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Juggling production software

How secure is your shoot?

Workers vs heatwaves

Mentoring media talent

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4

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EVERYTHING EVERYWHERE ALL AT ONCE

Keeping a production on track is hard enough without adding collapsing budgets, content thieves, and climate change to it.

In this issue of ¡AU! Journal, we look at the tools and tactics producers and production managers are employing to steer their teams to content creation victory.

We check out software platforms that are helping schedule and manage ever more complex logistics. And there are a lot of them out there. But even with so many different software options, the media industry still finds it hard to part with good old-fashioned Excel spreadsheets.

We also examine those bigger threats that can take down a production no matter how carefully you prepare. In the wake of the horrific heatwaves of this past summer, we delve into how productions can keep their workers safe in a heating world, and we recap some of the content from our Content Defense Summit held earlier this year about defending against content pirates and cyberattack.

But the most important strategy for keeping a production on track is getting in the right people. We talk with organizations trying to make a difference in developing talent and getting it to the places that need it most.

Neal Romanek
Founder, ¡AU!

CONTENTS

SUMMER 2026

THE PRODUCTION MANAGEMENT ISSUE

PRODUCTION MANAGEMENT SOFTWARE – IT'S HERE TO HELP

(OR: YOU'LL GET MY EXCEL SHEETS WHEN YOU PRY THEM FROM MY COLD DEAD HANDS)

By Neal Romanek

Film and TV productions are highly complex enterprises, requiring the careful coordination of dozen, hundreds, even thousands, of workers.

Still, some production managers prefer a good old Excel sheet. We look at software solutions making productions less chaotic and more creative

When I was a runner at a production company in LA, back in the last century, walls were covered in production strip boards made of vertical strips of thin cardboard, each indicating pages to be shot, color-coded to indicate a day or night shoot, interior or exterior, each written by hand. The strips were regularly replaced and re-ordered by means of an ancient lost technology called "human fingers".

When I worked in animation a couple years later, we used whiteboards, which seemed revolutionary at the time.

Finally came the 90s. As KROQ filled the production office with Pearl Jam, production managers at desktop computers the size of a Trivial Pursuit box were using software - Movie Magic Budgeting and Scheduling - to fine tune film schedules. It was revolutionary.

Movie Magic was created by USC film school graduates Stephen Greenfield and Chris Huntley via their company Screenplay Systems, later called the Write Brothers.

The company's first product was one of the pioneering screenwriting programs, Scriptor. which won a Sci-Tech Oscar in 1994. Scriptor was followed by two more software packages, the aforementioned giants, Movie Magic Budgeting and Movie Magic Scheduling/Breakdown.

Movie Magic became the industry standard for budgeting and scheduling. It is now owned by Entertainment Partners, the industry payroll behemoth that has provided payment tand residual services for the industry since the 1970s, and sits alongside a whole ecosystem of production management and admin solutions.

EP offers licenses for Movie Magic Budgeting and Scheduling as stand-alone SaaS apps or as packages. It also publishes a Paymaster Rate Guide which gives teams regularly updated numbers on contract and labor rates.

Other services offered include production finance, a community hub, and venerable background talent agency Central Casting, which celebrated its centenary last year. The company also offers an Academy to train up production managers on various EP tools.

Despite the digitization of the film and TV industry and the battle-tested software solutions EP provides, there are still line producers, production managers, AD's, and supervisors who still like a simple – or sometimes not so simple – Excel Spreadsheet.

One of the sharpest double-edged swords of creativity is that you do things your own way, and you strongly believe in doing them that way. In the best circumstances, this can make you a visionary, a leader, a maverick. In the worst, it makes you like one of those WW2 soldiers discovered on an island fighting a war that ended 30 years ago.

The shoving match between "this is the way I do it" and accepting new more efficient tools - at the risk of losing your distinctiveness - is at a fever pitch right now. It's not just a creative struggle, but a financial one. Are my old school tools becoming outdated and costing more than their giving back? Or is conservatism the best policy when there's a technological hurricane going on outside?

So let's set aside our favorite Excel methodology, just for a few minutes, and look at a few production management solutions that are helping productions work more efficiently - and creatively...

YAMDU

"The industry is definitely in flux and that requires the most efficient way of working possible," says Mick O'Callaghan, Customer Success Manager at Yamdu.

Based in Munich, Yamdu was founded in 2013 by Florian Reimann who had a career in corporate software solutions at Seriotec, a company specializing in browser-based applications with customers that included big media companies.

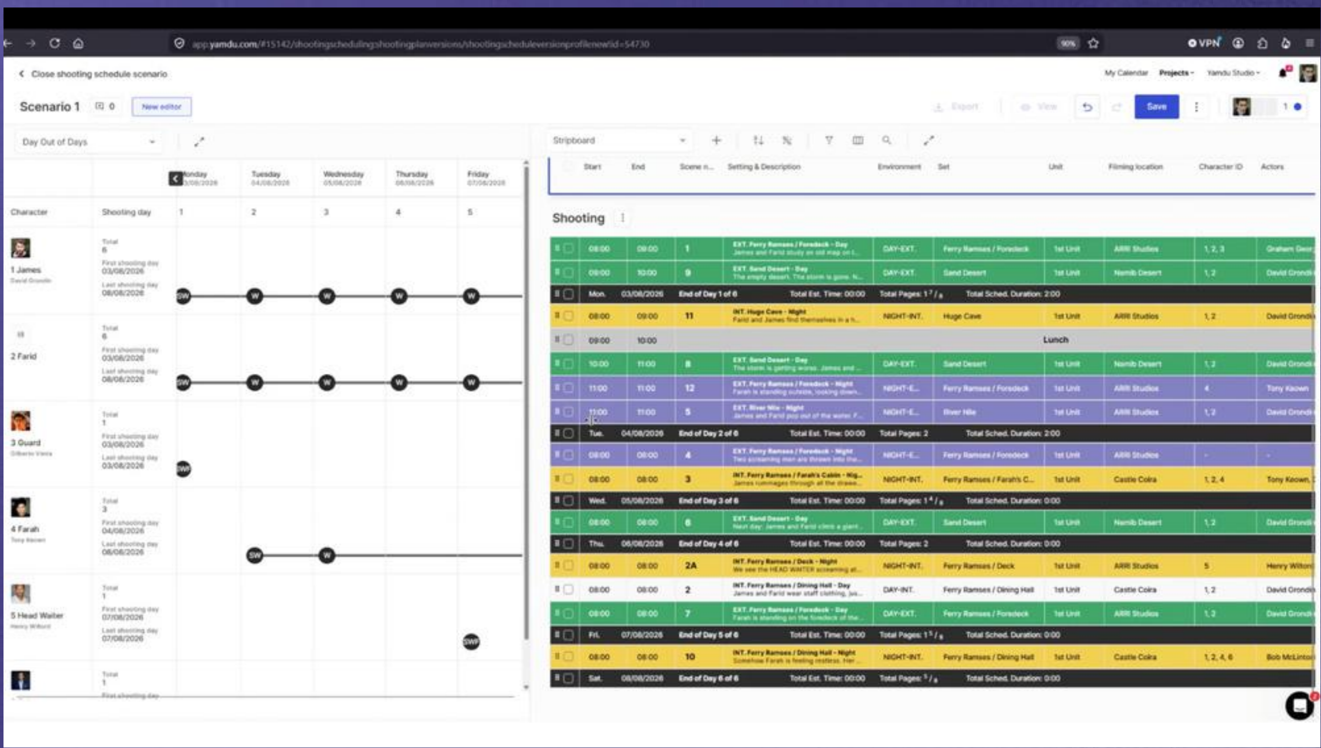
Yamdu is a dedicated production management solution, built from the ground up to serve traditional shcheduling and organization, with enough flexibility to serve diverse types of productions. Its core tools serve the key players in the production office – line producers, production managers, production coordinators – to give them real time data on changes to the production and to see how changes impact each shooting day.

"Productions can often still be Excel-based, with workflows that don't immediately update when a situation occurs," says O'Callaghan. "In Yamdu, if a shooting day were to change, you can immediately see the knock-on consequences of that."

