

Toward 'Converged' Ecosystems: The Evolution and Transformation of Digital TV Services

Abstract

Over 39 million viewers will be cutting the cord and moving to OTT platforms in 2019 compelling pay TV to rethink their service offerings. With digital native viewers taking over global audience pools and emerging markets, the way forward is all too clear: an organic evolution toward technology-empowered business models and service delivery options. This includes three basic tenets: widespread network virtualization, network slicing, and next-gen plugins, working together in a converged environment to attract, engage, and retain a new breed of viewers. This paper discusses the imminent wave of digital transformation in television, network, and connectivity services. Let's look at how these forces can come together, architecting reimagined television experiences, and a likely revenue uptick for media and entertainment enterprises.

Digital Transformation in Television - Not If, But When

In a bold new world of content formats and distribution platforms, pay TV is under constant threat from digital channels. eMarketer's latest reports suggest that the number of cord-cutters will balloon to 39.3 million by the end of 2019, 45 million by 2020, 50.2 million by 2021, and 55.1 million by the end of 2022¹. Clearly, we are witnessing mass exodus to disruptive media platforms and a concurrent shift in the regulatory landscape. This poses several challenges for incumbent media service providers. For one, service providers risk losing out on revenues as mature markets begin to stagnate. Customers now have a plethora of options to choose from, be it paid OTT subscriptions, online content portals like YouTube, or the emerging IPTV. This makes retention a major pain-point, even for the most loyal users. Average Revenue per User (ARPU) tends to fall as engagement gets distributed across multiple platforms.

That's why traditional TV service providers are considering a digital-first model, designed to meet the expectations of contemporary viewers and mitigate revenue losses. However, this proves to be difficult as outmoded TV is not built for the segmentation and micro-segmentation of user demographics which OTT providers can bring. With competitors creating targeted content and ads based on region, belief systems, lifestyle, and other factors, traditional TV is left in the lurch. A 360-degree overhaul to digital experiences is impeded by the lack of adequate infrastructure, requiring massive investments from telcos and governments.

Understanding Customer Requirements: Opportunities for Service Providers

Before planning a large-scale transformation project, service providers must consider a vital question - in a hyper-competitive environment, what is your key differentiating factor? To stand out, it's important to reinforce the quality of experience (QoE) and quality of service (QoS), both of which determine a viewer's long-term platform preference. Earlier, pay TV providers attempted to address this through triple-play bundles, but now, the numbers show a steady decline. TV-centric triple-play subscriptions are expected to go from

39 million in 2019 to 28.3 million in 2021, reports Ovum.² This leads to the quad-play model, combining the triple play service of broadband internet access, television, and telephone with wireless service provisions.

For quad-play service delivery to be viable at scale, we need a genuine converged environment linking content, service, and network providers, as well as device manufacturers, in a singular value chain. A number of mergers and acquisitions would sweep across the industry, moving toward the level of consolidation required. This will answer two long-standing problems in telecom and broadcasting. First is market segregation, where complementary product and services exist in silos, in spite of them not being direct substitutes. Further, this will also allow a unified response to socio-economic factors, customer preference, and regulatory changes.

The impacts on viewing trends will be manifold. We can expect digital content to be integrated with non-IPTV platforms like WebRTC or IP multimedia subsystem (IMS), offering a multifaceted service bouquet that's more than simply 'vanilla'. Customers will be able to schedule shows, sync content across devices to watch with friends and family, enjoy multiple shows concurrently, conduct audio and video calls, and vote for reality shows directly, all from the same interface. But for this to become a reality, network providers, pay TV companies, device makers, and other stakeholders must undertake a dramatic technology overhaul.

Architecting a Layered Digital Framework: Three Key Levers

As mentioned, current networks and TV platforms are looking to enter the emergent OTT arena. To circumvent existing gaps in infrastructure and hardware capabilities, we can consider a hybrid structure, where end services are independent of platform. This implies integrating on-premise resources with cloud systems, paving the way for eventual, full-scale cloud migration.

