Grass Valley

ARTICLE

Why AI and Operational Intelligence Matter

Seven paradoxes shaping the next era of media production, Article 5

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In this series, we explore the technologies, architectures and operational realities shaping modern media operations. Along the way, we examine how these individual pieces contribute to a larger operational picture and ultimately help organizations build a unified media operation.

In our previous article, we explored why confidence matters as media operations become more dynamic. Resilience creates stability, but people gain confidence when they can understand how that resilience works.

But confidence introduces a new challenge. As operations produce more content, more data, more signals and more choices than people can reasonably process by themselves, how do organizations turn all that intelligence into meaningful action?

The fifth paradox: the more intelligence we add, the more human agency matters.

Every major technology goes through a phase where its value is demonstrated through exaggeration.

When stereo sound first became widely available, music could place the drummer on one side and the bass player on the other. When 3D television arrived, objects seemed designed to fly toward the viewer all the time. When higher dynamic range became available, images could become so bright they were uncomfortable to watch — just because the technology could.

The pattern is familiar: a new capability appears, the industry explores its extremes. For a while, it seems to answer everything. Then the real value begins to appear — usually less dramatic, often more practical, almost always more closely aligned with the work people were already trying to do.

Artificial intelligence is moving through that same phase. No media organization wants to appear inactive on AI. No executive wants to say they are ignoring it. No technology leader wants to miss an inflection point that may reshape workflows, economics and audience experiences.

At the same time, many organizations are still trying to separate enduring value from temporary excitement. Some discussions frame AI as the answer to everything. It will find the content, create the clip, run the operation, personalize the experience and solve the business problem.

That framing already misses the deeper shift. AI will change media production — in many areas, it already has. But its greatest value may not come from replacing the people who create, operate and protect the story. Its greatest value may come from increasing what those people are able to see, understand and accomplish.

The Real Challenge is not a Lack of Intelligence

Media organizations are not short of information. They have archives filled with valuable content, workflows that generate operational data and software-defined environments that produce signals from almost every layer of the production chain. They know more than ever about their content, systems, audiences and operations.

Yet knowing more does not automatically create understanding. That is the tension AI exposes.

A production team may have thousands of hours of archived material and still miss the one moment that would make the story stronger. An operations team may have dashboards, logs and telemetry but still struggle to identify which signal matters first. A business leader may see the opportunity to serve more audiences with more personalized experiences while still facing the practical limits of time, cost and operational complexity.

The problem is no longer access to intelligence. The problem is turning intelligence into action.

That requires context. In media production, content is never just content. It carries rights, timing, editorial meaning, audience relevance, compliance requirements and creative intent. Workflows are never just workflows. They carry responsibilities, permissions, dependencies and production judgment.

AI without that context can appear intelligent while creating new risk. It can find the wrong asset. It can miss the editorial meaning. It can suggest the wrong operational response. It can generate a representation that changes how the audience understands what happened. That is where the challenge becomes operational.

AI cannot remain a loosely connected tool outside the operation. If intelligence is going to become valuable in media production, it needs to live close to the media, metadata, rights, workflows, users and operational state that give information its meaning.

Enter Operational Intelligence

AI is often discussed as if it were a single capability. In a Dynamic Media Facility, its value is better understood as ***operational intelligence***.

Operational intelligence is the ability to turn content, metadata, system signals and workflow context into guidance people can act upon. It can support archive discovery, workflow preparation, metadata validation, operational monitoring, anomaly detection, resource awareness and audience-specific storytelling. These are not separate AI stories. They are expressions of the same shift.

AI is moving from the edge of the operation toward the center of it. This is where agentic AI becomes relevant.

Agentic AI simply means that AI not only answers a question, but can work through a sequence of defined steps across connected systems within the boundaries the organization sets.

In a media operation, that could mean checking resource availability, validating metadata, preparing a workflow or guiding an operator toward the next useful action based on what is happening inside the system.

The point is not that AI runs the production. The point is that AI helps people operate with greater clarity when the operation becomes too dynamic, too data-rich and too interconnected to manage through manual interpretation alone.

That changes the question from no longer only: what can AI do? The question becomes:

? Where does AI need to live in order to do it responsibly?

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The Industry Perspective

The industry's AI conversation reflects both excitement and uncertainty.

Through the GVx Council, we asked media leaders to share their perspectives on the operational realities shaping this transition. The responses revealed a clear pattern. AI is no longer treated as a distant experiment, but organizations are still working through how to apply it responsibly, affordably and meaningfully.

Geir Børdalen, Head of Technology Portfolio at NRK, captured that reality clearly: "Practicality in AI is already going through the roof. So is cost."

Scott Rothenberg, SVP, Technology & Capital Planning at NEP Group, put it just as plainly: "Costs of AI need to be made more clear. Tokens aren't free."