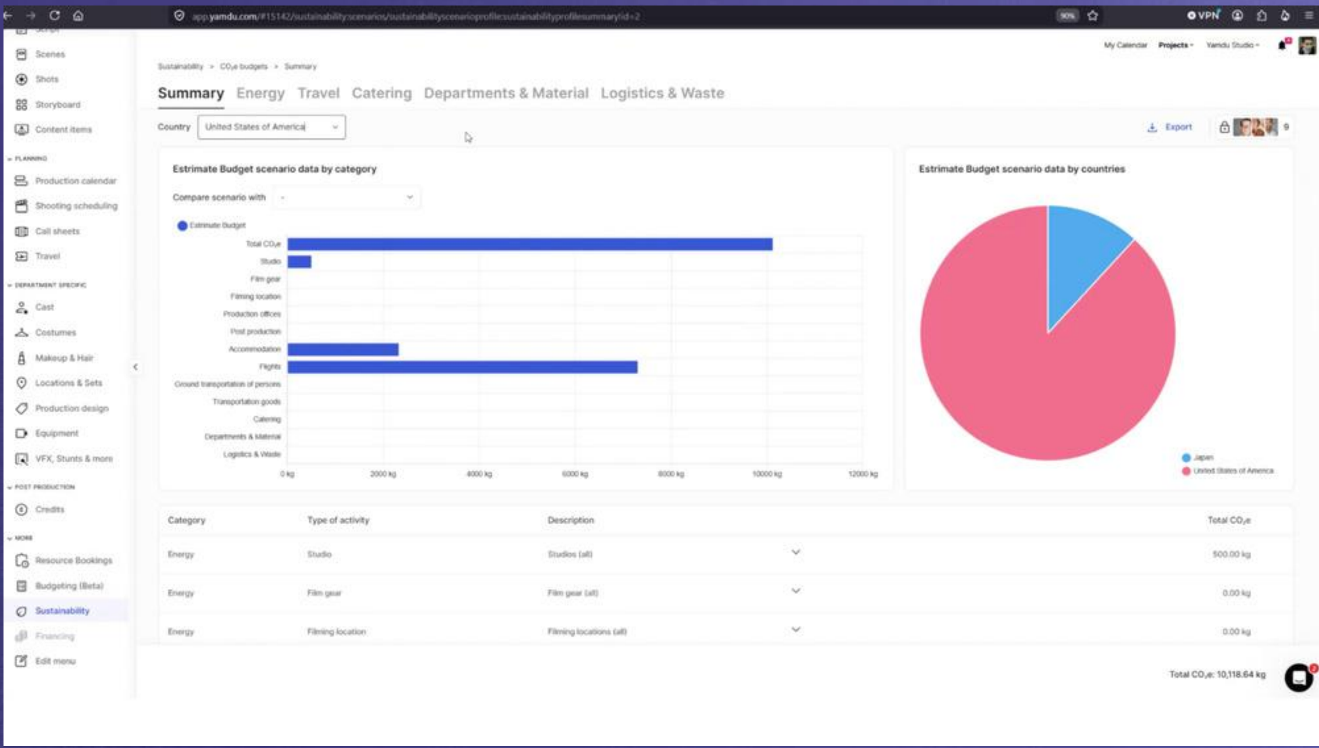
Being able to see into the future and anticipate problems before they start is the Holy Grail for a production manager. Yamdu offers the opportunity to run through possible scenarios before production starts, saving time, aggravatiion, and money.

Having "a single source of truth" is now a cliché in management circles, but in a film or TV production, with hundreds of people trying to hit a small, moving target, day after day, it's essential. With a browser-based production management platform, if there are overnight script changes, the logistical consequences of those changes appear instantly across the platform and are published out to the appropriate team members. Updating everyone at the same time means fewer hours explaining the changes to the crew and more time focusing on solutions.

Breakdown is the part of the production, where – perhaps for the very first time – the screenwriter's dream is dismantled apart and brought down to the real world.



Single source of truth: *Yamdu updates everyone across the production*



Green cred: *Yamdu includes robust tools for sustainability and carbon reporting*

Yamdu can import scripts from Final Draft, Celtx, or a PDF. Users can also export script material from Yamdu back out to those screenwriting programs. The script import is accompanied by a rich, automated breakdown process, where assets like character, props, locations are recognized and processed by the Yamdu platform.

"We are aware that nothing will run smoothly on a film production," says O'Callaghan. "There are too many moving parts, there will always be consequences, and there will be consequences of consequences.

"The old way of working was gargantuan Excel sheets that tracked a lot of information but got outdated or became unwieldy over time. We're focused on an agile, real-time, single source of truth concept for cast and crew."

Yamdu's developers have been embedded in film and TV for a long time. Founder Florian Reimann has a masters degree in Arts, Entertainment & Media Management. The tools have been designed to respond to how top production teams think. But they also leave room to encompass different types of content production – from feature films to corporate video.

"We're scale-agnostic. There's nobody who should not be able to use Yamdu for a project. We have YouTubers, we have one-man shows, we have students, we have every conceivable type of project. And we have price points for everyone too."

Yamdu manages the pitfalls of trying to be everything to everyone by sticking to the tools that are practical for managing physical production and limiting its tools for things like detailed budgeting. The streamlined budgeting features are aimed at the planning of the production, rather than facilitating HR and accounting.

Sustainability reporting is an increasingly important part of a production manager's job.

At Yamdu's higher tiers, the platform offers easy sustainability and carbon accounting, with Excel or CSV export to reporting tools like the Green Production Guide and the PEAR toolkit by PGA, Albert, EcoProd, KlimAktiv, and others.

Yamdu helps production teams record sustainability detail on all aspects of production. Locations can be tagged with information about production power or heating sources, travel impact, catering, materials, and waste disposal. Reports generate calculations of energy expenditure, which can also be measured in carbon emissions, based on production data.

Members of the Yamdu team have also been contributors to the development of the EU's MEDIA Carbon Calculator, launched at the end of 2025, which aims to provide a European standard for measuring emissions for audiovisual producers.

Yamdu's Flex plan—for one user, one project – comes in at £35 per month. This Flex tier is also a useful option for the early development of a script, allowing a small team or single producer to do prep work before a production company comes on board.

A step up is the Yamdu Core tier at £159 per month (billed annually) with 20 users, unlimited projects 25 GB of storage, and unlimited external contacts.

Yamdu also offers bespoke, more elaborate packages which can include additions like timecards, accessible by crew through the Yamdu app.

DZJINIUS

dzjinius is another production management platform which shares some of the features we see in Movie Magic, Yamdu and other competitors. But instead of catering to an endlessly fractaling media ecosystem, it has been honed to be a solid high-end production workhorse, with particular applications for continuing drama series.

Based in Belgium, dzjinius has provided the organizational framework for over 2000 productions. Its features include tools for scheduling, budgeting, auditions and casting, and scriptwriting.

"Technology is changing things, but rarely where people expect," says dzjinius CEO Christophe Haan.

Haan has comes from an enterprise software background. He was frankly appalled at the fractured organization structures and resistance to change he saw when he joined the industry in 2024.

Haan: *"Production is no longer linear"*

“Technology does not make a crew shoot faster,” says Haan. “What it changes is everything between departments - re-keying, version confusion, reconciliation of a schedule against a budget, which often lives in a different file owned by a different person.

“When a location suddenly falls through, the cost is not the rescheduling. It is the cascade of revised strips, cost reports, call sheets and crew notifications, done by hand across systems that do not know about each other.

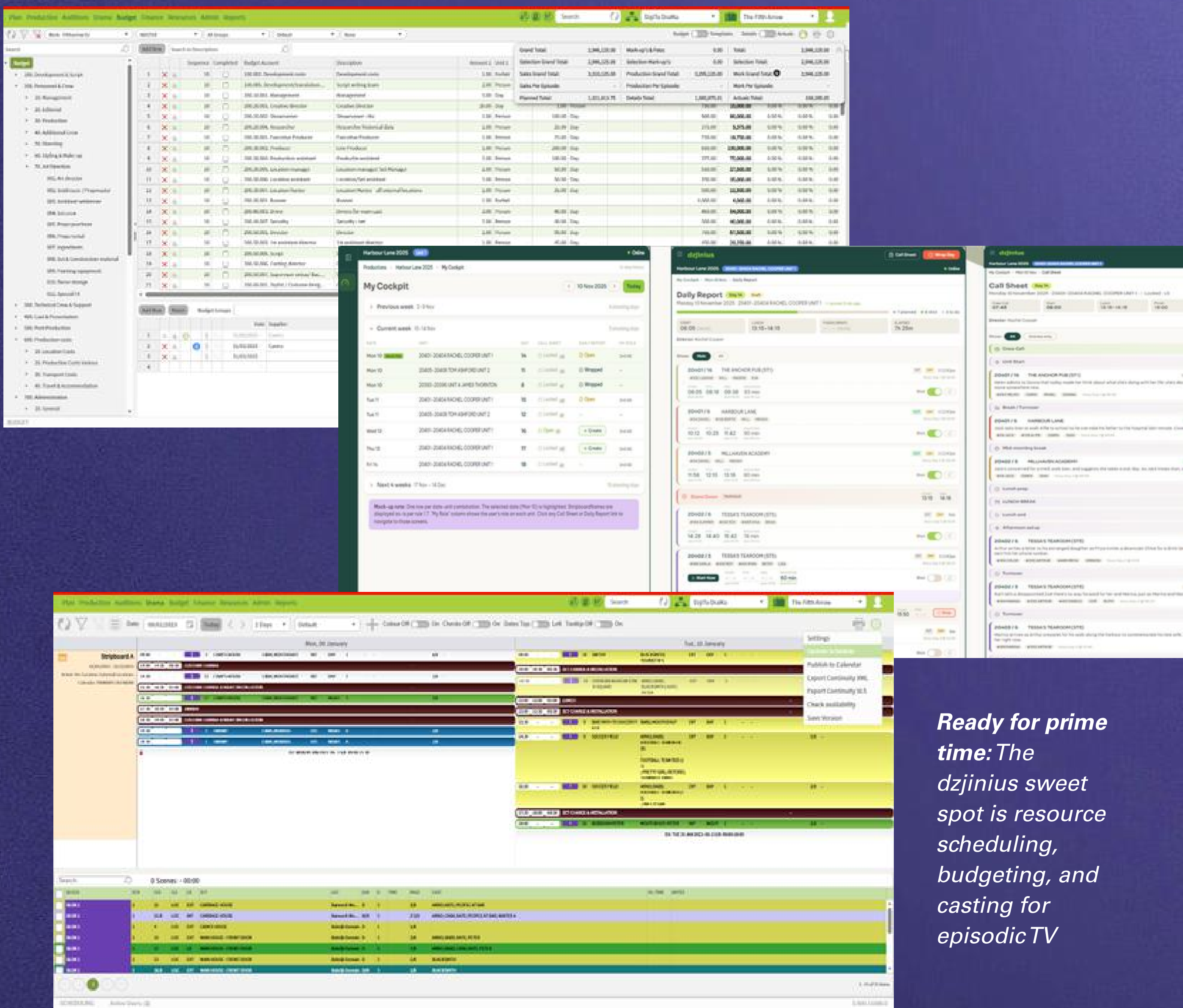
Complexity seems to be the default setting for productions now, with producers creating more content for more platforms, with more partners. And while costs keep rising, advertising revenue is declining.

