

Accelerating Digital Transformation: How a Major Broadcasting Company Revolutionized Their Infrastructure

Yadagiri Nadiminty

Independent Researcher, USA

Abstract: In this article, the author follows the process of digital transformation of one of the key American broadcasting enterprises that managed to modernize its legacy infrastructure by using the strategic use of clouds. Deluged with problems in the form of operational inefficiency, rising costs, low levels of agility, and susceptibility to security breaches, the organization had sought Virtusa to help it implement a modernization program by means of AWS. The transformation involved four important dimensions that included infrastructure modernization with the help of Amazon EKS and containerization, database transformation with the help of RDS and Aurora, application modernization with the help of microservices and serverless, and security enhancement in general. The article shows how conventional broadcasting companies are capable of ensuring that they thrive through a digital-first strategy without stopping the business. The combination of a multi-dimensional focus at once on the technical, financial, and organizational dimensions of the solution led the company to see tremendous results in its cost structure, operational agility, its security posture, and its technical capability. The experience of this transformation can be very instructive with regard to other media organisations facing similar challenges of digital disruption, warning of the need to modernise comprehensively across the entire business and the reliance on strategic technology partners in order to be able to reap sustainable competitive advantage.

Keywords: Cloud Transformation, Broadcasting Modernization, Infrastructure Containerization, Microservices Architecture, Digital Media Evolution.

INTRODUCTION

Media organizations face mounting pressure to overhaul outdated technology infrastructure in today's shifting landscape. Digital transformation has become crucial for broadcast companies striving to maintain market relevance, as recent industry analyses reveal. Studies show legacy systems directly undermine financial performance and market standing, particularly challenging for established broadcasters balancing traditional operations alongside digital innovation needs (Costa, R. L. D. *et al.*, 2022).

A leading American broadcasting firm recently completed an extensive cloud migration journey, offering critical insights for similar organizations. Internal evaluations revealed that their antiquated systems caused worsening operational difficulties, creating an urgent need for technological reinvention. This mirrors current research showing how broadcast entities must undertake fundamental infrastructure changes to navigate evolving audience behaviors amid technological disruption. Experts particularly note that cloud platforms provide essential flexibility for adapting to changing consumption patterns and content distribution demands (Matthew N. O. S. *et al.*, 2025).

Implemented with Virtusa and built on AWS architecture, this transformation illustrates how strategic cloud adoption reshapes broadcasting operations. The approach followed contemporary

research frameworks, favoring holistic rather than piecemeal modernization. Through simultaneous improvement of infrastructure, databases, applications, and security measures, the broadcasting firm created an interconnected technology ecosystem supporting both current operations and future innovation in an increasingly competitive digital media environment.

THE CHALLENGE

Legacy Infrastructure Limitations

The broadcasting firm struggled with increasingly problematic technology foundations as media consumption evolved. Outdated infrastructure created interconnected challenges hampering business functions across numerous areas. Technical architecture built during traditional broadcasting's dominance proved woefully inadequate for digital content delivery demands. Similar patterns emerge across service sectors, where outdated technical systems substantially reduce operational effectiveness and customer satisfaction, paralleling challenges documented in hospitality industry transformation initiatives (Anwar, F. A. *et al.*, 2024).

Operational inefficiency emerged as a primary concern, with aging systems demanding excessive maintenance and manual intervention. Technical staff found themselves dedicating excessive resources simply to maintaining existing functionality rather than developing new

capabilities. Data workflows frequently require extensive human oversight, creating bottlenecks that delay content delivery and analytics. Such patterns mirror broader challenges noted in transformation research, where organizations burdened with aging infrastructure experience substantial productivity losses from fragmented systems never designed for modern digital platform integration (Anwar, F. A. *et al.*, 2024).

One more critical challenge was accelerating costs, which required large capital investment and operating funds to maintain legacy infrastructure. The company was increasingly incurring costs of specialized hardware, proprietary software licenses and technical know-how on ever more obsolete systems. This financial burden limited resources available for innovation pursuits. Research into media business transformation indicates that such cost structures typically disadvantage traditional broadcasters against digital-native competitors operating with efficient technology stacks designed specifically for current market conditions (Villi, M., & Picard, R. G. 2019).

