



Hewlett Packard
Enterprise

Business white paper

Digital supply chain

Accelerate, automate, and orchestrate media production





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Evolve to IP-based production

It's imperative to move current production activities into a fully IP-based production model, enabling interoperability and scalability. Introducing IP production islands into existing SDI-based infrastructures enables smooth transformation—progressively, with minimal disruption. A hybrid introduces flexible operational models that enhance video monetization. And a common digital library gives a commercial offering, while leveraging assets on new business models.

The digital TV revolution needs new native digital products created, existing business models reshaped, new operating models formed, and new technologies enabled.

Gain digital production workflows

The digital TV industry is undergoing a major transformation—moving to an IT-based operation and Internet-based business, and adopting cloud services functionalities supported by a full Internet protocol (IP)-based infrastructure. This revolution is the answer to challenges broadcasters and emerging over-the-top (OTT) players are facing today, such as:

- Technology complexity
- Faster deployment than in-house development
- Comprehensive and secure storage of media assets and subscriber information
- Easy discovery of relevant content
- Operating expenses instead of a capital expenditure business model

This new paradigm—strongly supported by evolving IT enablers—affects how products are created, distributed, and consumed. By adopting a digital media content production platform, broadcasters and service providers have the unique opportunity to create a single, scalable, product-agnostic infrastructure. This transformation can be extended from content ingest to every aspect of editing and production—and across video contribution and distribution networks, to provide a wide offering on customers' screens.

To reap cost-cutting benefits and increase efficiency, media companies must evolve to digital production workflows. At the same time, gaining greater control of the media content production value chain by:

- Building a file-based process framework
- Establishing a common digital content library
- Transforming architecture to an IP-based infrastructure

According to EBU research, the live production environment still relies mainly on specialty hardware and dedicated serial digital interfaces (SDI)—making it the most critical application for broadcasters.¹ It requires the lowest latencies and highest throughput and reliability, which explains why those proven technologies still dominate. Efficient compression technologies, combined with packet-based networks evolution and supported by SDN functionalities, will progressively migrate to IP-based live production.

¹Fully IT Based Production, EBU, September 2014, https://tech.ebu.ch/docs/factsheets/ebu_tech_fs_fully-it-production.pdf

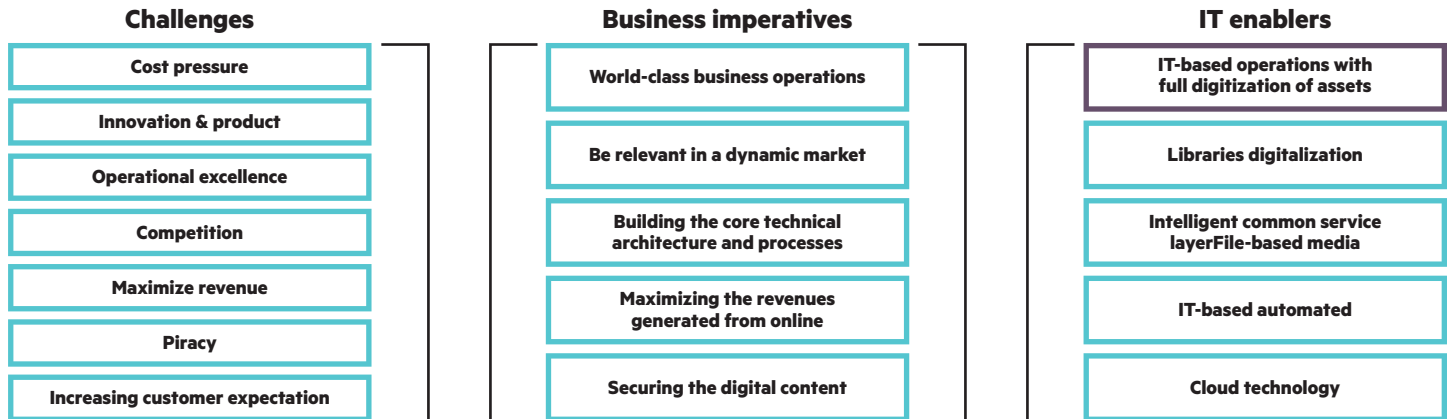


Figure 1: Content management is a highly dynamic and demanding market

This transformation is turning a content-centric industry over to a new paradigm that is a mix of technology and customer centricities. Today's challenges become new opportunities as you leverage these agile enterprise approaches.

In this evolutionary scenario, journalists and operators can create media assets directly in digital—anywhere, anytime—and classify and store them in a digital library. Cloud computing creates interoperability and scalability of corporate architecture from different platforms, which enables post-production routines and asset management for final distribution.

These capabilities enable content to be produced for more formats—from mobile to ultra-high definition. And for more platforms—from mobile to big screens, second screens, hybrid, and others, with the same or even fewer resources. To achieve this requires more workflow automation and flexibility.

