

2030 VISION SERIES

# URGENT MEMO TO THE C-SUITE

Investing in Production Technology and Cloud  
Centricity is No Longer an Option - It is Table Stakes





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Motion Picture Laboratories, Inc. (MovieLabs) is a nonprofit technology research lab jointly run by Paramount Pictures, Sony Pictures Entertainment, Universal Studios, Walt Disney Pictures and Television and Warner Bros. Entertainment.

MovieLabs enables member studios to work together to evaluate new technologies and helps the industry develop next-generation content experiences for consumers, reduce costs, enhance security and improve workflows through advanced technologies.

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# EXECUTIVE SUMMARY

We titled this brief “*Urgent Memo to the C-Suite*” because there is a time-critical need for executive awareness and investment to support the future of media creation.

In this paper, MovieLabs describes (1) how the growing importance of emerging cloud and new production technologies creates a strategic imperative to reinvent the media creation ecosystem and (2) why investing in a unified industry approach to these emerging technologies is key to reacting to changing consumer demands and scaling global content creation. Much like investments in Distribution Technology ten years ago created booming consumer demand for OTT services, now only a similar investment in Production Technology will enable the content creation ecosystem to *efficiently and practically* scale to meet that new consumer demand.

THIS **URGENT** MEMO IS REGARDING...

1

How the growing importance of emerging cloud and new production technologies creates a strategic imperative to reinvent the media creation ecosystem.

2

Why investing in a unified industry approach to these emerging technologies is key to reacting to changing consumer demands and scaling global content creation.

# SECTION 1

# INTRODUCTION

Our industry has a great track record when it comes to leveraging new technologies to enable new creative possibilities and profound business growth. We have seen the evolution from black and white to color, analog to digital, video cassette to digital discs, broadcast to streaming and SD to HD to UHD with HDR. The transition to Digital Cinema is a recent example of an industry-wide technical and business transformation that succeeded because of a concerted, determined and aligned industry effort, saving the industry billions of dollars and improving the consumer experience and content security. And so, here we are once again, with an opportunity to appropriately collaborate and create our best future.

Even before the pandemic, there was a growing mandate to produce content at unprecedented levels to feed the insatiable appetites of the expanding worldwide streaming audience. As the pandemic forced our industry to almost instantly spin up remote, connected work, it became clear that a technology transformation that was already under way would be key to resumption of production. The movement to cloud-based capabilities and services held the promise of effectively creating content at scale and represented a path to innovative content creation into the future.

But the technology revolution that is now upon us is about much more than new media formats and distribution technology. The growing importance of cloud computing, data centrality, automation, artificial intelligence, virtual production, real-time engines and talk of “metaverses” creates both strategic opportunities and imperatives. It will be hard to “opt out” of this inevitable transformation as these technologies represent nothing less than the reinvention of our entire content creation ecosystem. And while those who have begun to move content creation to the cloud and use data centrality to optimize their supply chains are already reaping benefits, the promise of an innovative, efficient and dynamic content creation future is not assured – not without effort, investment and, most importantly, appropriate industry alignment on how the benefits of this future can be realized. It will require executive awareness and context to understand these Production Technology investments, and why this is best handled together rather than alone – hence this memo.



## Our Industry is at a Crossroads

The same data and cloud-centric technological revolution that is changing the way people shop, bank and consume content will fundamentally impact and change content creation as well. The cloud will increasingly become not only the means of media distribution but also the means of media production. In fact, we've yet to unlock the efficiency of having both content creation and content distribution occurring in the cloud for a true end-to-end process. But we must.

The pace at which technology innovations are impacting the creation of content, and its very definition, is rapid and accelerating. These innovations hold the keys to unlocking new content monetization opportunities as well as efficiencies in creation and will require dedicated teams of production technology experts and specific infrastructure to harness, enable and support. There's an important and timely opportunity to invest in production technology and jointly develop interoperable building blocks that are best tackled collaboratively across studios, their partners and their vendors.

And this movement to cloud technologies for production is not just another incremental technology evolution on the digital journey. It's revolutionary in its impact on workflows and cost structures. And it's inevitable – as it has been for many other industries that are re-inventing their factory floors in the cloud. It's also going to be differentiating, because studios that can more readily leverage new creative technologies and make content more efficiently will have a speed-to-market advantage which will enable them to react faster to customer demand and retain highly sought-after creative talent.