“Production is also no longer linear: work does not move neatly from one stage to the next, and the same core content has to feed several outputs. Meanwhile most workflows are still built around older, sequential models. That mismatch is where the friction sits.”

Haan believes that production needs a tech upgrade, to gain efficiencies, but in order to ultimately help people work better.

“Teams that can work from live production data stop making decisions on reconstructed reports and start seeing trade-offs in real time. Continuing drama shows this most sharply. Our customers deliver 200 to 300 episodes a year with multiple units shooting in parallel, sharing talent, sets and kit.”

Adopting platforms built on a single data model is the solution to managing all this complexity.



Ready for prime time: *The dzjinius sweet spot is resource scheduling, budgeting, and casting for episodic TV*

The tools in the dzjinius suite include scriptwriting, breakdown, scheduling, resource planning, budgeting, casting, call sheets and reporting.

Companies are losing their appetites for multi-year, big-bang transformations. Modular software that can be brought aboard department by department, with open APIs, and maybe only for a single project, appeals to companies needing to stay agile.

The newest addition to dzjinius suite is called "dzjinius on-set", a tablet-first application for 2nd assistant directors, script supervisors and heads of production. The app aims to close the gap between the production office and the studio floor.

It's designed with the idea that the discipline set up in the production office, may not always make it to the battleground of the set, where teams can fall back on back on spreadsheets, messaging apps, PDF mark-up and handwritten notes. dzjinius on-set features a daily production report, live production visibility, live call sheet and script and scene delivery.

The tool is online-first but with offline capability for locations with poor connectivity. In 2027, an annotation layer will be introduced that can link notes to structured scenes, schedules, characters, along with continuity capture tools and post-production feeds.

PLANNER

Working in post production, Emma Corbett and Jack Jones had been thinking about how to improve working efficiency quickly without having to reinvent a workflow or build an entire platform. The result was a lightweight spreadsheet-style scheduling system called Planner, launched early this year.

"We were looking for something that was obvious, and spreadsheets felt like a very obvious start," says Jones. "We looked at all the production spreadsheets that we get sent. where people have had to remove information that's less relevant to us. Or it might be version twenty-three, and someone on the other end is tracking information and trying to remember what was sent where."

Corbett and Jones also saw the problem of each project being an "island of invisibility", where one project couldn't see what was happening in another. Planner aims to give people an easy way to make and share a schedule, plus a way for production companies to easily query data across those schedules to measure efficiency and spot synergies.

What makes Planner appealing is it doesn't ask pressured workers to adapt to yet another new system. Most are already engaging with spreadsheets to some degree – sometimes exclusively. Planner takes that spreadsheet methodology and sneaks in greater efficiency, visibility, and adaptability.

Corbett and Jones want to get mass adoption quickly and so have enabled a generous free tier of the app. They have looked to other post tools, like Frame.io which, through creating a really easy entry point for freelancer, eventually became ubiquitous. In fact, Jones has called Planner "Frame.io meets production spreadsheets".

Their post-production experience has also informed the Planner UI, incorporating drag & drop, rippling of changes, and cutting and pasting in ways that feel intuitive for an editor - they want the tool to be used with that same fluidity, taking scheduling out of the realm of slow and head-scratching labor.

"Having something that's enjoyable to use was a big factor," says Jones. "We wanted something that was quick and beautiful."

So why is an industry that prides itself on creativity and productivity still clinging to slow and un-beautiful tools?

"You can look across different industries. Wedding planning has great software. They've been doing it online for a long time. It's reasonably priced – some of it's free.

"We wanted to keep Planner relevant to the thing that it's doing. Other solutions are great for big companies, but the challenge is that they all do too much. And it still hasn't solved the bigger problem which is that we still see a lot of people working across spreadsheets."

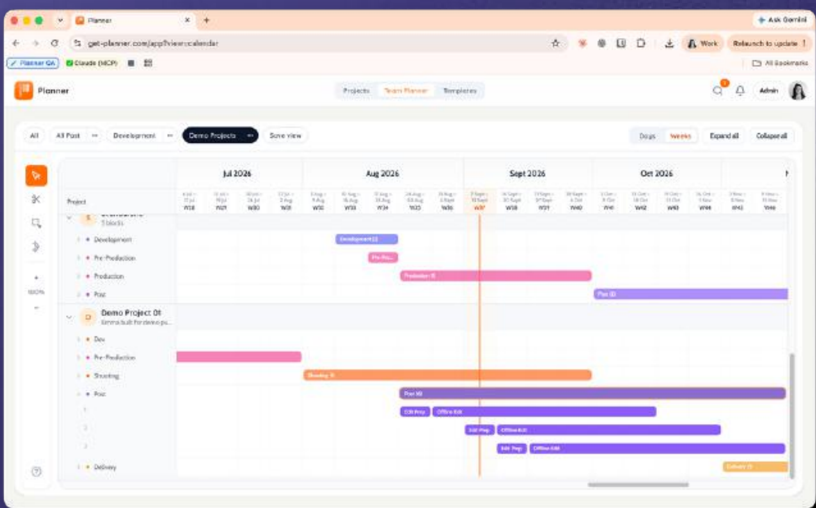
Freelancing forces people to stick to the basic well-known technologies – Excel and Dropbox. Supercharging the tech people are already using – spreadsheets – offers a lower bar to entry than asking freelancer to jump onto big all-encompassing platforms.

With the media industry undergoing a transformation, the team is aware of how Planner might be useful in newer formats. We specifically have thought about podcasting," says Jones. "Podcast is a reallyinteresting industry because it's more slightly more forward thinking. It's more more willing to take risks, and it hasn't adopted the legacy solutions."

"For a long time companies would have a problem and send out their CTO's to look for solutions. They would pick the one that was most relevant, then they would try to change their business's habits to fit into that software.

"Now we're entering an age of the abundance of software, where we're going to see more software than could be imagined. Companies that previously couldn't afford to have software developed for them can now develop it themselves or bring in people to develop at a far more affordable rate.

"There's more desire around automation for people to use their time better - not necessarily to cut down on workforce, but for people to just do more."



Keep it simple: *Spreadsheets are still useful as ever*

THE SUMMER HEATWAVES SHOWED AN INDUSTRY UNPREPARED FOR THE RISING TEMPERATURES AHEAD

The hottest European Summer on record killed 35,000 people. How will productions – and their crews – cope as temperatures continue to rise?

The cold, clinical term "excess deaths" simply means the difference between the number of deaths expected in a population in a given period and the actual number of deaths in that period. Just the first of this summer's heatwaves resulted in 10,000 excess deaths across Europe, according to European mortality monitoring organization EuroMOMO, whose work is backed by the WHO, the European Centre for Disease Prevention and Control, and Denmark's Statens Serum Institut.

The total excess deaths over the whole summer were estimated at 35,000.

In the UK alone, scientists estimated that about 440 people a day died at the peak of the first heatwave, with the total premature, heat-induced deaths at around 2700.

