continued from 6*

strategies. It took the “all bets are off” and “everything is on the table” mentality of the pandemic for us to realize our playbook on packaged media and evolving formats is broken. And it’s only in the past couple months, when we realized the COVID-19 crawl-out would be delayed yet again, that we’re back in the planning stage again to rethink another variable or another outcome on our roadmap. But it is in this rethink that I’m hopeful we might move the needle.

And we’ve already begun scaling. The pandemic drove business to M&E and the world has relied on our entertainment during the crisis. There’s more production in the pipe than ever. We’ve set another quarterly streaming revenue record. And there is no going back. This is the new-new and everyone won’t make it. We’re feeling the impact of the Great Resignation for sure, but we are also an industry that has been begging for this kind of a restructure since the advent of streaming video.

There is a feeling that sets in when you realize things won’t go exactly the way you had planned. We have natural human instincts in this revelatory moment that’s commonly couched in “fight or flight,” but it doesn’t have to be a grave or mortal threat to evoke this instinctual response. And with each new uncertainty, whether that is local or regional or national, it starts back up again, and we are forced to come to grips with that instinctual reaction in that

moment. This isn’t something new or profound, but we have all experienced this response, these past 18 months, in ways we never thought possible but here we are, collectively “enduring” it as an industry, as co-workers and as family members

I’ve never been so thankful for a weekend or holiday. UCaaS (unified communications as a service) or Zoom/Teams/Hangout/Chime/etc. takes its toll on everyone within your organization, sometimes to the point of complete exhaustion. We all wanted to just “go back to normal” but we have some time before that normal truly returns. I’m convinced “hybrid” is the new normal, but this will also challenge our perception of hybrid. Any way you look at next year it is going to be very busy and we should be thankful for that good fortune.

The first speech I made to our industry was an opening keynote at the entertainment media expo in 2005. I’d written it with a speech writer after a cheesy inspirational poster at my dentist’s office had inspired me. When we get into crisis-mode I’m reminded of the basic premise: On the Serengeti, whether you are the hunter or the hunted, every day you will be up and out there running.

Looking into the future can be overwhelming. Start and stay in the moment, even if that moment sees you running (again). Appreciate the subtle changes and small wins. Hang in there and look forward to running with you in the new year. ■

ATKINSON *Continued from 8*

Project, SOC and ISO) and unique company frameworks (such as Amazon Studios’ site and app security) all map to one-another. This allows us to start, as an industry, to finally understand and recognize the various security efforts, in a contributing fashion, to overall risk-management approaches.

And CDSA is expanding internationally. There’s already a group of members in EMEA focused on the complex areas of content localization and distribution. We’re also aiming to establish regional focuses in APAC, LTAM, Japan, and China, all of which have unique challenges.

We have great leaders and great solutions across our industry and being the “glue” that connects people around those has long been a hallmark of CDSA. Part of what makes CDSA great are its

sister organizations including the Hollywood IT Society (HITS), Women in Technology Hollywood (WiTH), MESA, and the Entertainment ID Registry (EIDR), all collectively representing M&E from different, overlapping areas. We bring these organizations and others closer together to share and address common issues.

We are a community of many leaders and great approaches, one that welcomes connecting our industry, to spotlight the content protection and cybersecurity challenges all of us face.

In short, there’s more happening with CDSA than ever before, and our community focus has never been stronger. Come and join us as we continue to bring leaders, ideas, and companies together to solve all of our common problems. ■

SLALOM *Continued from 33*




the pandemic and are dabbling with the core competencies of the media and entertainment industry to maximize the value and utility of the video content they are creating.

Over the next decade, industries including education, healthcare, retail, and others will embrace video as a convenient, expedient, and more engaging platform for sharing ideas and connecting with consumers and other organizations. Furthermore, they will learn the lasting value of some of their video content and may even seek to monetize or exchange value for their video content. New media platforms and brands will come to fruition, and new partnerships will be forged across industries. The opportunity exists for media

and communications companies to extend their capabilities and expertise to enable other industries bringing content to market.

For leaders interested in bridging into new industries, or even just better engaging consumers in their core products and services, exposure to a collection of new technologies and an understanding of how they will affect human interactions and expectations in a variety of industries can help leaders better relate to the needs of viewers and the businesses seeking to engage them. The Slalom Innovation Lab offers a space equipped with inspiration, facilitators, and tools to imagine the possibilities, put structure to new ideas, and experiment. ■

