Accelerating the Transition to IP

TVU Networks' new IP-based switching, routing and content distribution technology points the way toward more efficient station workflows, greater flexibility and ultimately better TV.

The television industry is no stranger to transition. Over the past two decades, local stations, station groups and networks have completed successful transitions of their entire infrastructure from analog to digital video and transmission. Many, too, have also completed transitions from SD to HD, linear to file-based workflows and single-channel service to multicasting.

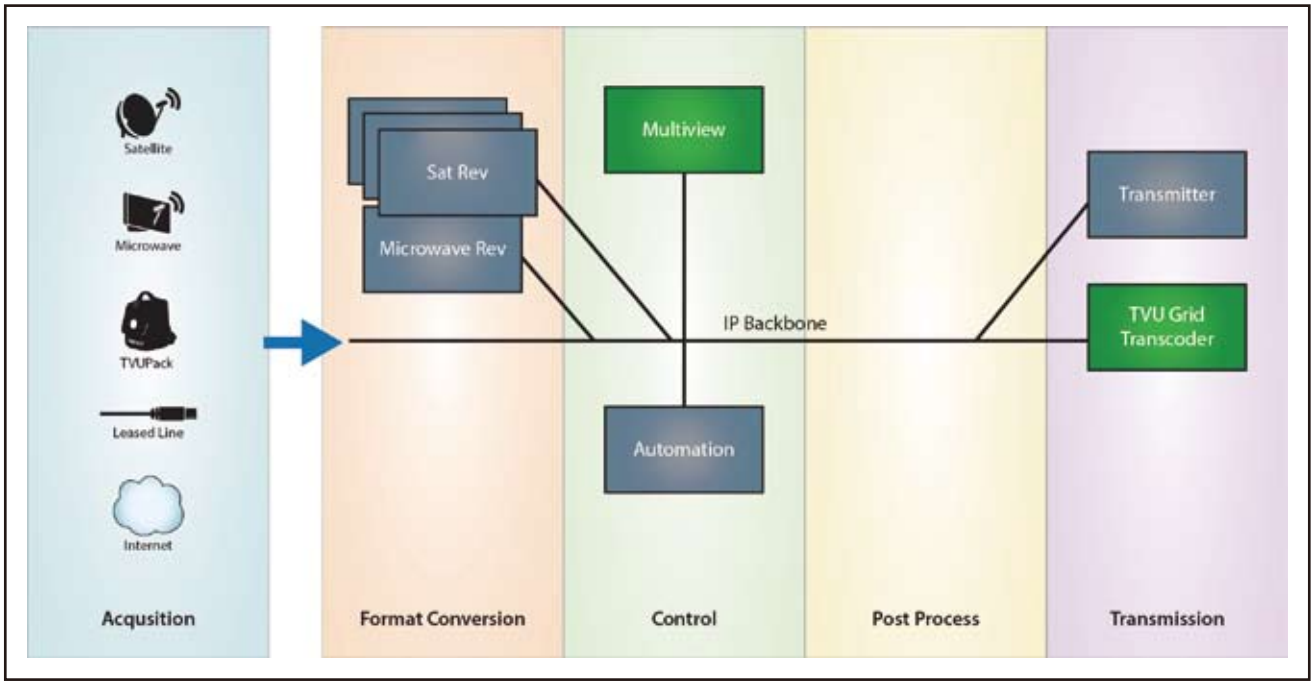
The genesis of each transition has been technological innovation coupled with business advantage. While somewhat painful to do, broadcasters have embraced the disruptions necessary to achieve these transitions in order to capture a competitive advantage, greater revenue or improved efficiencies.

Today, these same television entities find themselves at the beginning stages of a new transition in workflow that promises to more fully integrated station, group and network operations, improve workflow efficiencies across all departments within the station and extend those benefits to newsgathering crews in the field. In the case of station groups and networks, this transition can even make it far easier, less expensive and more timely to leverage the content resources of sister stations.

This latest transition for television broadcasters is the move away from baseband video contribution, routing and switching to IP-based technologies, the same technologies used for years by countless other industries and governments for mission-critical operations.

For far more than a decade, television broadcasters have used digital technologies for everything from acquisition to playout. However, proprietary digital formats and a mindset oriented towards seeing various station functions as discrete elements within an overall workflow tended to erect barriers and create digital islands, such as those necessary for ingest, graphics, editing and scriptwriting.

While an improvement from analog workflows, these early generation digital workflows restricted the free movement and sharing of content within and among station departments. For instance, "sneaker-netting" videocassettes between journalists needed to share footage or between the news and promo department was often the only way to give multiple people or departments access to the same content. Other digital islands at the station, such as traffic, master control and sales, also stood alone, contributing to less than optimal workflows.



Broadcast stations are making a move to an internal IP-based infrastructure.

The IP transition

There is a bit of irony that even as Sprint-Nextel was paying some $750 million to relocate TV broadcasters to a swath of spectrum known as the 2GHz Broadcast Auxiliary Service band (2025MHz to 2110MHz) and outfit them with new digital ENG transmitters and receivers, television broadcasters began to experiment with emerging technology that allowed them to contribute news footage from the field over IP-networks via cell phone circuits, Wi-Fi and Wi-MAX hotspots and even, with the help of VSAT antennas, from nearly anywhere in the world over IP satellite networks.

TVU Networks - with its proprietary Inverse StatMux technology that takes a signal source and reverse multiplexes it across multiple transmission channels, such as 3G, 4G and Wi-Fi networks - established itself early on as a leader in helping broadcasters leverage existing IP networks to meet the very specific requirements of newsgathering from the field. With its TVUPack, TVU Networks offered TV news crews in the field a single-button-press connection alternative to elevating and pointing a traditional ENG antenna at a fixed receiver to contribute live standups and recorded footage.