These high temperatures have been erroneously referred to as "the new normal". But the truth is the current weather is just a stepping stone to even higher temperatures next year and the year after and the year after.

It's been well understood for decades that ending fossil fuel use is the fastest way to slow the progression of global heating. Despite that – and despite international commitments made – the amount of greenhouse gases emitted globally is higher each year. In 2025, the world emitted more GHG's than any other year in human history, 60.63 billion tonnes of CO_2 equivalent.

Even if a magic wand made all energy 100% carbon-free overnight, the greenhouse gases already released would continue to warm the planet. There is no "off" switch for global heating.

While there are an increasing number of organizations, vendors, and experts working to reduce emissions in all sectors, the impact of heat on workers needs to become a regular part of business planning now.

PUTTING WORKERS FIRST

"We've had this for a few years now, and it just seems to be getting worse and worse," says Spencer Macdonald, National Secretary of Bectu, the UK's union for creative crafts and crew. "The temperature seems to be breaking records every year. We've ended up just issuing general guidance because there is no official maximum temperature for workers."

In the UK, the Approved Code of Practice to the WHSWR (Workplace Health, Safety and Welfare Regulations 1992) says that the temperature inside a workplace should be at least 16°C, or 13°C if the work involves rigorous physical effort. But there is no upper limit recommended.

After all, it's Britain, why would you have to worry about extreme heat?

"With the minimum temperature, workers can say you need to put in place systems to increase the heat, or they're entitled to refuse to work. But there's no maximum. The temperature could be any ridiculous amount and there's no legislation to say 'that's unacceptable'. But we try to say, actually

there should be. Employers still have a duty of care. If workers are in a space where the heat and humidity is unbearable, they need to put in steps, because of their duty of care."

Bectu has been doing work on improving welfare in facilities. One focus is construction, which often involves outdoor work. Considerations include providing shade and readily accessible fluids. The proposal is being shared with facilities operators now for feedback, with plans to roll the provisions out to the rest of crew departments.

"The creative industries make things. That means workshops, which are generally closed spaces, often with heat generating equipment in them. Those workshops aren't designed for these sorts of temperatures. If they're using heavy machinery that generates heat as well, and that compounds the problem. We have asked a few productions if they can stagger their times, so that they can come in a lot earlier when it's cooler, and maybe go home earlier, and also have breaks in between. Sometimes in those workshops, they have to wear PPE as well, which is quite heavy. So we've asked for proper ventilation among other things."

Bectu communicates regularly with the creative unions in France and the US, though the issues around work in extreme temperatures haven't come to the fore yet.

SUSTAINABILITY IS ABOUT HUMAN WELLBEING

Tilly Ashton is an experience production manager and sustainability expert. As Sustainability Advisor at Cardiff-based production company Severn Screen, she has been a key driver in Wales' industry-leading film and TV sustainability transformation. But for her, sustainability is about more than just emissions reduction. It's ultimately about human well-being.

"On a personal level and professional level, I am fully committing to the decarbonisation process and mandated net zero targets. But I'm also aware of the need to risk assess, mitigate, and adapt," says Ashton, "The most recent heat wave (June) has really galvanized conversation. It's as if our role is slightly shifting in terms of building momentum around the need to decarbonize and build circular economies, to also be very much aware of the literal risks to life when you're working in extreme weather conditions."

Weather changes associated with global heating aren't restricted to high temperatures. Heat is energy, which creates more energetic weather on all fronts. Greater swings in barometric pressure mean more violent storms. Heat holds on to more water, so that means bigger downpours – of rain in summer, or snow in winter. And these extremes become less and less predictable. The Rube Goldberg contraptions at the heart of complex systems mean that outcomes can be abrupt and bizarre.

There is a lot of attention being paid now to the potential collapse of the AMOC (Atlantic Meridional Overturning Circulation), a deep sea current, that travels some of the same ocean as the Gulf Stream and brings warm water to the North Atlantic. It's the reason Britain has had such a stable and comfortable climate as compared to grim-wintered Canada, which shares similar latitudes.

Global heating is causing the AMOC to slow, which means that at some point, the heating could get turned off for the UK and Northern Europe, bringing colder, drier winters, and making it harder to grow food. Getting ready for a climate-changed world means preparing for extremely high temperatures now, but for cold Canada-style temperatures in 20 years (maybe we can look forward to one, perfectly mild summer in 2035).

In the recent heatwave, one production crewmember reported that the heat made them feel "panicky". A reasonable response to emergency weather, but extreme heat also has been shown to have a direct effect on cognition and emotions – a real liability when you're trying to concentrate on precise creative work.

"In the June heatwave, productions were having to adapt rapidly, on the hoof. Two productions I knew of asked their sustainability managers to liaise with their health and safety people to help share the load of making sure that case and crew were ok.

"You're already locked into locations and schedules. To cancel is a big decision that has to be taken very mindfully. The interim practical mitigation that has been going on has been conversations with health and safety managers on the ground."

TECH HATES HEAT

There are very few instances where heat improves how tech operates. In a thoroughly digitized production environment, infrastructure can collapse quickly. Anecdotal reports of phones, ipads, and connections failing were a regular occurrence during the heatwaves. Video streaming connections that would be taken for granted, slowed to a halt as overheated machines refused to send video at any useful rate.

If you are in a remote, dangerously overheating, location, phones ceasing to work can lead to a production grinding to a halt, or should someone need medical attention, something much, much worse.

Also reported during the heatwaves were productions making efforts to prioritize cast and talent by providing protection against the heat, but cast members sometimes feeling like they were on their own. Naturally, a make-up trailer without air conditioning is just a nightmare palace, but crew from more than one production said they were left with makeshift solutions for cooling, with air conditioning reserved for others without consideration for how much heat risk their jobs might entail. Caterers for example, are already working long hours, in temperatures 10 degrees higher than the rest of the crew, often in mobile kitchens well away from an air conditioned structures.

Production energy supplier On Bio, who specializes in low carbon fuel for productions, also provides temperature control equipment. They told ¡AU! that all there wasn't a single air conditioning unit on their shelves but that requests for them came in ad hoc, often being needed on the day.

There seems to be virtually no provision for air conditioning ahead of a production. If you're making a wager that the weather conditions are doing to be bearable for crews at a date in the distant future, it makes sense that you wouldn't include air conditioning in your production budget. But heatwaves are going to become more frequent and more extreme. Given that we are also coming up on an El Niño, producers can virtually guarantee that more temperature mitigation will be needed on shoots, and that there will be competition to get these. If you want to protect your crew, best to put it in the budget now and

"THE TEMPERATURE COULD BE ANY RIDICULOUS AMOUNT AND THERE'S NO LEGISLATION TO SAY 'THAT'S UNACCEPTABLE'"

reserve your AC units in advance.

“Ultimately what you're talking about is potentially a risk to life. When you combine that heat with film working patterns - working strange hours, tight turnarounds, night shoots, body clock shifts, those exhaustion impacts on the human body - I am not a medical professional, but I imagine that body is vulnerable to those extremes.”

We might think of the world of post production as isolated from the issues affecting crew who are often working outdoors, but the fact is that even in high end facilities air conditioning is not always a given. As previously mentioned, there is no legal requirement to keep temperatures down in the workplace, and while your screening room may have air conditioning and a mini-fridge, this may not be the case for a small animation team working on a previs in another location.

The media industry is built on the backs of freelancers and home air conditioning has been considered a luxury for most of British history. Freelancers are often left to solve the heat problem by themselves – and are left having to answer for why their overheated laptop is taking ten times longer than usual to upload a file.

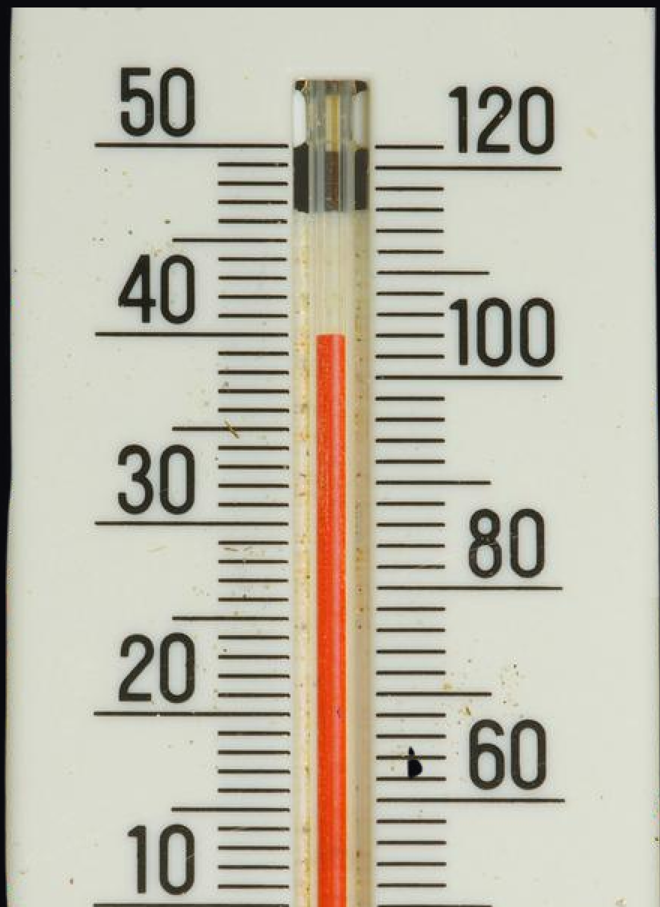
London-based Framestore told us that they had offered employees flexibility in working arrangements, with some people staying home, or coming in at staggered hours to avoid rush hour crowds. Even if your workplace and your home are air conditioned, a rush hour crush in public transport at 38 degrees is not something to be toyed with.