The firm was extremely rigid in its system, which acted as a barrier to reorganize itself on the basis of the change in the market. Technical architecture used to be altered significantly when new distribution channels appeared or the watching

patterns changed. This limited adaptability created substantial competitive disadvantages in an industry where market responsiveness determines success. Studies examining media production practices demonstrate that transformative technologies like cloud computing and containerization have become essential for enabling operational flexibility needed in today's rapidly evolving media landscape (Villi, M., & Picard, R. G. 2019)

Security vulnerabilities represented a particularly troubling aspect of the legacy environment. The aging technology opened loopholes of exposure of sensitive information such as viewer information, proprietary file, and business intelligence. Several components of infrastructure were end of support with the vendors forming unattended loopholes of security. The broadcasting firm encountered mounting difficulty meeting evolving compliance requirements with systems designed before current security standards existed.

These limitations transcended mere technical inconveniences—they directly threatened competitive standing in an industry experiencing rapid digital transformation. The cumulative effect created substantial business risk, potentially undermining market relevance as digital-native competitors gained audience share.

Table 1: Broadcasting Legacy Infrastructure Limitations (Anwar, F. A. *et al.*, 2024; Villi, M., & Picard, R. G. 2019)

Challenge Area	Key Issue	Impact
Operational Inefficiency	Excessive maintenance requirements	Resources diverted from innovation
Cost Structure	High capital expenditure model	Limited funds for strategic initiatives
System Rigidity	Slow response to market changes	Competitive disadvantage
Security Vulnerabilities	Outdated protection mechanisms	Compliance risks and data exposure

THE SOLUTION

AWS-Powered Modernization

The broadcasting firm realized that it was high time that it should be able to bring change, and it joined forces with the help of Virtusa to be able to embrace a complete cloud modernization with the help of Amazon Web Services. This business choice was in line with the new best practice in the transformation of media technology, where cloud adoption stands at the center of successful digital transformation. Industry analysis reveals that broadcasters implementing cloud technologies achieve marked improvements in operational efficiency while gaining the flexibility needed for adapting to changing distribution requirements and content formats (Ali, A. 2023). The transformation

strategy encompassed several key components addressing critical technical limitations.

Infrastructure Modernization

Work began by containerizing existing EC2 workloads using Amazon Elastic Kubernetes Service, establishing a more adaptable infrastructure foundation. This containerization approach marked a fundamental shift from conventional server-based deployment toward a dynamic infrastructure paradigm. By encapsulating applications with dependencies inside containers, the firm gained the ability to deploy workloads consistently across environments while improving resource utilization. The modernization phase incorporated automated scaling capabilities, adjusting compute resources based on actual demand patterns, eliminating inefficiencies from

static provisioning models that previously caused either resource underutilization or performance bottlenecks during peak periods. Broadcasting experts note that containerization proves particularly valuable for media organizations handling unpredictable workloads, such as breaking news events or live broadcasts, where demand spikes rapidly and traditional infrastructure typically struggles to adapt (Ali, A. 2023).

Database Transformation

Legacy database systems were migrated to Amazon Relational Database Service and Amazon Aurora during transformation. This shift fundamentally altered data management approaches, transitioning from self-managed database instances requiring substantial administrative overhead toward managed services automating routine maintenance. Migration involved meticulous mapping of existing data structures and access patterns, ensuring compatibility while preserving critical functionality. The new database structure provided better performance with efficient configurations, reliability of the database as the database was backed up daily and provided with failovers, and increased security since the database had in-built encryption and access controls. Indeed, in terms of business transformation studies, efficient data management is one of the key differentiators in the media sector, and recent database structures allow real-time analytics functions that influence personalization and audience engagement initiatives (Elia, G. *et al.*, 2024).

Application Modernization

Core business applications underwent redesign using microservices architecture and serverless technologies, representing perhaps the deepest transformation aspect. This was to be done by separating monolithic applications into services

that were independent, focused towards purpose, and would be developed, deployed, and scaled separately. Technical agility was increased further by adopting serverless computing models on suitable workloads since the application development teams no longer needed to worry about infrastructure management. This architectural shift enabled greater development flexibility through smaller codebases; reduced time-to-market for new features via parallel development; and improved system resilience by limiting component failure impacts. Business strategy research examining digital transformation initiatives identifies application architecture modernization as foundational for building organizational adaptability, with firms successfully implementing microservices architectures demonstrating higher innovation rates and market responsiveness (Elia, G. *et al.*, 2024).

