



The IP Decision-Making Playbook

How to Plan, Prioritize and
Deploy IP-based broadcast
infrastructure



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The IP Decision-Making Playbook

The move to IP has become a question of how, where, and when, not if. This playbook outlines the operational and organizational realities of migrating to IP broadcast infrastructure, grounded in SMPTE ST 2110 and real-world deployment experience.



Whether you are evaluating first steps or managing a phased migration across a live facility, this guide offers a practical framework for making sound decisions that align with your goals, your infrastructure, and where the industry is going.

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IP is the Infrastructure of Choice

The broadcast industry’s transition to IP has passed a turning point. SMPTE ST 2110 has moved from an emerging standard to the operational backbone of modern media infrastructure, underpinning new facilities, large-scale live productions, and hybrid environments around the world.

Most new projects, whether greenfield builds or significant facility refreshes, now begin with IP. SDI remains a valid and necessary part of many environments today, though the momentum, in both economics and innovation, is increasingly shifting toward IP.

The evidence is in the deployments themselves. The leading wave of ST 2110 installations came in 2020 and 2021. Those facilities are making television every day, and those systems are so stable the industry has largely stopped talking about them.

Competitive pressure has accelerated the shift. For instance, streaming services now competing for sports rights distribute natively in 1080p, HDR, and UHD. As major networks adopt these advanced technologies, the pressure on regional broadcasters and local stations to match or pass through those formats grows. IP infrastructure makes that possible.

IP Deployment Status by Organization Type

% of respondents

	Global (N=1013)	Broadcaster / Cable / OTT	Gov / Edu / Corp	Production / Post
★ Already deployed	42%	45%	18%	27%
✓ Will deploy in next 18 months	10%	9%	8%	20%
🧪 Under evaluation	25%	23%	35%	35%
✗ No plans to deploy	11%	10%	26%	11%
🚫 Not aware	12%	12%	14%	7%

Source: Devoncroft Big Broadcast Survey 2025

The Devoncroft Big Broadcast Survey 2025 shows continued momentum in IP infrastructure adoption, with over half of respondents in the broadcast/cable/OTT sector reporting the IP Networking & Content Delivery leads every other technology trend by a significant margin at they are already deploying ST 2110 or are planning deployment within the next 18 months.

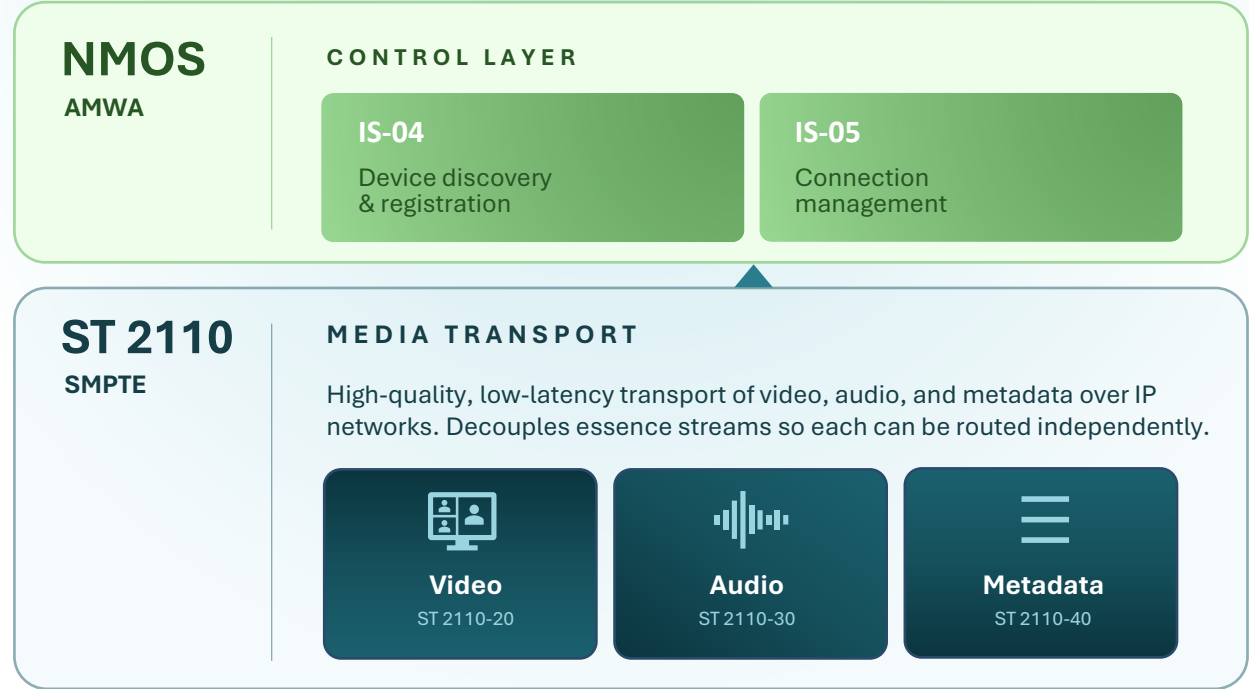
The Foundation is in Place

The SMPTE ST 2110 suite of standards, which governs transport of professional media over IP networks, is well-established and widely deployed in modern broadcast production environments.