Production teams – and it’s probably a phenomenon as old as medieval travelling players – are proud of being able to put together something brilliant in difficult conditions. While we openly object to the brutality an old school director might have put cast and crew through, there’s still a part of a lot of us that is proud of its ability to endure and to realize impossible demands. This macho culture – embraced by women as much as men – can endanger lives.

“If you’re making decisions from an air-conditioned trailer, that's very different from experiencing what it's like on set, or in front of the cameras, or under the lights, or in the middle of a gravel car park. It’s improtant that production making those quick decisions about mitigating climate risks know how it feels for everybody, even if it's just a quick walk down to set and back.

“There's a stoicism in our industry, which comes from the long hours culture. You don't want to be the one on the team that starts complaining or starts being demanding. It’s very much about sharing the load and getting through this together.

“If you're not coping, do you feel that you can speak up and say, ‘I'm feeling a bit faint, I'm feeling a bit thirsty? think I need to go inside for a bit.’More often than not, I would say people aren't going to speak up, and then that's where you've got that risk to life. If somebody is being stoic and just putting up with it, they're not going to get the help that they need quick enough.”



READ BECTU'S GUIDANCE ON TEMPERATURE AT WORK

Evolving Ecoflow X

Ecoflow began in the IBC Accelerator program, which organizes and promotes cutting edge media tech trials. The sustainability organization is now standing independently as "Ecoflow X".

By Ian Nock, Ecoflow X

WHO ARE WE?

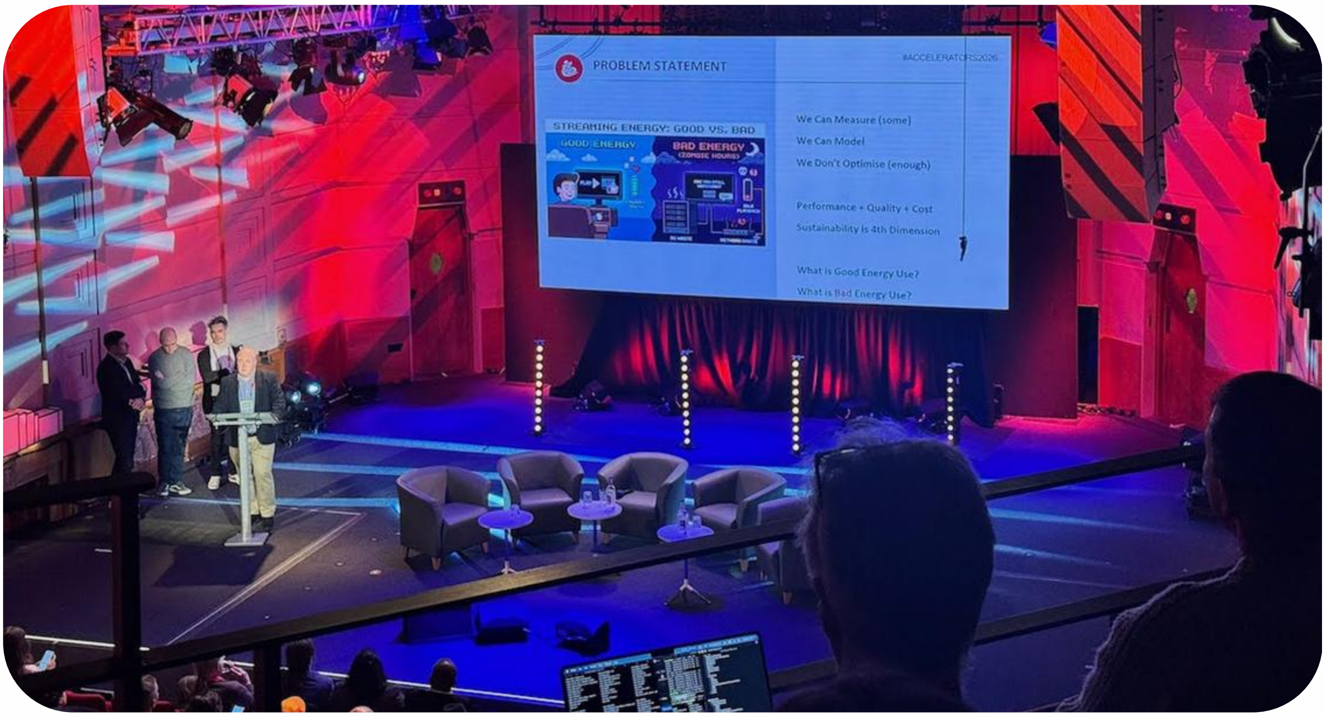
We are an alliance of broadcasters, technology partners, and industry bodies focusing on experimentation, technical validation, and operational insights across the streaming value chain. We bridge the gap between corporate sustainability commitments and practical engineering solutions through open methodologies and targeted tools.

Having graduated out of the IBC Accelerator Program to become an official IBC partner, Ecoflow has transitioned into Ecoflow X. The "X" signifies our evolving, experimentation-driven approach and our open future.

Our participants are shifting focus to creating practical tools and frameworks for impactful change. This stems from a core industry reality: gathering reliable, actionable data remains one of sustainability's biggest hurdles. Our solution addresses this directly by developing methodologies that utilize real-world system data while respecting commercial data privacy.

WHO IS INVOLVED?

Our alliance includes key organizations driving short-term sustainability action. Our steering group comprises representatives from Accedo, Humans Not Robots, the Institution of Engineering & Technology (IET),



Sustaining interest: *Exoflow began as one of the IBC Accelerators, tech projects that are publicly pitched to an audience of media tech professionals* and ITV. We also benefit from active participation by Channel 4, the Digital TV Group (DTG), Quortex, and the EBU.

DIGITAL TWIN IMPROVEMENTS

A central initiative is our Digital Twin of streaming workflows, which pairs live operational data with an evolving predictive model to forecast power and energy usage.

Originally created during our time in the IBC Accelerator, our current focus is refining this model as an open-source resource for real-world deployment. Crucially, we are working to elevate the model's precision and accuracy through enhanced data collection and refined representation layer modeling.

EXPERIMENTATION

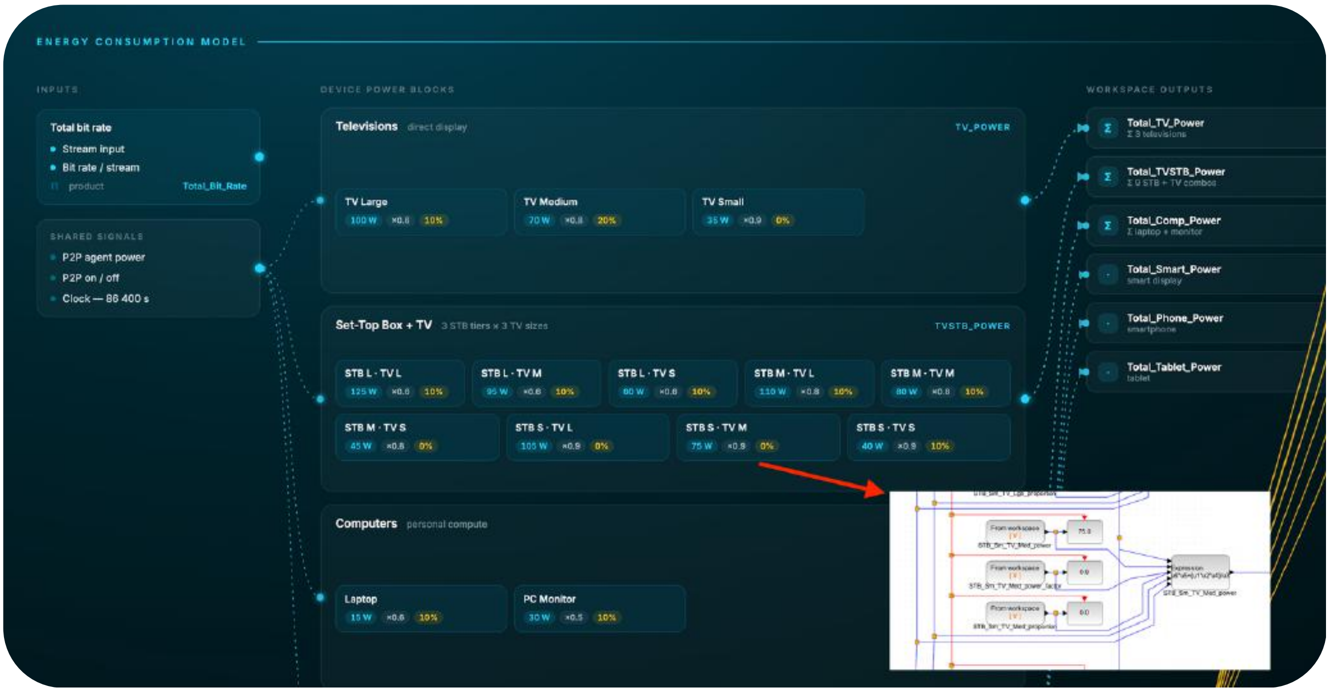
Experimentation remains at our core.

