

# Traditional SNG Solution Challenges in an IP World



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## Broadcast Contribution Challenges in an IP World

The convergence of broadcast and ICT worlds has had a profound impact on systems and solutions for broadcast contribution. The complexity and capabilities of a modern SNG have dramatically increased, providing support for HD productions and modern tapeless workflows. However, the changes haven't stopped and the cost of supporting these changes, combined with the evolving business realities, are challenging. However, if these challenges are managed wisely tremendous opportunities will appear. While the choices to meet the needs of tomorrow's broadcast contribution solutions involve many technical options it must always be understood that business decisions need to drive technical choices.

## Newsgathering Today

Television is no longer served well by the SDI Baseband Router, coaxial cable and BNC connectors. New IP-based video/audio infrastructure and workflows are far more flexible and cost-effective. This White Paper explores a practical technology solution using a mixture of technologies to deliver live news events, camera crews today deploy mobile solutions capable of transmitting video, voice and broadband services over a multi-service communication link. This is made possible by leveraging the power of IP.

As broadcasts of news events are often unplanned and happen at remote locations, it is not always immediately clear which type of cost-effective IP connectivity will be reliably available for the duration of the coverage. To aggregate enough IP bandwidth to handle all of applications that the news crew requires concurrently, all available IP networks need to be bonded, whether they are 3G/4G, microwave, Wi-Fi, terrestrial links, or Ku band satellite. When terrestrial bandwidth becomes contended, the satellite link needs to dynamically scale to higher bandwidths. This application note discusses how next-generation IP satellite links boost connectivity for newsgathering crews, providing high availability and throughput while remaining flexible, cost-effective and addressing Quality of Service (QoS) challenges.

For the longest time, outside of movie theaters, the TV set at home was the only way to watch moving pictures. The audience expects high quality TV programming including live sports entertainment televised with a large complement of TV cameras attempting to cover every detail of each player on and off the field. The beginning of TV delivery was over-the-air, moving to cable and satellite, and now increasingly turning to Internet delivery. Internet streaming gives the audience the opportunity to consume TV content while on the go using Smartphones and Tablets, rather than only at home in front of the TV. Over-The-Top (OTT) television program delivery (over the Internet) has seen tremendous growth over the past several years, and in the US alone this is a multi-billion dollar business. It is interesting to examine which are the most popular digital devices used by the viewers.

## CAPEX and OPEX Savings

IP networks and appliances with 10GbE capabilities cost significantly less than comparable SDI router designs, due to the capacity of high-speed Ethernet and the very large market demand for these products, this delivers a much higher level of performance, more capabilities, and much more flexibility than traditional SDI routers for a given investment in a medium-to-large sized television or broadcast facility. Today's satellite and terrestrial IP infrastructure also delivers the benefit of advanced telemetry, monitoring and maintenance working with Network innovations Managed Solution, contributing to high reliability and significant operational cost savings.



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## An Essential and Timely Migration

The migration of the Broadcast world to IP infrastructure is definitely under way as evidenced by early adoption in some very large and influential television facilities already using IP Network architectures.

The establishment of IP Video Routers and IP Networks in television over the coming years requires substantial efforts by Broadcasters and broadcast equipment suppliers, similar to the efforts we saw in the transformation from analog to digital television. This new paradigm shift merges the disciplines of Broadcast and IT, which requires cross-functional skills and knowledge that is sure to keep the industry busy for years to come.

The move away from proprietary and bespoke broadcast technology will eventually change the approach for many types of productions, creating new workflows which are difficult to envision today. But the migration from SDI Baseband to IP Video Routing/Networking is ESSENTIAL and TIMELY.

## Proposed Solution for Broadcasters

Network Innovations proposed the following solution to help the broadcaster utilize their satellite capacity and ground infrastructure for the best effect.

