

TABLE OF CONTENTS

Abstract	3
Content Creation and Management Challenges.....	4
Content Distribution Challenges	4
Content Creation and Management Transformation.....	4
Content Distribution Transformation	5
Sify Empowers the M&E Enterprise	5
Summary	7

Abstract

This whitepaper addresses the production and distribution challenges moving the Media and Entertainment (M&E) industry toward digital transformation of their network services. It defines a new digital value chain for the industry to scale creation and delivery of digital media assets and to optimize costs and infrastructure. It also provides an overview of best-of-breed content production and content delivery solutions in the cloud, at the edge, and in the last mile from Sify, in partnership with hyperscale cloud providers.

Network Challenges and Opportunities in the M&E Value Chain

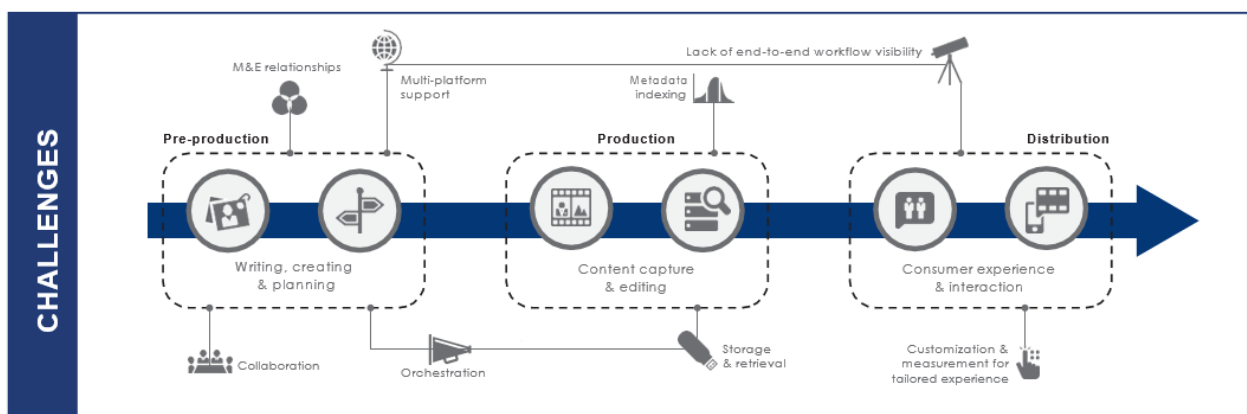
Pre-production, post-production media companies and real-time streaming services are dealing with an explosion of content as they race entertainment and other content to market. This work requires digital capture, editing technologies and next-generation animation workflows. These create multiple image streams that must be passed among real-time and non-linear broadcast workflows and then to IP destinations in various formats.

It's sophisticated, complex, and requires a robust, diverse network environment.

For most M&E companies, a digital transformation is a must. Outdated processes — like FedExing film media to each partner in the media asset development workflow — have yet to be universally reinvented to enable timely digital media transport. That's because many media creation and management workflows are still siloed between traditional and digital IT infrastructures. This limits the options of M&E companies looking for new ways to efficiently and cost-effectively develop media content and bring it to market quickly.

What's needed is a new IT approach to interconnect global media assets, partners, end customers, and the cloud with low-latency services to drive greater efficiency, lower costs, and lower risk.

Figure 1. M&E Industry Challenges -- Pre-production, Production, and Distribution



Content Creation and Management Challenges

Content production with high-bandwidth visual effects (VFX) content requires the continual processing and review of large amounts of data in multiple formats of video, audio, and images. Most major feature films comprise more than a petabyte of active data. During content production, data is constantly changing and needs to be accessed by multiple users. Technologies like the cloud provide M&E enterprises with much-needed scalability and can be used for web-like applications with less data and more users. But content production requires specialized software and hardware built to handle large image, video, and audio files.

In the past, such huge files made working in the cloud problematic because it was challenging to provide asynchronous, cross-organization data management, metadata management, and access management. Data transport latency, bandwidth, and cost were other factors, along with cloud system integration complexity, throughput issues, and lack of interoperability between tools and solutions in different organizations in the value chain.

Content Distribution Challenges

Today's content distributors range from content delivery networks (CDNs), eyeball networks (e.g., mobile and Wi-Fi broadband), and over-the-top (OTT) providers. All are confronting pressures on existing infrastructure from skyrocketing bandwidth demands. M&E enterprises can utilize the modern cloud infrastructure to work with large amounts of constantly changing data. However, many of the same management, transport, security, and interoperability challenges faced by content creators are also impacting content distributors.