To ensure our Digital Twin is grounded in reality, we pair modeling with representative streaming testbeds and live data extracts.

Additionally, we foster active collaborations with complementary sustainability initiatives across the media tech ecosystem to reduce duplication and accelerate shared learning.

THE FUTURE OF ECOFLOW X

Industry initiatives take many forms, each with distinct advantages in the current economic landscape.



***Pair for the course:** A visualisation and extract of Ecoflow's Digital Twin data*

VISUALISATION AND ANALYSIS

Generating power and energy metrics is only part of what we do. Delivering actionable visual insights is where true value lies.

We are developing methods to contextualize sustainability data alongside core business KPIs and operational scenarios. Key workstreams include integrating Digital Twin output into enterprise dashboards, deploying AI-driven analysis, and evaluating Agentic AI tooling for real-time decision-making.

Rather than building a broad, administrative member organization, we have deliberately chosen a lean, goal-driven collaborative structure. Our steering group and participant network will continue driving targeted projects while exploring pragmatic long-term operational models.

We welcome organizations that share our commitment to sustainable streaming. To join or collaborate, visit www.ecoflow.tv.

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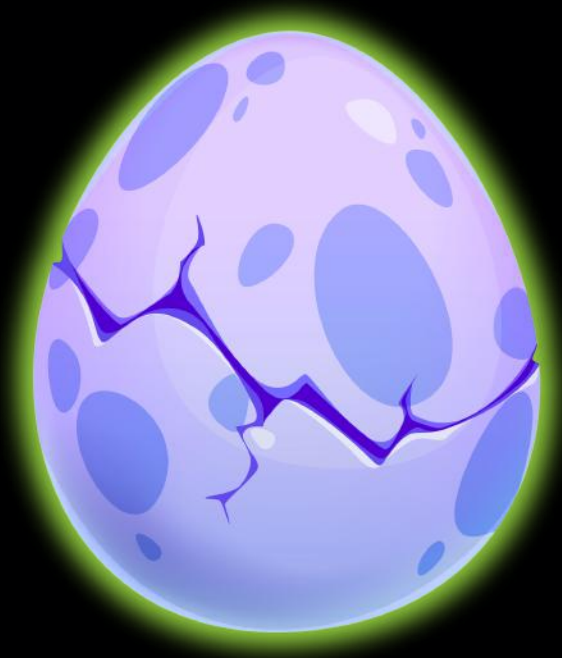

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AROUND THE WORLD IN C2PA

By Tommy Flanagan, Faultline

From the EU to LA, content provenance is starting to be mandated. But who is proving the provenance?

Content provenance - the origin or source of an image or video file - crossed an important threshold this summer.

In Europe, the EU is now applying transparency requirements to AI-generated and manipulated content via Article 50, while in the US, California has simultaneously brought its own AI Transparency Act into operation.

Being regulatory acts, the language of each is mostly technology-neutral. However, for the video technology industry, it suggests all roads lead to one particular technology movement—C2PA (Coalition for Content Provenance and Authenticity).

Regulators are demanding that outputs from generative AI systems be marked with machine-readable provenance. Yet neither the EU AI Act nor California's AI Transparency Act mandates C2PA by name, while Article 50 states that providers of genAI content that do not follow the voluntary code can demonstrate their compliance though other adequate means.

The problem is, few other adequate and interoperable means exist, which is why the industry continues to rally around C2PA, which was founded in 2021 by Adobe, Arm, BBC, Intel, Microsoft and Truepic with the goal of creating an open standard for establishing the origin and history of digital content.

But while C2PA may provide a way to establish where a piece of media came from and what happened to it along the way, a video does not travel from an AI model to a consumer in one neat and irreversible package. It passes through a long chain of production, encoding, packaging, distribution, and personalization systems.

So, the question we have raised before becomes even more relevant—whether true provenance can survive the full streaming supply chain?

The EU's Article 50 transparency obligations took effect on August 2. Deployers of machine-readable markers within AI-generated or manipulated content have additional disclosure obligations - for deepfakes and AI-generated material concerning matters of public interest. The European Commission says the technical measures must be effective, interoperable, robust and reliable "as far as this is technically feasible."

Crucially, Brussels has not mandated C2PA, and likely never will. The legislation establishes the transparency requirement, but the tech to satisfy the requirement is another matter.

TRANSPARENCY IN THE GOLDEN STATE

California is taking a similarly provenance-focused approach, and this is where the story becomes relevant to US readers.

The latest California AI Transparency Act (CAITA) also became operative on August 2 (coincidence?). It requires generative AI providers to embed latent disclosures in AI-generated images, videos and audio content, again where "technically feasible and reasonable". Those disclosures can include the provider, the AI system and version, creation or alteration date and a unique identifier. Providers must also offer an AI detection tool.

From January 1, 2027, California will go a step further. Large online platforms will have to detect provenance data attached to content and provide an interface indicating its availability. Where technically feasible, they must not knowingly strip compliant provenance data or digital signatures.

From 2028, new capture devices sold in California will also have to embed latent provenance disclosures by default, subject to technical feasibility and compliance with widely adopted standards.

There is an important caveat for the streaming industry.

California's law explicitly excludes products and services providing exclusively non-user-generated TV, streaming, movie or interactive experiences.

For instance, Netflix—which is increasingly implementing AI tools for content production—will not be immediately required to deploy a C2PA badge on every series episode with AI-generated crowd scenes.

But still, the wider content ecosystem matters. Cameras, AI tools, social platforms, content management systems and other services sit between the point of creation and the point of consumption.

PROVENANCE IS EASY; PRESERVING IT IS HARDER

The paraphrased proposition of the C2PA is quite straightforward—attach cryptographically verifiable information to media so that downstream users and platforms can establish who created it, what tools were used, and what modifications subsequently took place.

The standard has matured considerably. C2PA's December 2025 specification introduced support for live video streaming, while its April 2026 release expanded the live-video provisions to dynamically packaged content. The specification supports ISO Base Media File Format and CMAF, with validation performed at the segment level.

This evolved C2PA from a metadata layer that was an "interesting" tool for photographers and

C2
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journalists, to something that can properly fit into the streaming machine.

WIDER CONTENT ECOSYSTEM MATTERS

At several points along the journey pictured above, the video asset can be transformed or manipulated.

Within this workflow, a broadcaster may create multiple versions and resolutions. A streaming service may transcode the content into an adaptive bitrate ladder.

A packager may create manifests and segments on demand. A server-side ad insertion (SSAI) system may splice advertising into the stream. Localization systems may add subtitles, dubs or graphics. The streaming platform itself may then clip the content for redistribution on other services.

The C2PA specification has mechanisms for recording subsequent changes, and its live-video architecture is explicitly designed to deal with dynamically packaged streams.

But still, we don't really know who is responsible for maintaining the chain of trust at each stage—and neither the EU's Article 50 or CAITA help clarify that.

C2PA can establish that a particular provenance claim has been cryptographically signed and that subsequent changes can be recorded, but it cannot (as far as we know) establish that the underlying content is factually true.

In effect, that means authenticated deepfakes still remain deepfakes. Likewise, the absence of C2PA credentials (or other provenance alternatives) does not automatically mean that content is fake.

There is already some scrutiny of C2PA. A 2026 independent security analysis concluded that the current specifications do not achieve some of their claimed security goals and warned that the technology should not yet be relied uponfor high- stakes applications such as journalism or legal evidence.

The researchers of the paper, published here, describe C2PA as promising, but argue that premature reliance could mislead users, platforms and policymakers.