Security Enhancement

The transformation incorporated robust security frameworks specifically designed to protect customer data throughout modernized environments. Such an in-depth security strategy incorporated several protection levels, such as network segmentation, data in transit and at rest encryption, identity and access control measures, and constant compliance monitoring. Defense-in-depth defense architectures were implemented that removed the possible single point of failure and they also offer full visibility into a threat. These measures ensured regulatory compliance while strengthening the overall security posture. Broadcasting experts emphasize that security considerations become increasingly critical as media workflows migrate to cloud environments, with content protection and audience data privacy representing particular concerns requiring specialized security approaches tailored for media operations (Ali, A. 2023).

Table 2: Cloud Transformation Technology Stack (Ali, A. 2023; Elia, G. *et al.*, 2024)

Modernization Area	Technology Implemented	Primary Benefit
Infrastructure	Amazon EKS containerization	Dynamic resource scaling
Database	RDS and Aurora migration	Reduced administrative overhead
Applications	Microservices architecture	Parallel development capabilities
Security	Defense-in-depth frameworks	Comprehensive threat protection

RESULTS

A Foundation for Future Growth

The cloud modernization initiative delivered substantial improvements across multiple dimensions, creating a technology foundation that positioned the broadcasting company for long-term

success in an increasingly competitive digital media landscape. The transformation outcomes reflected the comprehensive nature of the modernization approach, with benefits extending beyond immediate technical improvements to enable fundamental business model evolution.

These results aligned with industry research findings that media organizations implementing comprehensive cloud strategies typically achieve 31% faster time-to-market for new services and 40% improvement in infrastructure utilization compared to those maintaining traditional broadcast technology stacks (451 Research,).

Cost optimization emerged as one of the most immediately apparent benefits of the transformation. Infrastructure expenses shifted from a capital expenditure model characterized by large, periodic investments in hardware and facilities to a more predictable operational expense structure based on actual resource consumption. This financial restructuring improved the company's ability to align technology spending with business outcomes while eliminating the capacity planning challenges that had previously resulted in either overprovisioning or resource constraints. The new consumption-based model provided greater financial flexibility, allowing the company to scale spending in proportion to audience growth and content delivery requirements. Industry research has documented significant financial benefits for media organizations implementing cloud technologies, with typical cost savings of 30-50% for content storage and processing workflows, particularly for organizations transitioning from traditional on-premises broadcast infrastructure (451 Research,).

Enhanced agility represented perhaps the most strategically significant outcome of the modernization effort. The combination of containerized applications and microservices architecture fundamentally changed the company's ability to respond to evolving market conditions and audience expectations. Development cycles that had previously required months of coordination across multiple teams could now be completed in weeks or even days through parallel workstreams focused on specific services. This technical agility translated directly into business agility, enabling the broadcasting company to rapidly introduce new content formats, distribution channels, and monetization models in response to competitive pressures and audience preferences. Studies examining innovation dynamics in digital transformation contexts have identified technical architecture modernization as a critical enabler of organizational adaptability, with companies implementing microservices-based architectures demonstrating significantly higher innovation success rates compared to those maintaining

monolithic application structures (Heuermann, M. *et al.*, 2024).

Improved security represented another crucial dimension of the transformation outcomes. Modern security frameworks implemented as part of the cloud modernization initiative significantly reduced risk exposure while enhancing protection for both content assets and audience data. The shift from perimeter-based security models to comprehensive, defense-in-depth approaches provided better protection against evolving threat vectors while improving the company's ability to detect and respond to potential security incidents. This enhanced security posture was particularly important given the increasing regulatory focus on data privacy and the growing value of digital content assets. Research into digital transformation security outcomes has identified that organizations implementing cloud-native security architectures typically experience 37% fewer security incidents and 42% faster incident response times compared to those relying on traditional security approaches (Heuermann, M. *et al.*, 2024).

The technical modernization achieved through the initiative created a technology stack that was fundamentally more maintainable, scalable, and aligned with industry best practices. Legacy systems that had required specialized knowledge and customized support arrangements were replaced with standardized, well-documented technologies that leveraged the broader technical ecosystem. This shift reduced the company's dependence on specialized skills while improving their ability to recruit and retain technical talent familiar with modern cloud platforms. The standardized technology approach also simplified integration with third-party services and content partners, enabling more efficient content exchange and distribution arrangements. According to industry analysis, media organizations that standardize on cloud platforms typically reduce integration complexity by 45-60% and decrease time-to-integration for new partners by up to 70%, creating significant competitive advantages in an increasingly interconnected content ecosystem (451 Research,).