On the storage side, more media data must be preserved longer while being easily accessible, findable, retrievable, and quickly available for repurpose. High performance and availability are necessary for live and real-time processes, along with many decades of reliability for archived content. And, because demands change quickly, you need on-demand resource scalability with guaranteed and predictable performance.

Interoperability between all systems is a must. So, you'll also need to extend these systems with commercial off-the-shelf (COTS) equipment, so the required service quality and control does not get compromised.

And by incorporating cloud computing, you can integrate interoperability and scalability of corporate architecture from different platforms. This enables agile post-production routines and, ultimately, manages assets for final distribution.

Shift to digital native

The shift from a centralized production supply chain to a media corporate concept—whose products are becoming native digital—means functions must be distributed. This virtualization of content production enables interoperability of tasks and provides governance and collaboration for geographically distributed teams.

Table 1: Improved network capabilities can support live production evolution

	BEFORE DCM	AFTER DCM	SAVINGS
Number of employees in direct contact with brand-related media assets	45	45	—
Average time an employee spends managing media assets	20 hrs per week	4.3 hrs per week	15.7 hrs per week
Average cost of employee	\$150 per week	\$150 per week	—
Total annual cost for this company in man hours spent managing media assets	\$7,020,000	\$1,509,300	\$5,510,700

From Frost & Sullivan

Establish a cloud media platform

The digital TV industry must leverage a cloud media platform paradigm to manage the solution’s evolution and address future needs. It accommodates all technology parameters and offers the flexibility necessary to address geographic and service expansion such as TV Everywhere.

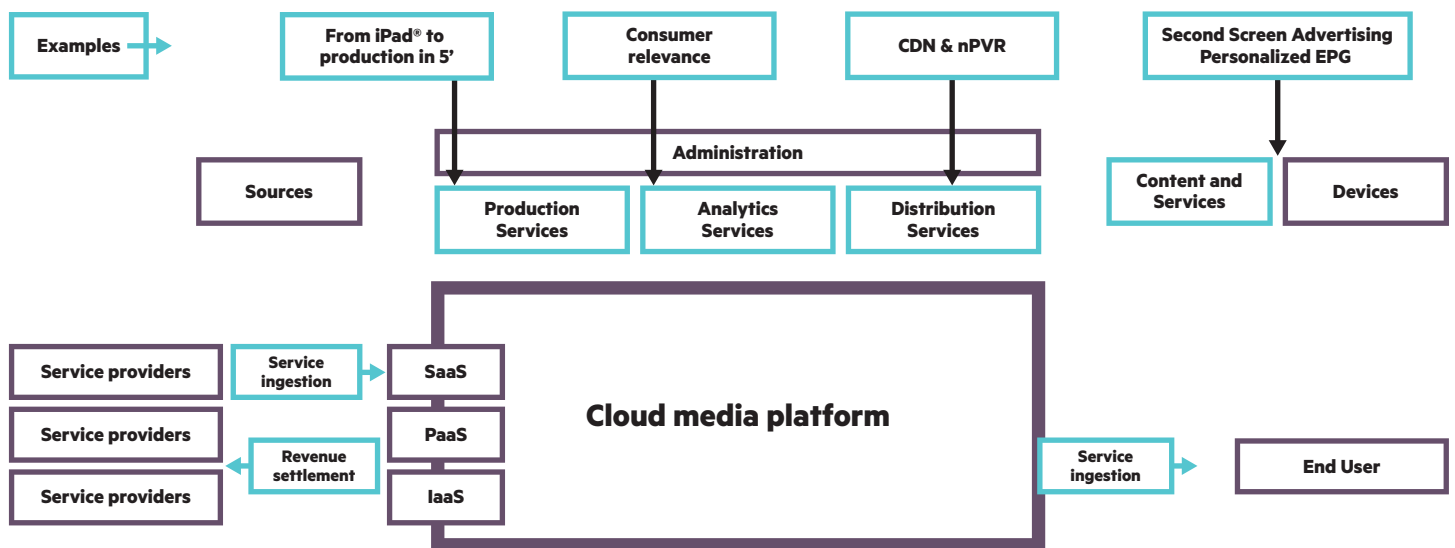


Figure 2: Cloud media platform paradigm

A cloud media platform integrates different cloud services to scale deployment of a standard set of IT services off of a service catalog. This approach enables providers to share the fixed costs of equipment and development across large customer bases and drive down prices.