THE CONSUMER IS THE MISSING LINK

Another elephant in the room is what are consumers supposed to do with all this information? If a viewer watches a live news report on a smart TV, will they see an obvious indication that the footage is AI-generated or manipulated?

There are indications that consumers will be able to inspect its provenance, but we are yet to see a clear example.

California's legislation at least recognizes that provenance needs to survive beyond the point of creation. Its 2027 provisions require large online platforms to detect compliant provenance data and make its availability visible to users, while prohibiting the knowing stripping of compliant provenance data where technically feasible.

C2PA has been working toward an end-to-end provenance ecosystem for five years. Now, regulators on both sides of the Atlantic are playing catch-up—creating incentives for machine- readable content provenance.

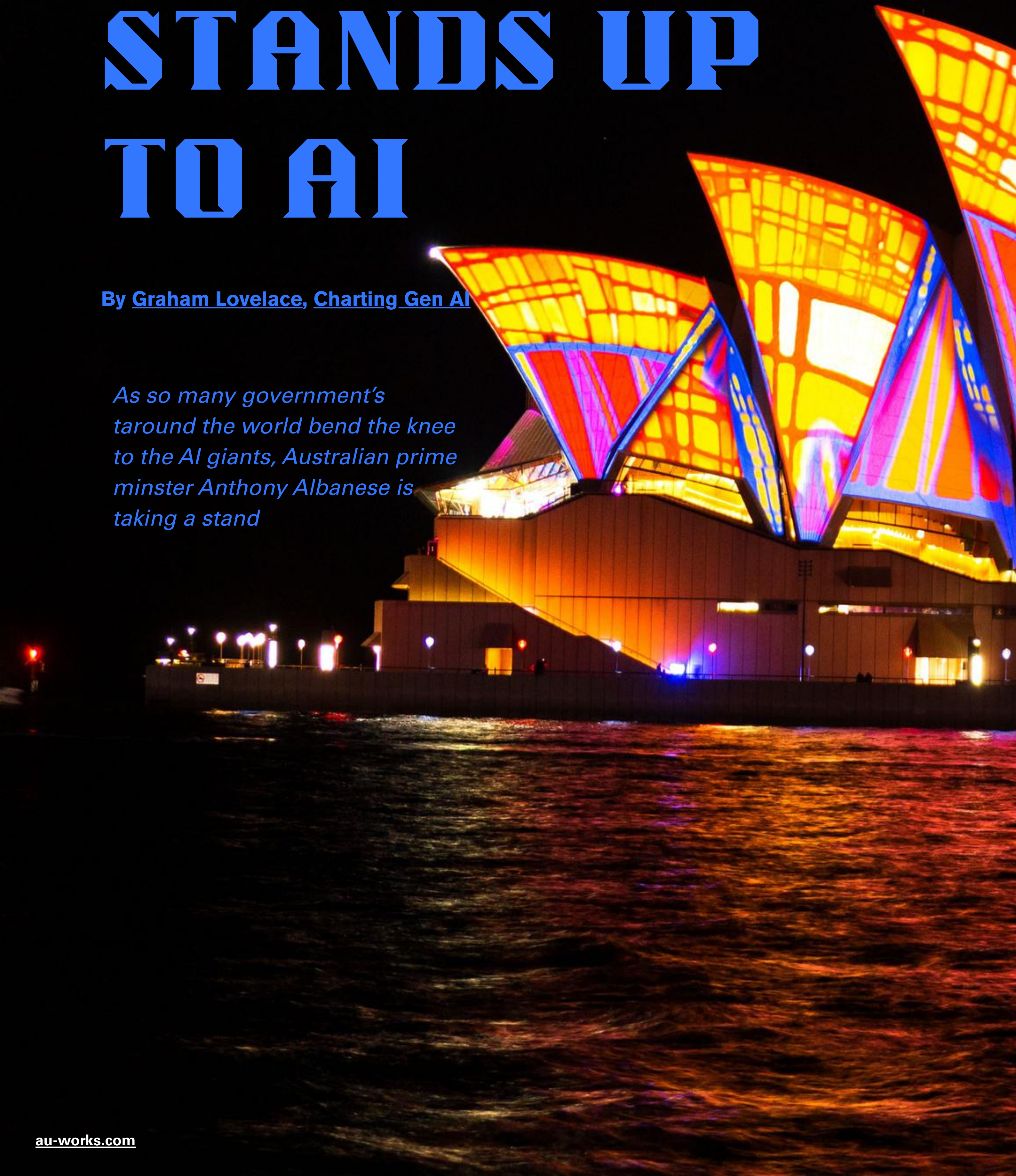
The puzzle pieces around provenance are therefore beginning to line up.

This article originally appeared in the August 13 issue of Faultline.

AUSTRALIA STANDS UP TO AI

By [Graham Lovelace](), [Charting Gen AI]()

As so many government's taround the world bend the knee to the AI giants, Australian prime minster Anthony Albanese is taking a stand



Creatives looking to their governments for stronger protections against unregulated jgenerative AI developers haven't had much to celebrate. Reticence on the part of political leaders to come to their aid has been explained by an unwillingness to antagonise Big Tech amid hints of deep investment in their countries. Alienating the broligarchy would also risk poking the bear in the White House, and the retaliatory threat of increased trade tariffs.

For understandable reasons then governments have either been mute on creator injustice, or have opted to kick the can down the road. But something changed this summer. Something big. Now creatives have a reason to cheer.

In the weeks before Australian prime minister Anthony Albanese gave his landmark speech on AI, copyright creatives sounded an alarm. They'd been triggered by the warning that a "dirty deal" was being worked on that would allow AI developers to train their models on copyrighted content in return for a data center investment deal. Independent senator David Pocock claimed AI firms had agreed to bankroll a creators' fund, leaving copyright laws weakened despite an earlier promise from the federal government that IP protections wouldn't be diluted.

The threat of a U-turn prompted creators and creative group leaders to converge on Parliament House in Canberra. Among them was the award-winning author Anna Funder.

"I'm a writer but I'm standing here before you today really as a victim of crime. My books have all been hoovered up in many editions in many countries, in many languages by Big Tech, broken down into parts and used for them to make money," said Funder, whose book *Stasiland* won the 2004 Samuel Johnson Prize for best non-fiction work published in the English language.

"We don't want patrons, we don't want a Big Tech fund, we want our rights."

Singer-songwriter Mahalia Barnes added: "This is not just data. This is truly art. This is our culture, it's the essence of our nation. Artists can never be replaced by technology and AI because art is essentially about humanity."

The air was thick with nervous anticipation as Albanese stood in front of a lectern in July and promised creatives "the strongest possible protection" against the exploitation of their copyrighted works by AI companies. In what amounted to the most creator-friendly policy statement yet made by a political leader on AI and copyright, Albanese said writers, musicians and artists needed to be able to control how their work was used.

"Anything less is theft," declared Albanese in a speech that finally put to bed speculation that his Labor administration might weaken the nation's copyright laws in favor of AI developers.

He went on: "Let me make this crystal clear: not everything produced in Australia is up for grabs. Not at all. Australian writers, musicians, artists and journalists must retain ownership and control of their work. Our laws will spell that out, plain as day. An artist's creative endeavour is their work and their property."

While no country had "got this right yet" Albanese said the "best way to secure the strongest copyright protections for Australian artists is for Australia to be active and involved". "To build the best possible solution for ourselves. And to preserve the creativity that is fundamental to who we are, to our national identity, and the journalism that is essential to our democratic society."

Creator groups were swift to praise Albanese's rejection of an intense lobbying effort on the part of Big Tech.

Lucy Hayward, CEO of the Australian Society of Authors, applauded the government "for demonstrating strong leadership and standing firm on its support for arts and culture in Australia". Music rights management organisation APRA AMCOS praised Albanese's "clear and unequivocal support for Australia's artists, creators and copyright holders".

Claire Pullen, CEO at the Australian Writers' Guild said: "Big Tech has invested heavily in trying to say our copyright laws are a problem to be solved, rather than what they are — an opportunity. They are an opportunity to create new markets, to add to the billions creative workers generate for our economy, and they are an important statement about our sovereignty and our values. Australian stories are a critical part of our shared future."

Later in a Guardian op-ed Pocock said Albanese's commitment "to introducing laws that ensure Australian creatives retain control over their work" were "very welcome" while warning "the devil is in the detail".

"Clearly the government heard creatives loud and clear. Their work and intellectual property must not be used as a bargaining chip. This is an encouraging sign that the government is staring down intense pressure from global AI giants to give them unfettered—unpaid-for—access to the works of Australian musicians, writers, journalists and artists."

Months later, I'm told that Big Tech's lobbying of Australian politicians continues unabated, but Albanese is standing firm.