But for our industry, that factory floor is a complex supply chain that is still very much mired in the 100+ year-old technology of film and film-centric workflows. And while you might say that our industry “went digital” a long time ago, we did it by mostly emulating the film workflows of the past. And now, as our film-to-digital workflows meet this digital-to-cloud and data-centric transformation, our industry is at a crossroads.

## The MovieLabs 2030 Vision

The good news is that we already have a map to a more efficient future that will be required to meet the challenges of today and tomorrow's content creation. The MovieLabs<sup>1</sup> white paper "The Evolution of Media Creation – a 10-Year Vision for the Future of Media Production, Post and Creative Technologies" was produced in partnership with the CTOs and the production technology teams from the major Hollywood studios. Collectively, this thought leadership team articulated a clear vision for how the industry can accomplish this most important task – creating the next-generation ecosystem for media creation. Known as the "2030 Vision," this white paper and MovieLabs "sequels" that provide additional detail are seen as a common reference for the industry's now shared vision of our industry's future.

<sup>1</sup> MovieLabs is a technology joint venture of the major Hollywood Studios, including The Walt Disney Studios, Paramount Pictures, Universal Pictures, Sony Pictures, and Warner Bros.

## SECTION 2

# FIVE KEY TRENDS

To better understand this path forward in context, let's look at five key trends that are having a major impact on media creation and that underpin the need for commitment, support and investment in cloud-centric production technologies and secure, interoperable workflows.



### TREND 1

**There is a Growing Urgency for Scaled, High-Quality Global Content Production**



### TREND 2

**As Release Windows are Evolving, Distribution Models are No Longer One-Size-Fits-All**



### TREND 3

**Productions are Becoming More Complex – What We Did in the Past Won't Work in the Future**



### TREND 4

**Connected, Creative Remote Collaboration Has Become the New Normal, and it is Here to Stay**



### TREND 5

**Technology is Evolving Extremely Fast, and the Vendor Landscape is Being Disrupted**





#### TREND 1

## There is a Growing Urgency for Scaled, High-Quality Global Content Production

Producing new content for rapidly expanding streaming storefronts is a tall order on many levels. The sheer increase in volume for existing and new streaming entrants is stretching capacities and competencies. The competition for above- and below-the-line talent, stage space and finishing resources is very real. In addition, the global nature of the market is transformational. Traditionally, finished Hollywood content traveled to overseas territories, which primarily acted as sales, marketing and distribution agents for the major studios. But as streamers open new global markets, there is a growing appetite for global productions as well as local language and local cultural content from local production companies flowing between markets. In addition, while many of these global territories have a long and rich history of content production, the types of workflows and quality considerations that the new streaming companies are demanding are quite literally a foreign language to some, stretching local production communities.

Producing global content at this scale will require more than just content spend, the right people, facilities and production know-how. **The growing volume and logistical challenges of producing and delivering at these levels cannot be met by simply “throwing more bodies” at the challenge** - from both an economic and a workflow perspective. A new production ecosystem that is inherently efficient and designed to take the redundancies and “friction” out of today’s process is critical to help enable scale.



## TREND 2

# As Release Windows are Evolving, Distribution Models are No Longer One-Size-Fits-All

Another key trend that has been brought into sharper focus by the pandemic is how distribution flexibility gives both studios and consumers more options. While theatrical will still be an important window, the pandemic has ushered in a new era of hybrid release strategies with day-and-date, shortened theatrical exclusivity, as well as direct-to-consumer distribution for titles that were previously earmarked for theatrical release. The need to pivot release strategies dynamically, with shortened or no windows between theatrical and in-home, has a major impact on production, finishing and delivery supply chains.

The ability to meet the demands of distribution flexibility means that teams responsible for finishing and delivery will need to be able to respond effectively to these more complex distribution needs. This has implications for creatives, vendors, studio mastering and delivery teams whose workflows will also need to “pivot” efficiently. Today, this is accomplished through significant brute force efforts and additional cost, but in the future, a more integrated, interoperable supply chain would be able to flex with dynamic distribution signals.



### TREND 3

## Productions are Becoming More Complex – What We Did in the Past Won't Work in the Future

The myriad choices in digital cameras, creative tools, processes and pipelines, as well as the industry's adoption of new innovations such as virtual production, have added complexity and ushered in a new era of "snowflake workflows," where filmmakers stretch both creative and technical boundaries and no two workflows are the same. Powerful new digital editorial and color tools and a progression of mind-blowing advances in visual effects continue to add both choice and depth to the creative palette. This is amazing from the storyteller's perspective, but as we continue to add new emerging technologies to today's already complex digital workflows, coupled with the steps needed to finish, localize and deliver the growing number of versions for global distribution, today's workflows are increasing in complexity with multiple global participants working together inefficiently. With growing global volume and ever-increasing technological complexity, our current practices just won't and can't scale.