In essence, while what may prove to be the last of a generation of traditional ENG equipment, albeit digital, was being rolled out, a new IP-based contribution alternative was emerging that foreshadowed the next wave of transition in television.

Initially focused on contribution of recorded and live news reports from the field, IP-based transport of content has rippled out beyond simply being a supplement or alternative to traditional ENG to become a mainstay of content transport, switching and routing. It is breaking down the walls that created discrete digital islands to improve workflow efficiencies inside the station. IP connectivity also is extending all of the news production resources, such as news wires, graphics libraries and scriptwriting tools, found at the station to journalists in the field where they now can work as if they were seated behind their desks.

Today, IP-based technology is opening up new opportunities throughout the station, a group of stations and among network-owned stations and affiliates to share content in a collaborative workflow that achieves greater efficiencies. It’s also helping broadcasters satisfy the growing appetite of their viewers for online content.

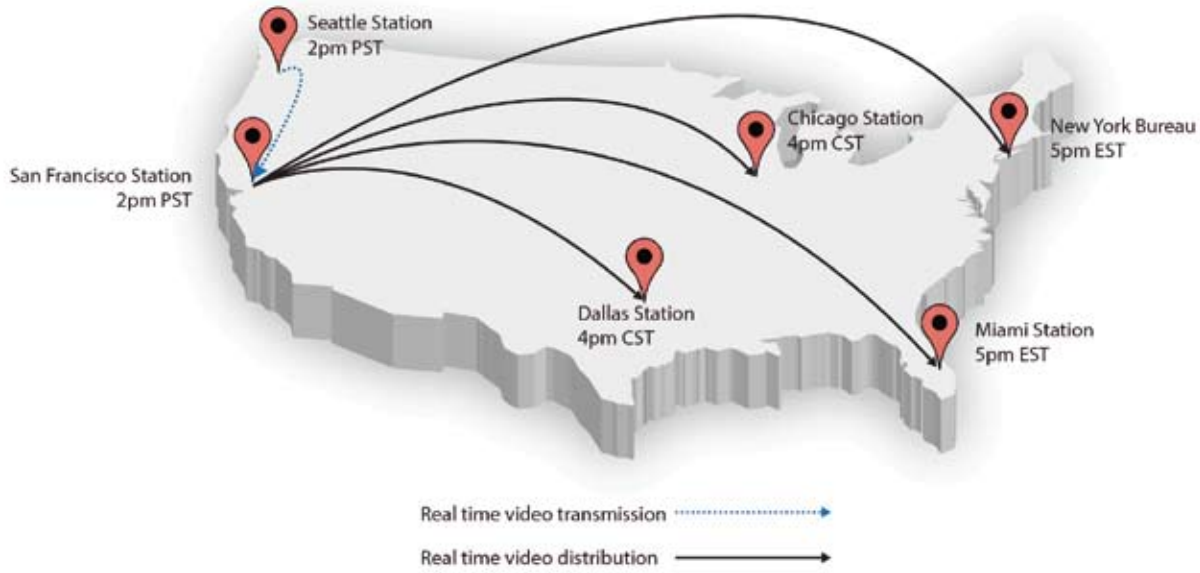
TVU Grid

At the forefront of innovations ushering in this new era of television is TVU Grid, a new product from TVU Networks that makes point-to-point and point-to-multipoint distribution of content via IP fast, simple and reliable.

TVU Grid supports frame-accurate switching of IP content to enable broadcasters to seamlessly switch between IP-based video streams without loss of video. TVU Networks’ proprietary technology allows broadcasters to switch between live video feeds from various locations without interruption.

The system supports an unlimited number of incoming IP video streams that can be switched to any destination on the network without the need for a converter. As a result, the number of feeds that can be accessed by a broadcaster jumps dramatically, giving news directors, for example, a greater number of news selection choices.

TVU Grid enables fast and easy distribution of live IP video content.



In effect, TVU Grid knocks down the barriers separating digital islands and departments within the station, topples the walls separating stations from each other's content and makes content accessible from the Internet.

From an applications point of view, TVU Grid improves the speed and efficiency of several tasks common to typical broadcast workflow. For instance, as a replacement for satellite uplinks to share content, which can entail a rather time-consuming, labor-intensive and expensive set of steps, a station group equipped with TVU Grid can share news stories, promos, graphics and other content elements via IP without regard to distance or location.

In newsgathering applications, TVU Grid offers several benefits from a staffing and workflow point of view when compared to traditional ENG approaches. For example, TVU Grid can be used for remote monitoring and control of ENG resources deployed in the field. By working in conjunction with the TVUPack cellular uplink solution, TVU Grid operators are able to directly monitor and control live feeds without ever leaving the station. Similarly, the system can provide IP connectivity to monitor levels and other parameters remotely as well as a path for an IP-based return feed to crews in the field to monitor their live shots.

TVU Grid also helps stations extend their reach to viewers online and on their mobile devices. For these sorts of applications, TVU Grid can encode content to multiple formats and directly push it to content delivery networks for direct-to-Web distribution of news stories and other content.

The future of the television industry belongs to IP. Thanks to the confluence of advancements in compression and encoding, the day when IP-based routing, switching and distribution of content becomes the norm within and among stations is fast approaching.

IP-based solutions offer broadcasters a means to tap into greater workflow efficiencies within the newsroom and far beyond. Once seemingly insurmountable barriers, such as incompatible, proprietary formats and geographic distance are melting away as IP-based solutions are integrated into station operations.

With its support of real-time IP switching, routing and content distribution TVU Grid is not simply an alternative to traditional baseband solutions but rather the lodestar to a future of station operations based upon IP technology.