This was a momentous moment for creative copyright in the era of generative AI, and on tech policy another example where Australia leads the world. Albanese picked a side, and did so in a way that left no doubts or caveats. The role played by Australia's creator groups deserves recognition. Albanese's full-throated support was a huge victory for all those organisations, and the individuals they represent.

Shortly after Albanese's speech I asked Nicholas Pickard, public affairs and global policy chief at APRA AMCOS, if he had any doubts or concerns.

"The lingering doubt remains the appalling reticence of platforms to engage with our sector to start negotiating licences," he said. "There's an understanding in government that the platforms have resisted deals so they don't prejudice litigation in courts, so ideally we will see some sort of instrument to force these companies to the table."

Licensing is now a pressing matter for Albanese's newly formed Office of AI to take up. His stance will hopefully embolden other countries to follow suit. Yes, we're looking at you, Andy Burnham.

Graham Lovelace is Editor & Publisher of Charting Gen AI, the global newsletter that documents the impacts of generative AI on creators and human-made media, and Convenor of the Creators Emergency Summit on October 13 in London.

IF YOU WANT TO SUPPORT YOUR INDUSTRY, SUPPORT MENTORSHIP

Peer to peer mentorship and collaboration may be the best way forward for women navigating a chaotic and sometimes hostile media sector

Next year Rise will celebrate its tenth birthday. The organization was launched as way to tackle the embarrassing lack of gender diversity in the media industry. At first rooted in the broadcast tech and engineering field, Rise now supports workers across the entertainment business and is expanding into adjacent sectors like audio-visual. With over 6000 members globally, Rise has reached beyond its UK home to now boast nine chapters around the world.

In addition to providing free personal and professional training programs, the group is aggressive in its networking and peer-support activity. It is perhaps best known for its mentoring program, currently helmed by Carla Maroussas.

"People come into the mentoring program because they are already part of the Rise community," says Maroussas, "and they stay as part of the community after the mentoring program."

But after nearly a decade, how much impact has Rise really had when we see employment statistics overwhelmingly favoring men. Data from the US Bureau of Labor Statistics showed in July of this year 165,000 women left work, while the number of US men in employment remained the same.

"The need hasn't gone away," says Maroussas, "It would be great to celebrate that our membership is growing, but it's growing because people need it. It's growing because women are saying 'I'm not being represented, I'm not being looked after.' The sad fact is that in every single mentoring program that I have been involved in, over the past three years, someone has reported past experiences of sexual harassment or sexual abuse."

Rise has had record numbers of women applying for the mentoring program. Maroussas notes that often participation is driven by sheer necessity.

"We see on those applications women saying 'I am the only woman on my team'. In AV and in broadcast, women are still in the minority. When we look at senior leadership or tech roles, the number of women is declining, and women are not staying in the industry. That's something Rise wants to be a solution for: rather than leave, how can we help you?

"I genuinely do think there is change and positivity," adds Deborah Cross, Rise

Click to watch: At ¡AU!'s Diversity & Excellence Summit, Rise discusses how central mentorship is to improving the workforce as a whole

operations director. "The beating heart of Rise includes some incredible men who support us and are mentors for us and champion us and the women they work with."

This year Rise ran a workshop in conjunction with Allyship Actually, an organization run by Lucy Grimwade and David Barrow whose eponymous book details their experience of finding better solutions to unfair work environments. Accessing a wide diversity of input and support has been essential to their success.

Despite its growing reach and longevity, Rise is still run by a very small team. Media companies that have benefited from the talent it has cultivated are often sluggish to return the favor in any kind of material support.

"We don't want to be part of a tickbox," says Maroussas. "We want to be part of actually growing something. We invite people to sponsor us, be an ally, offer something on the program, and actually be part of the solution."

While businesses leadership may pat themselves on the back for their of new and diverse talent, the measure of their real commitment is whether or not they have a line dedicated to it in their budget.

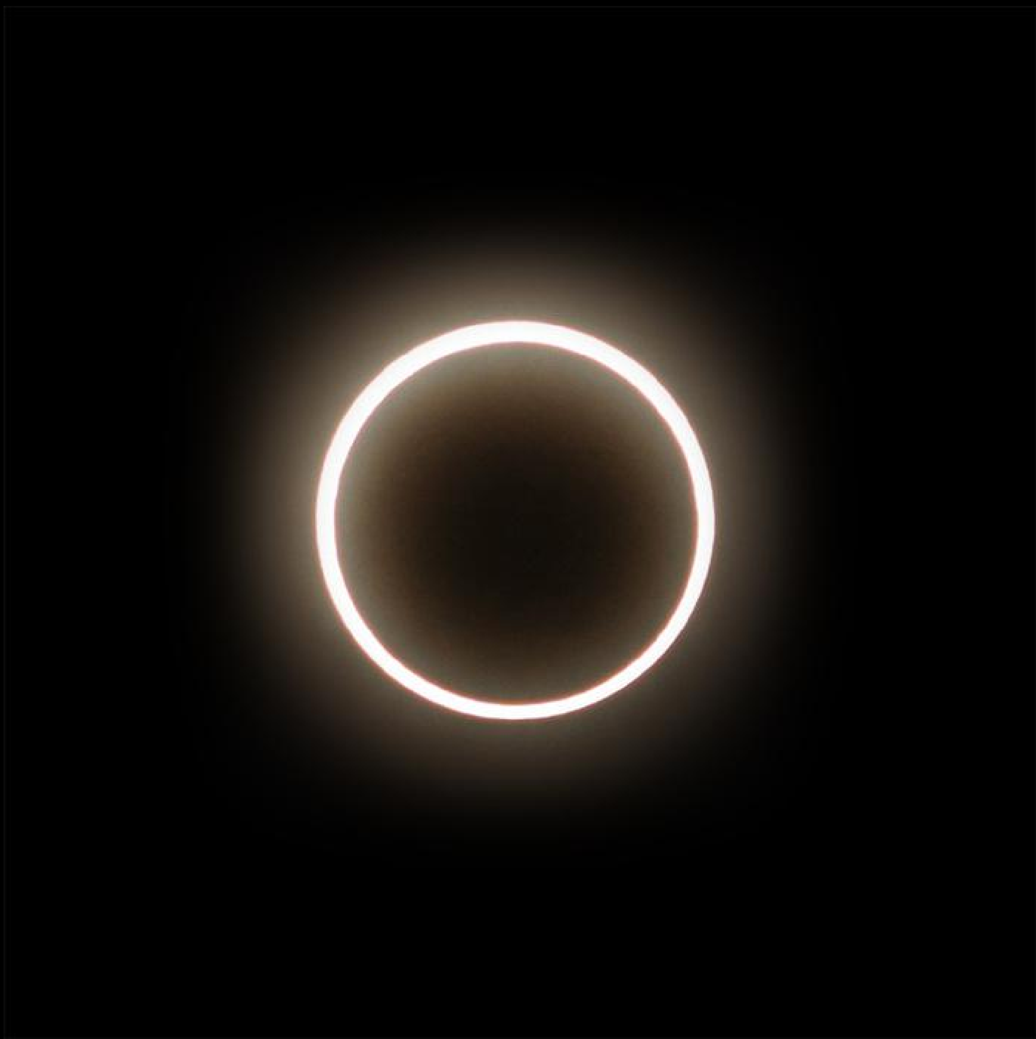
Rise offers sponsors multiple ways in. Its non-profit status provides donors with tax relief, of course, but its educational and mentorship programs help put partner companies in the midst of a growing, global network of talent.

"We understand in the current climate not everyone's got sponsorship money, but be an ally, call it out, don't step back and let it be be someone else's problem. There will be a shape for you to fit into Rise in a way that you can give back."

If companies can't find change in the couch cushions, they can offer time. Donating skills – from editing and publishing to PR and tech know-how -- is an easy way to get started. Rise has no dedicated venue of its own, so providing spaces for trainings, networking, or internal activities is a great way that businesses can provide support.

And then there's pushing your employees to become Rise mentors or mentees. Its a commitment that can help upgrade everyone's skill level and raise the profile of the business.

"Support your employees who are mentees." says Maroussas, "but then also get them to report back and say what's happening at Rise and what they're learning,"



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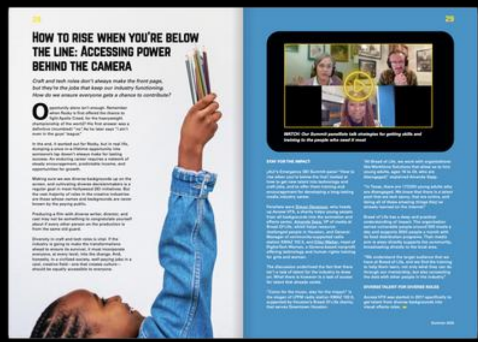

ISSUE 002


IP PREDATORS
THE TECH ARMS RACE AGAINST PACKS OF PIRATES


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