The complexity of today's content creation process puts extraordinary demands on studio operations and support infrastructure and an already inefficient supply chain. These demands are driven by technologies and workflows for VFX, virtual production, multiple delivery formats and more localized distribution masters at the same time that the content volume itself is exploding. A next-generation, efficient, interoperable cloud-based production ecosystem can more readily incorporate new technologies and mitigate complexity by parallelizing workflows and automating the mundane to allow more time for creative work.



#### TREND 4

## Connected, Creative Remote Collaboration Has Become the New Normal, and it is Here to Stay

Pre-pandemic, our industry relied on many purpose-built production, finishing and review spaces to do our creative work. But the reality of the global pandemic forced “work from anywhere.” And as it turns out, despite some of the initial tools and unorthodox methods that were quickly cobbled together to enable this remote work during the pandemic, it has actually been a good thing – both for creatives who enjoy the freedom to do their work from wherever it suits them, and for helping to connect the various creative collaborative participants. As we return to our new-normal post-pandemic world, we will increasingly find that this interconnected style of production will drive efficiency. From the obvious lower travel costs to the reduction in communication friction and the ability to literally be in multiple places at once, connected creative workflows using cloud-enabled collaboration tools will be key to scaling global productions. This is especially true as local content production grows and workflows are initiated and completed in many more markets beyond Hollywood.

Moving from the “just hook it up and make it work from home” effort that characterized the early pandemic to hardened, secure and scaled, connected, creative, collaborative work-from-anywhere is a task that requires effort. To support this requirement, increased bandwidth and tools that work across both purpose-built creation spaces and anywhere creatives want to work will require new approaches to security, interoperability and standard ways to connect and interact.