MESA 2022 Event Calendar

		CDSA	HITS	SMART	EIDR	WITH
2 FEBRUARY	CONTENT WORKFLOW MANAGEMENT FORUM	■	■	■	■	
27 FEBRUARY	CONTENT PROTECTION SUMMIT: EUROPE	■				
	CDSA CYBERSECURITY TOUR @MWC	■				
9 MARCH	SMART CONTENT SUMMIT			■		
	EIDR PARTICIPANT MEETING (US)				■	
23-25 APRIL	CYBERSECURITY & CONTENT PROTECTION SUMMIT (23)	■				
	TAKE THE DAM(N) TOUR @NAB (24)		■	■		
	MESA LAS VEGAS MEMBER PARTY (25)	■	■	■	■	■
4 MAY	NAB REVIEW (EU)	■	■	■		
18 MAY	HITS : SPRING		■			
15 JUNE	GLOBAL MEDIA & ENTERTAINMENT DAY		■			
13 JULY	ENTERTAINMENT EVOLUTION SYMPOSIUM		■			
9-12 SEPTEMBER	L.A.MSTERDAM MEMBER PARTY (9)	■	■	■	■	■
	SMART CONTENT SUMMIT: EUROPE (11)			■		
	EIDR APM (EU) (11)				■	
	CDSA CYBERSECURITY TOUR @IBC (12)	■				
12 OCTOBER	MEDIA & ENTERTAINMENT DAY @NAB EAST	■	■	■		
9 NOVEMBER	HITS : EUROPE		■			
16 NOVEMBER	SOCAL WOMEN'S LEADERSHIP SUMMIT					■
7-8 DECEMBER	CONTENT PROTECTION SUMMIT	■				
	MESA HOLIDAY MEMBER PARTY	■	■	■	■	■

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actions are creating barriers to disruption from malicious activity around key resources and how the overall posture is reducing current-state risk to business operations. This reduction in risk enables the business to become more aggressive in planning and projections because the CISO, like their GC and CCO counterparts, can help resolve impediments to revenue and earnings growth.

HOW THE C-SUITE CAN SUPPORT

The security department is often in a uniquely disadvantaged position. They are frequently:

- **Isolated from the day to day of the revenue centers.**
- **Raised in a technology environment that provides little background or understanding of business operations.**
- **Have terribly designed Key Performance Indicators (KPIs).**
- **Challenged with quantifying security risks that are inherently difficult meaningfully metric.**

The first two points can be remedied by cross-pollinating the security team with the revenue centers. By providing insight into, for example, how and why engineering teams spin up shadow infrastructure due to their own pressures and deliverables, it is possible for security to work with engineering to provide a flexible and more secure solution. This understanding will also reduce policy controls and other rigid security regimes that result in such poor adherence that they might as well not be codified at all.

The third point is far harder. How does one create metrics and KPIs where success is a negative outcome? The drive for data and metrics often results in presentations from the security organization that have no legitimate meaning other than to provide numbers. What does it mean to have 10,000 validated alerts in a quarter? Is that a lot, is it a little? Does a change over time represent an improvement from a program perspective or just a change in terms of threat? No one can answer those questions with any level of certainty, making such indicators pointless. As the security program focuses on business enablement, their KPIs should be shaped in a similar fashion.

Much like infrastructure teams are judged on system uptime, security teams should have similar metrics: how many cyber incidents resulted in business impact? Of the business impact created how much was to critical business systems and how much was to low value areas of the network? Posing the metrics in this way helps

put the business value of security into perspective. It is not about absolute wins and losses, but rather how well the core value was protected in a volatile environment.

Finally, organizations often have significant difficulty in quantifying the possible losses associated with cybersecurity incidents. Direct costs generally encompass technology down time, overtime, external support for incident response, and outside counsel, as well as potential monetary losses resulting from direct theft or regulatory fines. Indirect costs can include negative impacts to PR, marketing, customer retention initiatives, and stock price. As covered above, an organization must pursue a strategy which involves trade-offs and risk acceptance in a way that still enables the business to achieve its mission and create value for stakeholders. Increasingly, savvy CISOs and security stakeholders collaborate to align the organization's risk management approach with the financials and the culture of the organization while also leveraging residual risk management tools like insurance.

Practically speaking, and to attempt at least general quantifications, security leaders should consider evaluating threat models and hypothetical incident situations that realistically simulate impacts and losses to critical assets. The modeling should also include general estimations of possible losses contrasted with the impacts of cost-effectiveness estimates to realistically consider how approachable security investments might be to attempt to treat or accept a particular set of risks.

CONCLUSION

By orienting security programs to coalesce around business risk and enablement rather than absolute security, companies will become more effective in their operations. Security programs should not be viewed as loss centers but instead as essential parts of the organization to enable business operations. CISOs should provide guidance on how to best seize the next opportunity, while security teams can help manage and mitigate risk to enable those additional business opportunities.

Increasingly, businesses are operating in a world where consumers and partners often develop their first impressions of your organization from online and virtual interactions. Bringing in the security team earlier in the planning process allows for smarter architecture, smaller capital expenditures, and less overall risk. ■

SMART CONTENT COUNCIL *Continued from 14*

strategy, it requires setting clear objectives and contemplating key points: identity, access management, compliance with data security standards and regulations that govern systems. Therefore, if the governance is applied to "citizen" data users, they will be much more agile and will contribute to improve the efficiency of the organization and its data management.

If a governance strategy is adequate and companies have accurate, up-to-date, and reliable information, it will have a positive impact on all areas of the organization, from operational processes to intermediate processes, and even in decision-making.

Additionally, for data governance to become a truly competitive

strategy, it's important for the organization to use appropriate tools and methodologies capable of managing large volumes of data. To do this, it's essential that a thorough and complete comparison is made between the available software that best fits your needs.