In the hype phase, capability gets the attention. In daily operation, cost determines what remains. That may become one of the defining AI challenges for media organizations. Once AI becomes part of everyday workflows, inference, tokens, GPU capacity, storage, metadata enrichment, model tuning and always-on agents are no longer experimental costs. They become part of the operating model.

Ralph Atlan, Content and Production Services CTO at CANAL+, pointed toward practical production domains where AI could create meaningful impact: "Shading, framing, intuitive interfaces, graphics on demand and sound processing are domains where AI could significantly improve live production."

Those examples are important because they are not abstract. They describe places where AI can reduce friction, support operators and make production capabilities more accessible without removing the human judgment that gives a production its character.

The Shift Is Already Underway

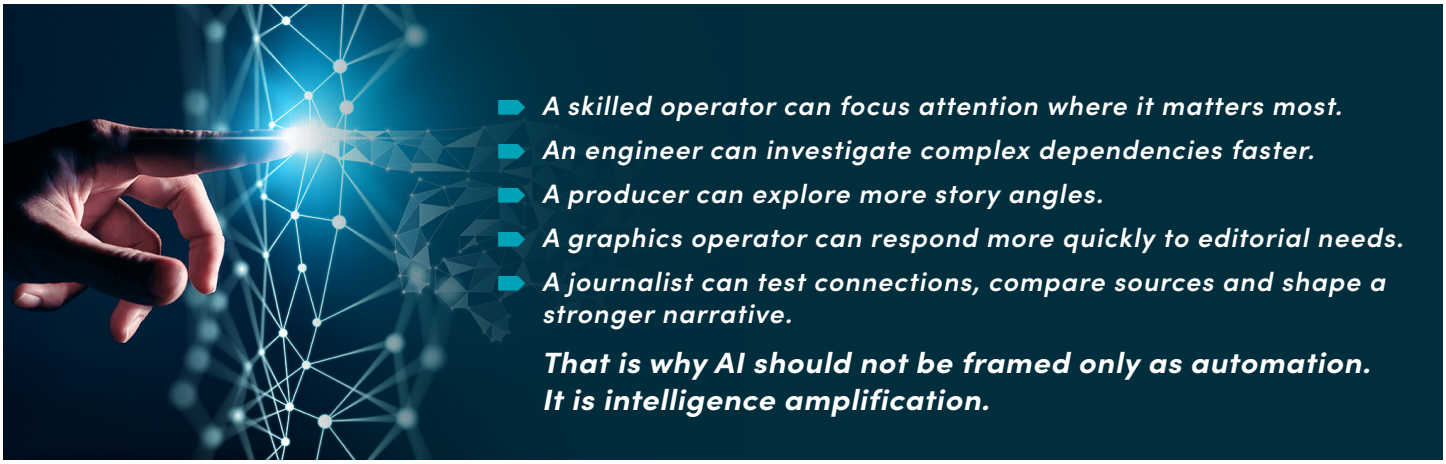
The shift is not simply that media organizations are using more AI. The shift is that AI is becoming a participant inside the operational and creative chain.

That is why AI fits naturally within the principles of a Dynamic Media Facility. A DMF is not built around isolated tools, it is built around software-defined workflows, shared resources and interoperable services. That creates an environment where intelligence can be introduced, connected and evolved without rebuilding the operation every time a new capability appears.

Within Grass Valley's software-defined strategy, AMPP OS is designed around that same operational reality. It brings production capabilities, media, metadata, orchestration and control into a connected operating environment. That matters because AI needs context. It needs to understand not only what content exists, but what that content means, who can use it, where it belongs in the workflow and what actions are allowed.

This is where the relationship between external AI services and embedded AI becomes important.

Both approaches have value. Some AI capabilities may run through external services, especially when organizations want access to specialized models, rapid innovation or capabilities that are best delivered from outside the production environment. Other workflows may require AI to run locally or within a controlled private environment, particularly when rights, security, latency, cost or compliance requirements demand tighter control.



- *A skilled operator can focus attention where it matters most.*
- *An engineer can investigate complex dependencies faster.*
- *A producer can explore more story angles.*
- *A graphics operator can respond more quickly to editorial needs.*
- *A journalist can test connections, compare sources and shape a stronger narrative.*

That is why AI should not be framed only as automation. It is intelligence amplification.

The point is not to choose one model over the other. The point is to ensure that AI can participate in the operation without losing the context that makes its output useful. Whether intelligence runs externally, locally or across a hybrid model, it needs access to the media, metadata, rights, workflows and control signals that define what the organization is actually trying to achieve.

This is not only a technical choice, it is an operational and business choice.

As AI moves deeper into the operation, organizations need to manage what it costs, what data it accesses, what it is allowed to do and how its output is represented. Cost control becomes part of AI maturity.So does provenance. That is especially true when the conversation shifts from operational intelligence to generative AI and synthetic media.

For decades, captured video was often treated as evidence. Not perfect evidence, but evidence nonetheless. Generative AI changes that assumption because it can create images that are visually convincing without being captured from the event itself.