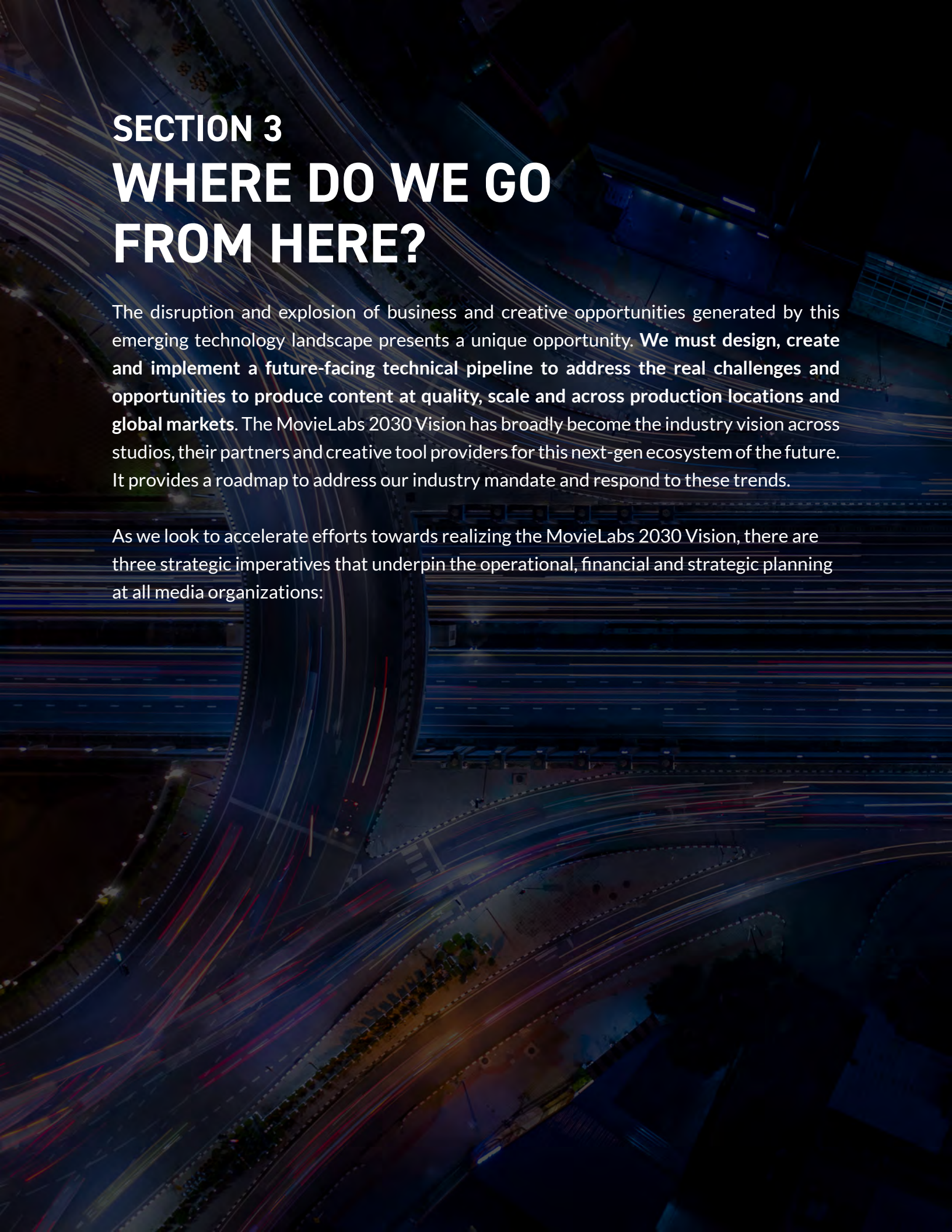
## TREND 5

# Technology is Evolving Extremely Fast, and the Vendor Landscape is Being Disrupted

An increasingly connected production ecosystem is migrating to the cloud as studios begin to understand how to flexibly manage their new direct-to-consumer and theatrical platforms. And at the same time, the traditional post-production supply chain that supports this complex content creation is consolidating and contracting amidst the business challenges and opportunities that these industry transformations and cloud migration portend. New virtual production technologies as well as the democratization of tools enabled by this emerging cloud ecosystem have created new “pop-up” services players. In addition, talent currently tied to facilities can take advantage of cloud-based OpEx business models to start a new lean and mean venture. In the past, the barrier to entry for many of these legacy services providers was the necessary CapEx to build out expansive and expensive physical brick and mortar spaces. With cloud services, these barriers can be eliminated as tools, tech and talent can be “rented” by the necessary processing power for the time needed to complete a task.

A new content creation model is developing where legacy, emerging and in-house studio vendors will need to work together to ensure this new ecosystem will be built from a set of common industry building blocks that are interoperable and secure. This is a once-in-a-generation opportunity to work across the industry to build a future-facing content creation ecosystem.





## SECTION 3

# WHERE DO WE GO FROM HERE?

The disruption and explosion of business and creative opportunities generated by this emerging technology landscape presents a unique opportunity. **We must design, create and implement a future-facing technical pipeline to address the real challenges and opportunities to produce content at quality, scale and across production locations and global markets.** The MovieLabs 2030 Vision has broadly become the industry vision across studios, their partners and creative tool providers for this next-gen ecosystem of the future. It provides a roadmap to address our industry mandate and respond to these trends.

As we look to accelerate efforts towards realizing the MovieLabs 2030 Vision, there are three strategic imperatives that underpin the operational, financial and strategic planning at all media organizations:

# 1

NUMBER 1

## Planning a Cloud Multi-Cloud Strategy

The move to the cloud is foundational to achieving media creation at scale. It can provide nearly unlimited storage and computer resources, a pay-as-you-go (OpEx instead of CapEx) business model, and a shared creative collaboration environment with the workflow benefits of a “studio-centric” single source of truth helping to eliminate the unnecessary duplication of media assets seen today. But that is not enough. The ability to work seamlessly and efficiently in a “multi-cloud” way, through multiple vendors and with a wide array of interconnected tools and workflows, will be critical to enabling complex content creation at scale and in providing the ability to pivot creative and distribution strategies and choices.

One of the foundational principles of the 2030 Vision states that assets go straight to a cloud and stay there, with applications coming to the media. Many workflows today span multiple facilities and require moving assets and metadata between studios, vendors, production offices and sometimes their private or public clouds. Some of the solutions used today to manage assets between facilities are bespoke and different for each pair of partners. In a multi-cloud world, realizing the benefits of scalability, speed and flexibility offered by cloud technologies will require more commonality. This will require studios to work together with cloud providers, creative application providers, service vendors and other industry stakeholders to create open interfaces that connect the silos that exist today.

# 2

NUMBER 2

## Adopting a New Approach to Security

We can no longer rely on legacy security approaches which protect physical facilities when our critical media assets will not live in those facilities but on cloud systems, potentially owned and operated by various third parties. Simply stated, protecting cloud-native workflows that transcend organizations requires a new approach to security.