Network management: In order to facilitate cloud-based media processing, virtual solutions must replace legacy systems. Multi-protocol label switching (MPLS) and other monolithic systems will give way to network function virtualization (NFV) and software defined networks (SDN). Providers will be able to transition rigid CAPEX to more flexible operational expenditures by outsourcing network functionality

and management to third parties. What this means, essentially, is that cable TV operators and triple-play or quad-play companies can leverage strategic partnerships to gradually move away from network ownership and management. Content, QoE, and QoS would take center stage, with customer satisfaction as the highest priority.

Network slicing: A virtual network infrastructure will enable network slicing, routing traffic as separate flows within the same environment. There could be a different network slice for machine-to-machine (M2M) traffic, public safety services, digital radio, or television services, making delivery seamless and glitch-free. Providers can configure each slice depending on security, QoS, latency, and throughput metrics for each traffic variant. New functions, services, features, and channels can be added without any disruption to existing flows. This, again, contributes significantly to QoE and QoS for the end-customer.

Next-gen plugins: Taking advantage of improved network agility and lower operational costs, pay TV and network providers can sharpen their focus on value-added services. As content streams gain stability through network slicing, high-value events (like the FIFA World Cup) can be delivered in 4K and 8K formats, creating a highly immersive experience. In fact, live/low-latency technology will also stream live events, garnering larger audiences. Using artificial intelligence (AI) and machine learning (ML), experiences can be further refined and personalized. As viewers increase and consumer databases grow, analytics layers will inspire custom recommendations and alerts, boosting ad and content revenues for content, service, and network providers.

To harness the full potential of these advancements, traditional pay TV and network providers need a full technology refresh. This spans not only the underlying infrastructure, but also customer touchpoints and business models.

A Pragmatic Implementation Approach

As discussed, pay TV is rapidly moving toward a unified landscape, exploring possible solutions to spectrum crunch, revenue dips, and rising customer expectations. Service operators would either invest directly in a domain (a slightly siloed approach) or collaborate closely in a converged environment. Taking advantage of the underlying agile and

scalable hybrid-cloud, media stakeholders can offer microservices and a robust API library that would support future platform integrations. New product development must factor in these competencies, and enable rollouts without any disruption.

Technology revamp should go hand in hand with new business models, keeping in mind an increasingly diversifying end-user base. Product, sales, and marketing teams will clamp down on their efforts to engage new customers and enhance market adoption, a must-have in order to accelerate user acceptance.

Another way of looking at things is to create a 'one-stop-shop' device, capable of disseminating all the services available, allocating resources, and billing based on the user's unique service preferences. Evolving continually, users would only need to migrate to the next version without switching service providers. The result would be longer device shelf-life, reduced manufacturing costs, and baked-in customer loyalty. Key benefits would be:

Industry-wide standardization: A converged environment will resolve issues around compliance, device compatibility, and new content formats, ensuring industry-wide transformation in-sync with component stakeholders.

New revenue channels: Next-gen plugins will unlock profit possibilities through targeted ad delivery, personalized recommendations, and real-time alerts, shielding pay TV operators from the fiscal dent left by OTT and IPTV. Additionally, network slicing, improved information pathways, and stronger collaboration between channels will enhance QoE and QoS, positively impacting customer loyalty.

Tomorrow's environment, today: A hybrid architecture, based on cloud-led API-ready architecture on one hand and modular product or service offering on the other, would create a future-proof ecosystem adapting to any trend that the consumer displays. By taking a proactive stance, existing service providers can fortify their businesses from market flex.

In Closing

The media and entertainment industry is weighing a number of consolidation possibilities internally, even as larger players forge strategic relationships with third-party network providers and system integrators. This is an essential cog in any converged environment, based on media processing on the cloud. The result- platform-agnostic services, delivered without cable, satellite, IPTV or even OTT dependencies. So, in a nutshell, that is the way forward an agile and responsive system architecture, bolstered by exhaustive API libraries. As pay TV embraces digital transformation, the next step would be hardwiring AI, ML, and data analytics into core offerings, unlocking even more exciting possibilities.

References

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