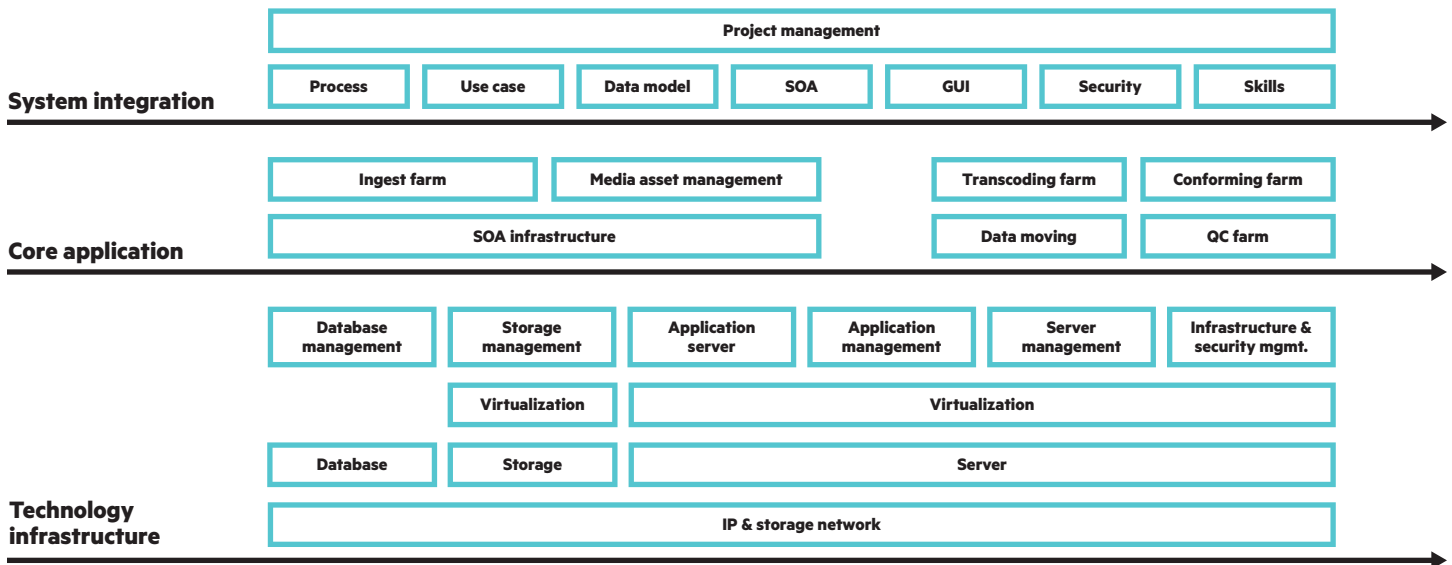


Figure 3: Modular IT services

A cloud media platform provides an on-demand capability—from content creation and management to distribution and monitoring—enabling:

- **Less complexity**—Cloud-based services are leveraged
- **Fast deployment**—Development is much faster than in-house
- **Comprehensive and secure storage**—Media assets and subscriber information
- **Quick and easy discovery**—Content relevant for operators and consumers
- **A better business model**—Operating expenses instead of capital expenditures

This provides an end-to-end digital workflow that can break down the barriers between production teams and other business units. Adopting a server optimization approach and cloud technologies decouples production processes from dedicated applications and infrastructures. This enables content to be easily shared across the company and ecosystem of partners.

Further, integrated business intelligence and analytics tools can measure content performance, track user activity, and help ensure an optimized consumer experience.

See the revolution in action

A large European public service broadcaster—whose services include 15 TV and 7 radio channels, analog and digital terrestrial broadcasting, satellite and new media offerings, plus cinema production—wanted to evolve its legacy TV production environment to a modern technology infrastructure. It was looking to:

- Improve production processes
- Enable integrated management of content, metadata, and processes
- Drastically reduce tape media use
- Deliver processes based on digital file management

The broadcaster hired Hewlett Packard Enterprise (HPE) to help do this. First, a multifunctional team was assembled to assess the broadcaster's as-is scenario—drawing on its documentation, conducting numerous interviews among the 13,000 staff members, and completing a detailed process analysis across preproduction, production, post production, and broadcast.

The processes analyzed relate to:

- Content and information ingested from tape to file and file transport among the production chain systems
- Asset production via digital content modification
- Asset data management

By doing this, the team could see how inflexible the broadcaster’s existing, disparate infrastructure was. This inflexibility created increased support and maintenance expenses. And tape and file workflow processes—such as tape movement and rights management—created inefficiencies among technology and creative staff.