Collectively, these improvements established a foundation for future growth that extended well beyond the immediate technical benefits. By addressing fundamental limitations in their technology infrastructure, the broadcasting company positioned itself to pursue new business opportunities, respond more effectively to

competitive threats, and deliver enhanced experiences to their audience across multiple platforms and devices. The transformation initiative demonstrated how strategic technology

modernization can serve as a catalyst for broader business evolution in an industry undergoing rapid digital disruption.

Table 3: Broadcasting Cloud Transformation Outcomes (451 Research,; Heuermann, M. *et al.*, 2024)

Result Area	Before Transformation	After Transformation
Cost Structure	Capital-intensive, fixed	Operational, consumption-based
Development Speed	Months-long cycles	Days-to-weeks delivery
Security Posture	Perimeter-based protection	Defense-in-depth model
Technical Integration	Complex, custom interfaces	Standardized API connections

THE BROADER SIGNIFICANCE

This transformation case demonstrates how organizations in traditional media sectors can successfully navigate digital transformation challenges in an industry experiencing profound technological disruption. The broadcasting company's journey illustrates the potential for established media enterprises to overcome legacy constraints and develop the technical capabilities needed to compete effectively with digital-native competitors. Beyond the immediate operational improvements, this case offers valuable insights into effective transformation approaches that balance technical modernization with business continuity requirements. Research examining digital transformation across traditional business models has identified that companies successfully adapting to new industry paradigms typically develop comprehensive strategies that address both technological infrastructure and business model innovation simultaneously, rather than pursuing piecemeal improvements that fail to create sustainable competitive advantages (Caliskan, A. *et al.*, 2021).

By embracing cloud technologies, containerization, and modern application architectures, the broadcasting company positioned itself to thrive in an increasingly digital media environment. The transformation demonstrated how foundational technologies like containerization can bridge the gap between traditional broadcasting operations and emerging digital delivery models, enabling organizations to maintain existing revenue streams while developing new capabilities. This hybrid approach proved particularly effective in allowing the company to evolve their technology foundation without disrupting critical business functions. Studies examining successful digital transformations have found that traditional businesses must fundamentally reimagine their operating models while implementing modern technology infrastructure, as technological changes

alone rarely deliver sustainable competitive advantages without corresponding business process evolution (Caliskan, A. *et al.*, 2021).

The initiative also highlights the importance of selecting the right technology partners and platforms in transformation success. The collaboration with Virtusa provided the specialized technical expertise needed to navigate complex migration challenges, while the strategic use of AWS services established a robust foundation for building next-generation broadcasting capabilities. This partnership approach enabled the broadcasting company to access specialized knowledge while accelerating their transformation timeline compared to what would have been possible with internal resources alone. Technology transformation experts have observed that organizations partnering with experienced implementation specialists typically achieve more comprehensive outcomes than those attempting to navigate complex transformations independently, particularly when dealing with cloud migrations that require specialized architectural expertise (Technology Partners).

The transformation yielded significant technical benefits while also fostering important organizational changes that extended beyond the technology domain. By adopting modern development methodologies alongside technical modernization, the broadcasting company created a more collaborative and innovation-focused technical culture. This cultural evolution proved equally important to the technical improvements in enabling the organization to respond more effectively to market changes and audience expectations. Digital transformation specialists emphasize that successful initiatives must address organizational culture and skills development alongside technological implementations, as employee adoption and capability development often determine whether technical investments

translate into business outcomes (Technology Partners).

As media companies continue to face pressure from digital-native competitors, such transformation initiatives will become increasingly critical to long-term success. The broadcasting company's experience serves as a valuable blueprint for organizations seeking to modernize legacy infrastructure while maintaining operational continuity. The case demonstrates how even organizations with extensive legacy technology investments can successfully transition to modern architectures through well-designed migration strategies that manage risk while progressively introducing new capabilities. This measured approach proves particularly important in the broadcasting sector, where service continuity

requirements often preclude more disruptive transformation approaches.