Supporting high-quality, low-latency transport of video, audio, and metadata, ST 2110 introduces operational advantages such as faster deployment timelines, improved system flexibility, and long-term investment confidence. AMWA NMOS specifications (IS-04, IS-05) provide the vendor-agnostic control layer that makes multi-vendor deployments operable at scale.

IP infrastructure based on ST 2110 also serves as an on-ramp for moving broadcast workflows into cloud environments.

The Dynamic Media Facility (DMF) is an emerging reference architecture defined by the EBU that describes a layered model for modern, software-defined production infrastructures, in which broadcast functions run as containerized microservices that can be provisioned, scaled, and deployed on-premises, at a remote location, or in the cloud. The model allows independent technology choices for each layer of the infrastructure. ST 2110 is a natural and excellent starting point for a dynamic facility.



Defining how media moves and how devices connect, ST 2110 standards and NMOS specifications work at different layers — one governs transport, one governs control — to make multi-vendor ST 2110 deployments work at scale.

Establish Your Goals

Before evaluating how to introduce IP, be clear about what you're trying to achieve and why now. The driver may be technical: readiness for HDR production, 1080p or UHD delivery, higher channel density, or the ability to grow in ways current infrastructure cannot support. Or non-technical: a building move, a facility consolidation, or a lease timing that forces a refresh decision regardless.

Organizations that begin with a clear goal tend to move quickly and decisively. And their readiness to succeed — having a team that is engaged, enabled, and has the bandwidth to do something consequential — is as important as any technical consideration.

Beyond those drivers is the larger objective of creating a more dynamic facility in which infrastructure is shared across productions. Where a studio going offline for maintenance doesn't disrupt another production. Where channel density can grow without a new hardware project. Enabling this model, the shift to ST 2110 inherently makes a facility more dynamic and adaptable.



WHAT'S DRIVING YOUR DECISION?

New Technical Capabilities for the Future

- HDR and UHD production and delivery
- Higher channel density and routing capacity
- Future-proofing for 4K and beyond

Competitive Pressure

- Matching OTT and streaming production standards
- Passing through 1080p, HDR, and UHD feeds
- Meeting network and affiliate format requirements

Operational Drivers

- Building move or facility consolidation
- Infrastructure refresh aligned to lease cycle
- Desire for a more dynamic, shared facility

The most frequent drivers behind IP infrastructure investment include:

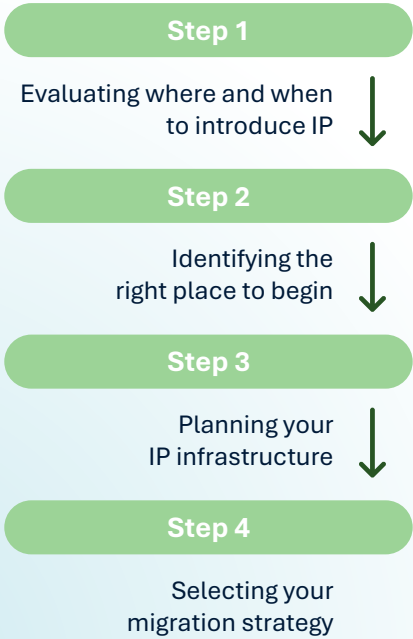
- Overcoming the physical limitations of SDI
- Decoupling studios from control rooms for dynamic resource sharing
- Enabling remote and distributed production
- Supporting HDR, 1080p, and UHD at scale
- Facility moves and equipment end-of-life
- Building toward a software-defined, platform-centric architecture

Source: Caretta Research, June 2026

Better Infrastructure Decisions, Step by Step

Few media organizations question whether IP works. But, given the potential enormity of an IP migration, they often question where and when to introduce it — and what it will take to get there. Sound infrastructure planning helps in making that determination.

Following a preliminary goals phase in which the project’s purpose is identified, broadcasters can use the practical framework below to chart their infrastructure modernization.



Phase / Step	Focus	Key Question
Goals	Establish the purpose of the project	What are we trying to achieve, and are we ready to execute?
Step 1 Evaluate	Assess content, engineering, and operational factors	Where are we today, and what do we need to plan for?
Step 2 Prioritize	Identify workflows where IP delivers immediate benefit	Where should IP go first?
Step 3 Plan	Plan for capability and scale	What capabilities do we need to build, and what will it take to sustain them?
Step 4 Migrate	Adopt incremental strategies aligned with refresh cycles	How do we move without disrupting operations?