M&E content distributors need to be able to tap continuous insights to optimize cloud usage and enhance the customer experience. They need to be able to provide continuous application upgrades, including with integrations of multiple solutions.

Content Creation and Management Transformation

Content creation companies need a new IT approach that will let them interconnect media assets, production partners, and the cloud globally to deliver media cost efficiently, securely, and with low latency. Content creation and management include multiple stages and processes, from pre-production (e.g., scripting, location scouting, auditions, workflow planning), to production (e.g., filming, ingest, transcoding), storage and archiving, and post-production (e.g., editing, rich indexing, special effects, metadata development). These workflows are dependent on fast access to digital assets, regardless of format or location, for all participants.

What does the digital transformation of content creation and management include?

- The ability to utilize new digital media services, cloud computing, and software-defined networking (SDN) without making huge investments to rebuild legacy IT infrastructures
- Increased productivity, reduced inefficiencies, and greater cost savings by giving each player in the supply chain easier and more proximate access to media assets
- Housing and securing the huge amount of digital media files and metadata being created

Content Distribution Transformation

To improve productivity and user experience, M&E enterprises can use edge data centers and compute farms to more efficiently handle the high velocity of content created continuously by users. For video on-demand (VoD) or live streaming, media providers can run end-to-end video workflows in the cloud from remote locations with improved security, latency, customization, and integration.

What does the digital transformation of content distribution include?

- Scaling IT and network infrastructures to meet consumer demand
- Delivery of a high-quality viewer experience in multiple formats to any device anywhere in the world via any channel — social, mobile, cloud, or retail

Sify Empowers the M&E Enterprise

Sify's comprehensive services for M&E companies include hybrid cloud and hybrid IT-ready, cloud-adjacent data center, edge data center, and edge interconnect offerings. Our 48 interconnected data centers with 3100 PoPs spread across India provide best-in-class content delivery. They provide deterministic connectivity between data center and cloud environments, ensuring high productivity, an enhanced end user experience, and real-time content delivery for the last mile.

Serving over 10,000 customers in India, the United States, the United Kingdom, Singapore, and Dubai, our extensive experience and engineering capabilities have made Sify a preferred service provider partner for M&E organizations. In addition to Sify's interconnected data centers, we provide a fast and deterministic cloud interconnect for major hyperscale public cloud vendors, including AWS, Microsoft Azure, and Oracle.

We offer the flexibility to utilize native solutions available from hyperscale cloud vendors and third-party solutions (AWS, BeBop, etc.). These flexible solutions enable remote access and the ability to run all processing-intensive creative tools with a regular Internet connection.

Other Sify Services include:

- Cloud Migration
- Cloud Management
- Managed Services
- Container Management Solutions (e.g., Kubernetes-as-a-Service)
- Unified Collaboration Solutions
- Data Management

With a Sify hybrid cloud, M&E enterprises can utilize the metadata management capabilities from hyperscale cloud providers to process, analyze and extract metadata locked in the content.

Sify’s cloud adjacent data centers in Mumbai provide direct, high bandwidth, low latency connectivity between private infrastructure and hyperscale clouds that is also cost effective. With our unique cloud adjacency concept, M&E customers can move applications, middleware and database workloads on a reliable and secure connection at near zero latency. Our interconnected data centers and far-reaching Multiprotocol Label Switching (MPLS) network covering 1600 cities across India further help in addressing latency and bandwidth issues for remote sites.