Our solution comprises of Network Innovations providing a forward carrier to manage the network and return channels utilizing their capacity. By doing this we can utilize the efficiencies of the Maverick Platform and, either save on satellite capacity or, broker the excess satellite capacity on a pre-emptible basis to other customers. This would allow the capacity to remain available to you should you need it for an event where you require a large number of terminals to be in the field and transmitting (an Election for example). During a period when you require the larger amount of capacity, other users will receive reduced throughput or be switched to other capacity.

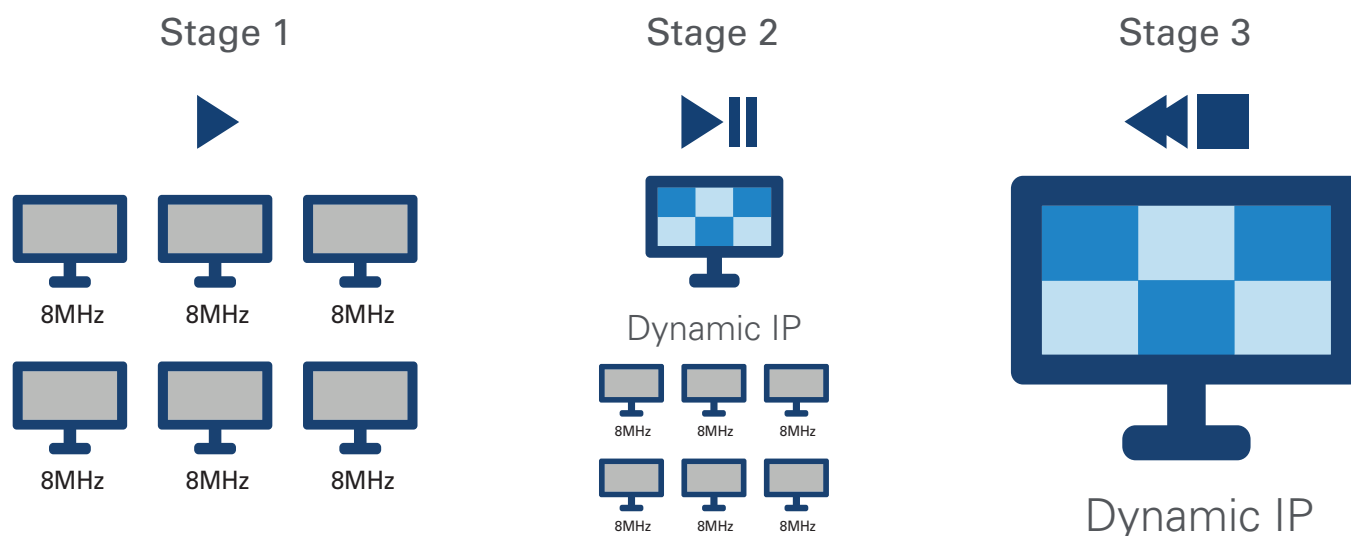
## Bandwidth Brokering and Management

Network Innovations will work as a Bandwidth Broker with a knowledge of your organization's priorities and policies and will allocate quality of service (QOS) resources with respect to agreed policies. In order to achieve an end-to-end allocation of resources across separate domains, Network Innovations will manage your capacity and ensure you have priority over other users by using the advanced QOS functionality of the Maverick Platform and the end-to-end services to be constructed out of purely bilateral agreement between Network Innovations and the Broadcaster.



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## Migration Plan and Stages



Dynamic IP carrier for multiple live feeds can grow or shrink as required Management provided of the capacity in order to have a mixture of old & new carriers

## Consultation

Network Innovations will work with the broadcaster to look at their network and workflow to see where there are saving in CAPEX AND OPEX by potentially leveraging synergies with other customers and their networks.

## Managed Solutions Offering

Network Innovations will present a solution and work with the broadcaster to ensure the solution depending on your specific requirements, ready to provide a complete 24/7/365 managerial solution that can include comprehensive carrier monitoring, sizing and switching. A technical support call centre is available for end users and service technicians, for their dedicated broadcast contribution service or remote terminals. Network Innovations are able to offer Bandwidth Management and Procurement, operations centre remote monitoring and control, trouble call service dispatching, spares warehousing and logistics as part of their managed service.