The broader significance of this case extends beyond the specific technologies deployed to encompass fundamental principles that can guide similar transformation initiatives across the media industry. By focusing on core business objectives rather than technology for its own sake, maintaining operational continuity throughout the transformation process, and addressing both technical and organizational dimensions of change, the broadcasting company established a model that others can adapt to their specific circumstances. As media consumption continues to evolve and competitive pressures intensify, the ability to execute such transformations effectively will likely become a defining characteristic of organizations that thrive in the digital media landscape.

Table 4: Key Principles for Successful Media Transformation (Caliskan, A. *et al.*, 2021; Technology Partners)

Principle	Description	Application
Holistic Approach	Addressing technology and business processes	Sustainable competitive advantage
Strategic Partnerships	Leveraging external expertise	Accelerated implementation timeline
Cultural Evolution	Developing innovation-focused mindset	Enhanced organizational responsiveness
Incremental Migration	Progressive capability introduction	Maintained operational continuity

CONCLUSION

The cloud transformation experience of the broadcasting firm shows how the race to modernize technology by the broadcasting firm was able to overcome the challenges of digital disruption facing traditional media companies. The company was able to lay the base of technology by adopting an end-to-end strategy, which managed to handle infrastructure, database, application, and security simultaneously and thus provide the ability to meet operational needs in the present and future, ability to drive innovation. The transformation provided immense returns in several aspects, in the process of ensuring the organization continued running its operations during the process of the transformation. More importantly, the project not only introduced a significant number of necessary cultural and organizational modifications that were not confined to technical enhancement, but also caused the work environment to be more collaborative and innovation-oriented. The continuation of the media consumption trends and the trend towards high competition will probably influence the likelihood of organizations to succeed in the new digital

media environment through the effectiveness of similar transformations. The case presents an effective blueprint by other traditional media entities as to how holistic transformation plans need to focus more on technical and organizational strategies, coupled with strategic network partners that enable them to acquire the much-needed factual knowledge and fast-track implementation schedules.

REFERENCES

- Costa, R. L. D., Cabral, L., Pereira, L., Dias, Á., & Gonçalves, R. "The impact of digital transformation on media industry." *International Journal of Economics and Business Research* 24.4 (2022): 471-489.
- Matthew N. O. S. *et al.*, "Cloud Computing in Media and Entertainment." *International Journal of Trend in Scientific Research and Development (IJTSRD)*, Volume 9, Issue 3, (2025).
<https://www.ijtsrd.com/papers/ijtsrd81128.pdf>
- Anwar, F. A., Deliana, D., & Suyamto, S. "Digital transformation in the hospitality industry: Improving efficiency and guest

- experience." *International Journal of Management Science and Information Technology* 4.2 (2024): 428-437.
4. Villi, M., & Picard, R. G. "Transformation and innovation of media business models." *Making media: Production, practices, and professions* (2019): 121-131.
 5. Ali, A. "Benefits of Cloud Technology in Broadcast Workflows & Operations." *RGB Broadcasting*, (2023).
<https://www.rgbbroadcasting.com/blog/benefits-of-cloud-technology-in-broadcast-workflows-and-operations/>
 6. Elia, G., Solazzo, G., Lerro, A., Pigni, F., & Tucci, C. L. "The digital transformation canvas: A conceptual framework for leading the digital transformation process." *Business Horizons* 67.4 (2024): 381-398.
 7. 451 Research, "Cloud-based services powering transformation in media and entertainment." <https://d1.awsstatic.com/Marketplace/solutions-center/downloads/451-Research-Media-Brief.pdf>
 8. Heuermann, M., Gaiser-Bertram, S., & Schallmo, D. "Digital Transformation Success Factors: A Systematic Literature Review and Bibliometric Analysis." *International Journal of Innovation Management* 28.09n10 (2024): 2440004.
 9. Caliskan, A., Özkan Özen, Y. D., & Ozturkoglu, Y. "Digital transformation of traditional marketing business model in new industry era." *Journal of Enterprise Information Management* 34.4 (2021): 1252-1273.
 10. Technology Partners, "How Technology Partners Helps With Your Digital Transformation." <https://technologypartners.net/industry-insights/blog/2022/11/how-technology-partners-helps-with-your-digital-transformation>

Source of support: Nil; **Conflict of interest:** Nil.

Cite this article as:

Nadiminty, Y." Accelerating Digital Transformation: How a Major Broadcasting Company Revolutionized Their Infrastructure." *Sarcouncil Journal of Engineering and Computer Sciences* 4.8 (2025): pp 407-413.