Assess Your **Content Requirements, Engineering, and Operations**

Effective evaluation spans three domains: **content, engineering, and operations**. Working through each before committing to a migration path leads to better decisions, smoother implementations, and infrastructure that performs as expected across the full lifecycle of the facility.

CONTENT PIPELINE <i>How you define your goals.</i> What are you producing, and for whom?	ENGINEERING <i>How you implement goals.</i> What does your team need to know and support?	OPERATIONS <i>How you deliver goals.</i> How will you deliver content goals 24/7?
Format requirements: HDR, UHD, and 1080p	IP networking and software skills on the team	24/7 continuity requirements during migration
Live vs. file-based workflow balance	IT and broadcast engineering integration	Operational support for software-defined systems
Viewer engagement goals and audience expectations	In-house expertise vs. external partnerships	Governance between IT and engineering teams
Content dependencies and distribution handoffs	Orchestration and software-defined systems	Involving operations teams from day one

IN PRACTICE

Broadcasters emphasize that it is generally easier to reskill existing broadcast engineers into IT roles than to teach IT professionals the complexities of broadcasting. Some have created "fusion teams" that combine broadcast engineers, network architects, and DevOps personnel under a single product owner.

Source: Caretta Research, June 2026

Begin Where IP Delivers Clear Advantage

IP adoption typically begins with workflows for which network-based infrastructure delivers clear, immediate operational benefits. These early deployments deliver value quickly and help teams build IP networking, monitoring, and orchestration experience that will inform later projects and more complex or mission-critical workflows.

In choosing where to start with IP, consider the migration strategy, particularly in facilities that operate 24x7. Plan to minimize operational risk. Let teams learn and build confidence through the migration process, without putting core operations on the line.

Depending on the migration strategy, early deployments often function as operational pilots, with opportunities to develop skills and validate performance early in the project.

Specific facility circumstances, budget, and operational priorities are the primary planning considerations. Keeping these in sight will drive the entire project success plan.



Workflow	System Transition Strategies	Managing Risk & Benefits
Live switching / on-air production	Build IP one studio at a time, or one OB van at a time	Testing new technology in parallel reduces risk and helps teams to develop HDR skills
24/7 payout	Design payout as A/B dual-redundant systems, enabling separate transition of A and B	Control system integration supports incorporation of SDI matrices and smooths the migration path
News production	Move piece by piece in a gradual cutover	Control system integration across the SDI and IP plants, enabling unified management with transparent signal paths during transition
Contribution / remote production	Move piece by piece, maintaining adequate capacity until fully confident	A gradual cutover helps to ensure continued availability
Monitoring / multiviewers	Undertake a screen-by-screen or room-by-room cutover, running new in parallel to existing until ready for full transition	Running new systems and old in parallel enables a gradual sunset — an ideal first deployment

Build for Capability

IP migration is fundamentally about extending broadcasters' capabilities and positioning their facilities for what comes next. IP infrastructure enables this readiness, introducing capabilities such as:

- HDR, 1080p, and UHD production and delivery — and the capacity to handle these formats at scale
- Routing capacity that grows with your operation, without the matrix size limits that constrain SDI infrastructure
- A path to cloud and hybrid workflows — for overflow capacity, disaster recovery, and remote production
- The flexibility to share infrastructure across productions, moving toward a facility where resources are allocated dynamically rather than dedicated permanently
- Future readiness for whatever the industry requires next, without another rip-and-replace project

And Plan for Operational & Maintenance Realities

- Network engineering expertise is required not just for design and build, but also for ongoing maintenance and support.
- Software-defined systems require fundamentally different operational support than traditional hardware.
- IT and network hardware turns over on shorter cycles than traditional broadcast gear, changing how teams plan, train, and sustain infrastructure.
- Test and staging infrastructure is mandatory — separate from the production network — and must be maintained in parallel with the operational environment. The test environment is also important for training and experimentation.
- Hybrid SDI/IP environments require deliberate planning. Teams need to build the capability to support both worlds simultaneously.

IN PRACTICE

Most broadcasters agree that for mid- to large-scale facilities, IP infrastructure is now a similar cost to SDI. However, comparing the CapEx cost of IT switches vs. SDI routers misses the real economic impact of IP, which fundamentally alters the cost model to unlock massive long-term financial and operational value.

Source: Caretta Research, June 2026

Move With Your Refresh Cycles

Broadcasters typically introduce IP infrastructure incrementally, especially when retrofitting an existing on-air operation. To date this phased approach has been key to the industry's adoption of ST 2110. Practical, use-case-driven deployments that preserve operational continuity are the norm.