That distinction matters. A replay that uses AI to transition smoothly between real camera angles may help tell the story more clearly. An AI-generated view showing what a moment might have looked like from a player's perspective is different. It may be useful, compelling and editorially valuable. But it is no longer the same kind of truth — it is a representation of what happened.

As AI-assisted and synthetic media become harder to distinguish from captured media, the audience cannot be expected to inspect technical provenance during a live experience. The responsibility sits with the media organization.

Standards such as C2PA matter, not because every viewer will study a manifest, but because media organizations need reliable ways to preserve origin, edits and content history throughout the production chain.

The viewer ultimately trusts the media organization. That trust must be earned through how AI-assisted content is created, labeled, represented and governed. That is why the operating environment matters.

AI creates the most value when intelligence remains connected to media, metadata, rights, orchestration, users, workflows and operational control. Within Grass Valley's software-defined strategy, AMPP OS provides a practical foundation for applying AI where it can support people without separating intelligence from the context and responsibility that make it trustworthy.

Used well, AI becomes a kind of professional superpower. Not because it replaces the person, but because it allows the person to bring more of their expertise into the moment.

In The End, It Is About The People

The most important misconception about AI is that it makes expertise less valuable. In many cases, the opposite is true.

The internet made information abundant. It did not turn everyone into an expert on every subject. In many ways, it made expertise more important because people needed judgment to separate useful knowledge from noise.

AI follows a similar pattern. It can give everyone more capability. But it does not make every question equally good, every answer equally useful or every decision equally responsible. The people who understand the craft, the audience, the operation and the editorial context will often gain the most.

AI does not eliminate the value of expertise. It increases the value of expertise.

A person with limited archive knowledge may use AI to become more capable. That matters. It makes knowledge more accessible and lowers barriers for people who need to work quickly. But an experienced archivist using AI becomes far more than a better search user. They know which questions to ask. They know when a result is incomplete. They recognize missing context, questionable metadata and editorial nuance. AI gives them speed, but expertise gives the result meaning.

The same is true across production. A skilled operator using AI can focus attention where it matters most. An engineer using AI can investigate complex dependencies faster. A producer using AI can explore more story angles. A graphics operator can respond more quickly to editorial needs. A journalist can test connections, compare sources and shape a stronger narrative. A creative leader can imagine more versions of the same story without losing sight of the audience experience.

That is why AI should not be framed only as automation. It is ***intelligence amplification***.

Used well, AI becomes a kind of professional superpower. Not because it replaces the person, but because it allows the person to bring more of their expertise into the moment.

What AI Really Enables

So, what does AI really enable? The simple answer would be intelligence. But intelligence alone is not enough.

An AI system can be fast and still be wrong. It can be confident and still be uncertain. It can generate convincing content without understanding the editorial responsibility attached to it. It can optimize a process while missing the human reason that process exists.

This is where the real value of AI becomes clearer. AI does not become valuable because it is intelligent. It becomes valuable when intelligence becomes trustworthy enough to strengthen human agency.

Agency is the ability to act with purpose, confidence and responsibility. For a media organization, agency means that people are not overwhelmed by the complexity around them. They can understand what is happening, decide what matters and act in ways that serve the story, the audience and the business.

AI can strengthen that agency when it is grounded in context, provenance and responsibility. It can help people find meaning in archives that are too large to navigate manually. It can help teams understand systems that generate more signals than people can reasonably interpret alone. It can help producers create more relevant versions of a story for different audiences. It can help organizations use the same content more effectively across more platforms, formats and moments.

But agency also depends on control. Media organizations need to know what AI is using, what it is allowed to do, what it costs, how its output is represented and where responsibility remains. They need AI that respects rights, preserves context and operates within the workflows and governance of the organization.

That is why deep integration matters. If AI sits outside the operation, every handover risks losing context. Every disconnected tool risks creating another island. Every vague integration risks weakening the relationship between intelligence and responsibility.

The strongest AI strategies will not simply add intelligence. They will strengthen human agency. They will help people see more clearly, act more confidently and create more value from the content, systems and expertise they already have.

Closing Thought

As we have seen, AI is not simply another tool entering the media operation. It is becoming a new participant in how content is found, created, prepared, personalized and understood.

That makes the opportunity significant. AI can reduce noise, surface meaning, support operational decisions, expand creative possibilities and give people new ways to apply their expertise. But the deeper AI becomes embedded in media workflows, the more important context, provenance, rights, cost control and responsibility become.

The organizations that benefit most will not be those that automate the most. They will be those that make intelligence trustworthy enough to strengthen human agency while preserving the trust audiences place in them.

And that naturally raises the next question:

? *If Dynamic Media Facilities provide adaptability, MXL preserves freedom, trust enables participation, confidence creates readiness and AI strengthens agency, how do all these capabilities come together as one coherent operation?*

That is the challenge we will explore in the next article.

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