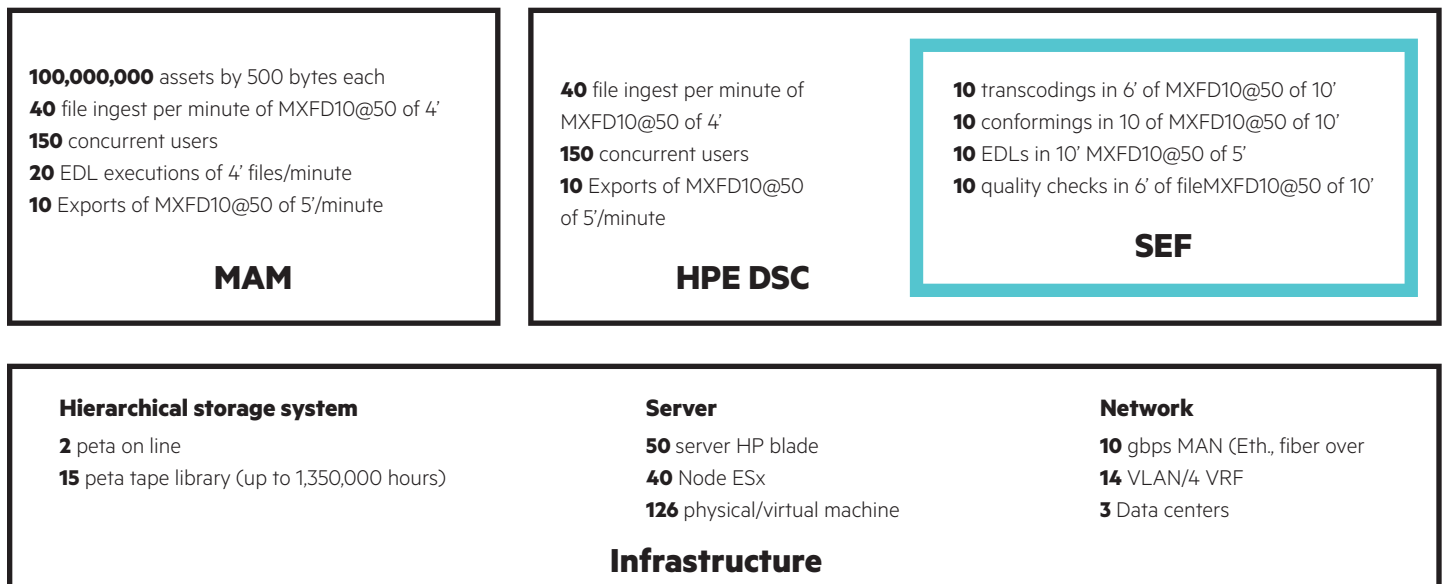


Figure 4: Example sizing for digital TV production transformation

The broadcaster, with HPE, implemented a federated solution that leveraged shared capabilities while addressing the specific needs of the selected individual production areas. It used a logical architecture platform, and its features and functionality now work together with developed user roles and profiles. The delivered core infrastructure:

- Enables the exchange and sharing of content (assets), metadata, controls, and event reports throughout the supply chain and across all systems in the production areas
- Creates a common infrastructure necessary for creation, orchestration of asset creation, process management, and workflow across the production chain
- Implements full intrasystem communication, enabling cross-referencing between various production databases and transmission systems
- Cooperates synergistically with systems in the publishing value chain and supply chain management, standardizing and normalizing data semantics

With all of this implemented, the broadcaster was able to:

- Reduce production operating expenses
- Facilitate new digital revenue streams through online channel enablement
- Reduce maintenance efforts and cost

HPE Industry Advisory Program is a unique HPE Solution Consulting Services program that delivers innovative thought leadership to address our clients' key business issues. It's built on the global knowledge, expertise, and experience of our industry business consultants. The program incorporates proven HPE methodologies, industry frameworks, and intellectual capital to deliver true business value through a collaborative, social media-based environment.

Get support

Hewlett Packard Enterprise is a global technology solutions provider, offering IT infrastructure and global services and user devices. We exist to invent, engineer, and deliver technology solutions that drive business value, create social value, and improve the lives of clients. Specifically, we help media organizations:

- Transform to IT-based operations and Internet-based businesses
- Exploit content across multiple channels
- Generate actionable, unparalleled customer intelligence
- Enable seamless, connected user experiences
- Deliver operational efficiencies and enable more innovation

HPE Digital TV Framework provides a modular solution to manage innovative business models and deliver digital TV services through an agile, efficient approach. It is set to a common foundation that shows areas, modules, and components that compose the digital TV context with a background language with broadcasters, OTT players, and content producers.

Learn more at
hpe.com/csp/scs
hpe.com/csp/media

About the authors

Alessandro Puglia

Alessandro Puglia has more than 10 years of consulting and industry experience helping clients improve their performance, addressing strategic and operational issues. In his professional career, Puglia served top players across the communication and media industry as a business consultant, applying advanced subject-matter knowledge in complex business issues, and identifying and executing their IT strategy.

Alberto Curcio

Alberto Curcio is a solution-oriented professional with a business, technical, and communication background. Curcio has extensive experience in business process modeling and adoption of communication and media industry frameworks. He has a special interest in digital television technologies. And his activities include coordination of thought leadership initiatives.



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