Data governance is not optional if you want your organization to progress in today's digital world. With the advancement of technologies and digital transformation, the amount of data stored, and its business value, is so great that the implementation of a data governance strategy is a no-brainer. Organizations must guarantee the quality of information, the security of data and compliance with worldwide legal regulations, in order to survive today. ■

Customer response times are also increased. In many cases, it's now possible to take an order, turn around a package and get it to a client in less than 24 hours when traditionally that process took several months.

Now, a library is set up for maximum content monetization. When an order is received, the studio knows exactly which version of a title is available. If a requested version is not available, they can easily create one without much human intervention, manipulation, or expense.

Using a cloud-based platform also eliminates the need to invest in physical storage, allowing owners to flexibly shift their costs to operating expenditures (OPEX) rather than a capital (CAPEX) model.

Complementing the newer cloud solutions, like Ateliere Connect, are advanced artificial intelligence (AI) tools that can scan content to understand its layout and formatting, and then accelerate the traditionally long and manual process of content conforming and localization editing. By automatically identifying specific types of scenes or video elements and highlighting them on a timeline view, operators can focus their efforts primarily on the scenes that need adjustment, saving companies time and money.

AI technology can also help automate all the workflow steps in a single platform. For example, automated QC using AI can detect content issues faster and with a higher accuracy rate — more than 90 percent — compared to traditional manual QC.

Cloud platforms also support a range of business process management (BPM) functions for studios and content owners. For example, the Ateliere solutions are provisioned for automated deliveries to more than 200 global endpoints, including all major streaming platforms—Netflix, Amazon, Disney Plus, HBO, Hulu, Apple, Viaplay, and others. The platform's APIs and plugin architecture enable integration with the studio's multitude of BPM systems. This two-way data exchange automates ordering, order tracking, inventory management, billing, rights management, contracts and legal issues, creating a fully orchestrated workflow where everyone involved in the process is always fully informed and traditionally manual functions are removed.

This new way of managing and monetizing content will allow our industry to adapt for future growth more easily. The future still holds many uncertainties—the state of the pandemic, increasingly hybrid workforces leading to more people spending more time at home, changes to traditional content distribution models such as theatrical and streaming platform release timeframes and whatever else comes our way.

One fact we do know for certain is that the demand for content will continue to increase exponentially. For anyone involved at any step of the digital media supply chain, success will hinge on embracing change and adopting new technologies. ■

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and widen their network, as well as by LSPs in search of talent. More than 600 translators that specialize in media localization from 65 countries have already joined the platform to date, and thousands of searches are completed by member LSPs on a monthly basis.

The value of The POOL, however, does not lie solely on the fact that it is a directory developed with the support and input of a wide range of academic and industry stakeholders, but in its plans to complement its offering with a certification program in audiovisual translation. The latter is currently in development under the leadership of Prof. Jorge Díaz-Cintas, director of the Centre for Translation Studies at UCL and co-author of the seminal book “Subtitling: Concepts and Practices,” which is used as the core textbook for subtitling training in universities and colleges all over the world. The certification aims to become an industry standard of excellence for a variety of tasks subtitlers are normally asked to perform in their professional capacity, such as subtitle translation, captioning and spotting, and one can easily imagine post-editing as well in the future. Its goal is to recognize high professional standards in each of these areas and acknowledge professionals that have attained them.

Audiovisual translation is a sector where talent comes in all shapes and forms, making it hard for LSPs to assess the experience of freelance resources and the quality they are able to produce without putting them through time-consuming and costly in-house testing procedures. A simple job ad for subtitling professionals can result in a high volume of applications from a wide mixture of applicants: expert subtitlers with high technical experience and the ability to work in a variety of professional software and to different subtitling and captioning specs; experienced translators that possess high linguistic knowledge but basic technical skills; holders of certificates from a variety of subtitling courses mushrooming world-wide whose value may be hard to compare; self-taught amateurs and all shades in between.

THE SOLUTION

In a booming industry sector, with reported talent shortage issues as a result of its accelerated growth rate and the unpredictability of peaks in volume that major streaming launches typically result in, it is important to be able to quickly find new talent that possesses the



OOONA's The Pool is the go-to directory for localization talent.

linguistic and technical skills required to competently perform tasks that are common in today's subtitling workflows. The short deadlines under which LSPs are often required to onboard new subtitlers in certain language combinations to cater for increased translation needs during streaming launches makes it hard, even for the largest among them, to satisfy client demand and speed to market. The AVT Pro certification program promises to solve this issue and offer a stamp of approval backed by both the industry and the academia, which will enable the speedy identification and recruitment of resources. “Having access to trusted, pre-qualified resources is an invaluable asset in today's fast-paced mediascape,” said Helen Larson, VP of localization at ZOO Digital.

The POOL promises to be a great resource for LSPs of all sizes, while at the same time giving language professionals access to a wide variety of clients, especially as subtitling and captioning become a core task in other localization verticals as well. Its transparent nature coupled with the AVT Pro certification will enable translators to have their skills recognized among their peers, so they may demand appropriate remuneration for the expertise they offer.”

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