The MovieLabs **Common Security Architecture for Production (CSAP)** details a new way to think about and implement security – where workflows can be intrinsically secure without impeding the creative flow of complex production work that is shared across many collaborators. The MovieLabs security architecture is concerned with securing and protecting the integrity of assets, processes and workflows in the collaborative environment of media production. It is not concerned with protecting the underlying infrastructure, but instead is designed to protect production on an infrastructure that is not trusted. The implementation of CSAP, which already has traction across cloud providers and the technology community, will require continued studio leadership and investment to ensure that next-generation content security is in place to drive the use of these next-generation multi-cloud ecosystems to produce complex content at scale. In addition, as our creatives increasingly work from anywhere, the ability to implement powerful but transparent security will also be increasingly important.



# 3

## NUMBER 3

# Enabling Flexible Workflows with Increased Automation and Interoperability

In order to enable more time for creative iterations, better collaboration and faster turnaround times, our production workflows must become more flexible, extensible and easier to assemble.

The MovieLabs 2030 Vision describes how workflows can be built using standard building blocks with common industry interfaces enabling automation and an interoperable “plug and play” model. This will allow automation of mundane and repeating tasks (such as finding the correct files, securing them, reorganizing them, correcting miscommunications and understanding the dependencies, etc.), dramatically increasing efficiency and speed. It also enables the development of more interoperable tools so that the creatives decide what needs to be done, and the workflow components are simply interconnected for them. The MovieLabs Ontology and Visual Language for Media Creation provide a common means for machine and human coordination and communication. These MovieLabs initiatives for technical architectures and specifications have gained significant “mindshare” from the major companies that represent key components of this pipeline. And in fact, most of these important industry players are more than just “aligned,” they are beginning the essential work to make this vision realizable.



## SECTION 4

# WHY IS THIS IMPORTANT?

While content is being funded at increased levels, it will also be essential to ensure that these production technology goals and teams are appropriately resourced. While much of the investment necessary to build this next-generation production pipeline will come from across the industry, studios will increasingly need to fund and potentially grow technology and software development teams and the underlying technical infrastructure of connectivity, asset management and workflow orchestration systems. After all, there's no point in increasing content budgets without also removing inefficiencies, or we will simply drive additional waste.

As we hope the foregoing has explained, enabling and resourcing next-generation production technology is not a “nice to have” but truly is “table stakes” in order to create modern global content at scale. And to be able to take advantage of new emerging production techniques, new forms of content, and of course, new business opportunities.

Like the investments in and successful implementation of Digital Cinema, this will be an effort that will require broad industry consensus and alignment around these common foundational “building blocks” upon which the industry can build this new platform. The benefits of enabling this new production ecosystem as a “standard gauge railway” are immense. It provides a common industry path to implement the tools and workflows that will enable efficiencies and scale. And at the same time, just as with Digital Cinema, it allows for the participants in this new ecosystem to find their own ways to creatively innovate and differentiate. We are at an important time in our industry where the arts and sciences inspire each other. This new ecosystem that is now a shared vision across the industry, when made real through these collective efforts, represents an expansive new creative palette that itself will inspire new forms of artistic expression. Coming together to build and invest in this future is not just a good thing to do, it is the right thing to do. And without this standard, considered and collaborative approach, today's media creation complexity will undoubtedly become tomorrow's media creation chaos.



And in return for these investments, this new content creation ecosystem will:

- More easily leverage new creative technologies and adapt to ever-changing future technology by providing an underlying common framework and interoperable building blocks.
- Attract the best creative talent by taking the friction out of media production and giving creators more time and increasingly powerful tools to enable creative innovation.
- Support the growing scale and complexity of productions.
- Provide better visibility, security and control across a more integrated, automated and interoperable media creation supply chain.
- Enable better oversight of production and post-production capabilities that can be accessed and managed both on lot and through a growing and vast array of new external services, vendors and tools.
- Create the future studio and industry ecosystem that will more readily enable future content forms and business opportunities.

Studio and industry technology teams will be tasked with re-inventing the content creation ecosystem to realize the scale and opportunities that this new era in entertainment can deliver. But this time we can plan for it thoughtfully, collaboratively and with deep industry alignment – focused on mitigating complexity, ensuring security and enabling content at unprecedented quality, creativity and scale.

We thank you in advance for your support and look forward to working together to build a future for our industry that is truly worthy of our past.



MovieLabs is a jointly run industry lab that enables member studios to work together to understand new technologies and drive the right ones to adoption. We help set the bar for future technology and then define specifications, standards, and workflows that deliver the industry's vision. Our goal is always to empower storytellers with new technologies that help deliver the best of future media.

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