Figure 2. Sify’s Global Network Infrastructure and Services for the M&E Industry

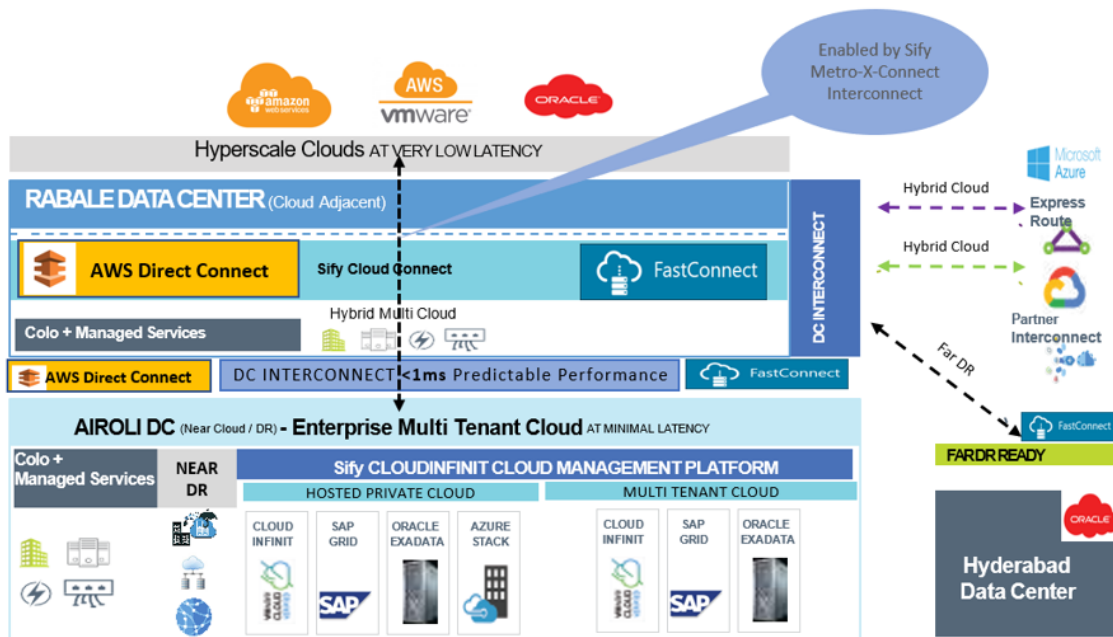


Figure 2 illustrates Sify’s hybrid cloud architecture. Hybrid IT-ready data centers in Mumbai are cloud adjacent or near clouds and provide direct connections to hyperscale cloud environments like AWS, Azure, and Oracle to provide 10G+ speeds with less than 100 milliseconds of latency.

Sify’s Security Services keep IT infrastructure secure and compliant. We proactively secure clouds, data centers, and endpoints, providing Identity and Access Management (IAM) and Managed Detection and Response (MDR) services from our dedicated Security Operations Centers. Other Sify real-time and automated security solutions further help in identifying vulnerabilities.

Sify's cloud-native value chain allows our M&E customers to connect islands of discrete toolchains through the use of services like Kubernetes-as-a-Service and Toolchain-as-a-Service for DevOps and DevSecOps. This saves companies from having to invest in tools for interoperability between different teams and organizations. Benefits of the value chain include automated DevOps and DevSecOps, enabling Continuous Integration, Continuous Delivery (CI/CD) pipelines for faster time to market. Utilizing third party solutions like BeBop on Sify infrastructure, M&E enterprises can further ensure continuous and timely application upgrades.

Sify's CloudInfini Cloud Management Platform provides complete visibility and control over consumption of compute and storage intensive media workloads, saving cost and improving utilization of the cloud. DevOps teams can also use the Sify cloud native value chain to further optimize all of their operations and continually improve the end user experience.

Sify's hybrid cloud capabilities enable M&E companies to choose the best infrastructure landscape suited to their applications so they can continuously create, manage, and distribute content effectively and analyze how they can enhance end user experience and improve profitability. The Sify hybrid cloud provides incredible flexibility, agility, and choice. CapEx is lowered and scalability greatly expanded. Workloads can be split across on-premises and cloud environments. All of the parts of the M&E business are cloud-enabled — DevTest, backup and disaster recovery, software-as-a-service platform to launch new applications, and more. And the hybrid cloud simplifies addressing compliance requirements and data center consolidation.

Summary

M&E companies are looking for a network services retrofit to connect media production houses producing content remotely, to serve end customers with streaming video on demand, and to enable technology integration for security, privacy, compliance, artificial intelligence, and AR/VR across different clouds, managed services, and global regions.

With digital content creation spends on a significant rise globally, M&E organizations need dependable, bulletproof transport solutions to capitalize on this huge opportunity.

Sify is a service provider, systems integrator, consultant, and developer all in one. We serve M&E companies with a range of services and solutions. At Sify, we believe every application and service in an M&E company that can be migrated to the cloud must be migrated. Otherwise, latency, bandwidth, and cost issues will destroy the bottom line. For the other applications in a M&E organization, Sify supplies services from cloud-adjacent data centers that provide direct connectivity between private infrastructure and hyperscale and hybrid cloud environments.

For more information on Sify services for the M&E industry write to us at marketing@sifycorp.com