The guiding principle behind this migration pattern? Move with infrastructure refresh cycles, not against them. High-density gateways allow legacy SDI workflows to coexist within an IP core, in turn enabling incremental modernization without a full rip-and-replace. Hybrid SDI/IP environments are common, expected, and manageable. They should be planned for deliberately, not discovered mid-project.

Many of the high-density gateway products in the marketplace can act as gateways in early phases of a project, then be redeployed for other processing functionality in later phases as the migration to IP progresses.

The four migration strategies on the following page describe common pathways for broadcasters progressing from initial IP deployment to full IP infrastructure. Most facilities will bring elements of more than one strategy into their own migration plan.

IN PRACTICE

IP infrastructure avoids the steep “cost cliffs” inherent in SDI, where a modest expansion in operations may require an entire new router. In making their IP transition, many broadcasters have deployed cost-effective IP-SDI gateways to enable them to retain and reuse legacy SDI-only equipment such as cameras and switchers.

Source: Caretta Research, June 2026



Four strategies, Proven in Practice



Edge-first deployments

Multiviewers, monitoring systems, contribution ingest, and cloud connectivity are natural entry points. They sit at the edge of the production chain and can be introduced without touching core routing or switching. For many facilities, these deployments deliver immediate operational benefits, including better visibility, more flexible monitoring, and the ability to leverage the IP network internally as well as externally — connecting to remote locations via IP.



Island deployments

A common and practical starting point: building a small studio or a single new truck as a self-contained ST 2110 IP island. These bare-minimum projects serve primarily as learning efforts, giving teams the hands-on experience they need to understand how to plan and execute larger projects before committing to a full facility transformation — and when successful, they also produce useful work. The skills, experience, and vendor relationships built in these small projects pay dividends later.



Contribution modernization

SRT and RIST contribution networks, remote production connectivity, and WAN optimization are areas where IP's flexibility delivers clear advantages. Contribution workflows often span multiple locations and involve handoffs between organizations, exactly the conditions in which open-standard IP transport excels. While ST 2110 rules the road inside facilities, transport over long-haul networks can leverage compressed IP transports to optimize cost.



Architectural evolution, from the inside out

Core routing refresh, using high-density gateways to emulate an SDI router, puts facilities squarely on the path to full migration. Typically aligned with a significant facility refresh, this positions a facility for 1080p, UHD/4K, HDR, and scalability to tie together formerly isolated production suites and studios — enabling dynamic facility use and improving utilization.

ST 2110 is the Foundation and the Future

Infrastructure decisions made now determine what becomes possible next. Providing a flexible fabric where anything can reach anything, ST 2110 infrastructure today serves as an on-ramp to cloud workflows, virtualized production, and dynamic facility design.

Going forward, and building on the foundation of ST 2110, emerging standards such as MXL and the EBU's DMF reference architecture extend this capability. With software-defined, containerized media functions, MXL enables workflows to be dynamically provisioned across on-premises and cloud infrastructure.

Broadcasters start their journey toward more dynamic facilities first by establishing their goals and then by using structured assessment — the framework in this IP decision-making playbook — to determine how, where, and when IP can best deliver operational flexibility, scalability, and economic advantage in service of those goals.

The journey to dynamic media facilities is a steady evolution built atop the ST 2110 infrastructures that we deliver every day.



6 Keys to a Successful IP Migration

1 Start with your goals.

Projects succeed when they begin with a clear answer to two simple questions: **what are you trying to achieve, and why?** HDR and UHD readiness, expanded channel density, or facility consolidation — the goals shape every decision that follows.

2 Commit to the standard.

ST 2110 is the established foundation for modern broadcast infrastructure. The industry has made its choice, and broadcasters increasingly benefit by building on open standards. They reduce risk, protect long-term investment, realize multi-vendor interoperability, and keep future options open.

3 Evaluate across content requirements, engineering, and operations.

Structured assessment across all three leads to better decisions and smoother migrations. As part of this process, involve operational teams early. Successful projects include operations from the start.

4 Begin where IP delivers a clear advantage.

Early deployments for lower-risk workflows can serve as pilot projects, demonstrating value while allowing teams to build experience before IP moves into mission-critical areas of broadcast operations.

5 Plan for what ST 2110 IP makes possible.

IP migration is about acquiring new capability: HDR and UHD delivery, scalable routing, a path to cloud, and infrastructure that can be shared dynamically across productions. Plan equally for new operational realities.

6 Migrate with your refresh cycles.

Hybrid SDI/IP environments are common, expected, and manageable. Gateway technologies enable modernization without disruption to on-air operations. Plan for the transition period. Remember that the speed of migration depends less on the technology than on your readiness to execute.



For practical guidance on
planning and deploying IP-based
broadcast infrastructure

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