The Reliability of Zixi Enables Cutting-Edge IP Workflows

THE CHALLENGE

SNG comes at a steep cost regardless of the event size and doesn't offer the flexibility required for the dynamic and competitive live production landscape. MSTV needs to be more agile and adapt on the fly to changing customer requirements. Cellular and other public networks are unreliable and don't always have the throughput required.

- Steep upfront cost with SNG
- Satellites rely on rigid hardware infrastructure
- Not flexible enough to changing requirements
- Cellular networks are lossy and unreliable
- Lack required bandwidth on single connection

THE SOLUTION

IP delivery offers the flexibility required for small to large productions while being cost efficient allowing MSTV to be competitive in all production scenarios.

- Flexibility of IP solutions
- Software based infrastructure
- Easily spin up and down resources
- Provision required bandwidth with multiple network bonding
- Provide transport resiliency with packet retransmission

For decades broadcasters have used satellite as the primary medium for content delivery. With a large percentage of the C-band spectrum being allocated to accommodate for terrestrial 5G expansion, satellite capacity is diminishing making satellite delivery not a viable long-term strategy. Broadcasters are exploring alternative solutions to transport content reliably while reducing costs and demanding operational efficiencies in acquiring and delivering content in an increasingly competitive landscape.

IP delivery has risen to the challenge by offering a cost-efficient and flexible alternative to satellite distribution for live content. IP networks are more readily available, and distribution using IP systems facilitates new ways that broadcasters can monetize their content while enabling deeper insight into the

> **"WE TESTED SEVERAL DIFFERENT SOLUTIONS, AND FROM DAY ONE ZIXI HAS BEEN REVOLUTIONARY FOR US. WE HAVE PRODUCED EXCELLENT BROADCASTS USING CELLULAR NETWORKS FROM PLACES WHERE IN THE PAST IT WAS ONLY POSSIBLE WITH SNG."**
>
> – Krusnoslav Petric
> Head of Operations at MSTV

transport networks. In addition to targeted delivery, the benefits of using IP delivery are further realized as these systems allow for expansion and accommodate future streaming requirements. For occasional use applications, cloud architecture of the IP systems lends itself to efficient utilization of resources with the ability to easily spin up and down software resources in contrast to more rigid satellite and fiber infrastructure. IP systems have their share of challenges such as packet loss, control, and orchestration, which is a concern for broadcasters to adopt these solutions. Zixi's award-winning Software-Defined Video Network (SDVP) allows broadcasters to harness the power of IP enabling ultra-low latency, high quality, and reliable delivery at scale over lossy IP networks.

MSTV is a full-scale multi-camera TV and streaming production capable of delivering live events over IP from anywhere in the world. Pioneers in IP encoding and delivery over 5G bonded networks together with satellite internet, MSTV has recently switched from using SNG trucks and now provides end-to-end IP production and delivery. With a presence in 30 countries and specializing in football, basketball and cricket, actively providing services to various European and Asian leagues such as UAEFA, European Cricket Association, FIBA, and various other regional and national clubs, MSTV offers tailored end-to-end solutions to clients depending on their individual needs. Its full range of broadcast and media services allows it to be a one-stop shop with the ability to answer the requirements of any type of production.

> **"THE FLEXIBILITY OFFERED BY THE ZIXI PLATFORM HAS ALLOWED US TO PRODUCE MORE CONTENT, REACH MORE DISTRIBUTION PARTNERS AND FIND NEW WAYS TO MONETIZE IT."**
>
> – Krusnoslav Petric
> Head of Operations at MSTV

HIGHLIGHTS

RESULTS

The Zixi SDVP scales effortlessly and with the power of the global Zixi Enabled Network we have access to global distribution partners.

- Reduce upfront broadcast prep time from weeks to hours eliminating need to rent SNGs

- Minimum 50% cost saving for single event and exponential savings for a multi day event

- Create virtual bonded network optimized for speed and reliability using multiple unreliable networks

- Multiple days of error free delivery for large scale production over public networks

THE CHALLENGE

Although functional SNG has its limitations and comes at a steep cost regardless of the size of the production, MSTV in the past heavily relied on SNG to transport its primary production feeds to various broadcast partners. Pioneers in IP production, the company is always looking for more efficiencies in its workflows including content delivery, and renting SNG in remote locations meant they weren't always able to meet tight deadlines and had big upfront costs even for smaller events. The operations team at MSTV also required more visibility into the transport workflow which one-way SNG transmission is not able to provide and makes troubleshooting transport issues a serious challenge. They also wanted a more efficient solution that would enable them to reduce cost by leveraging 5G/4G networks and software solutions for encoding, transporting and receiving over readily available IP networks instead of relying on costly satellite infrastructure.

> "SNG HAD WORKED WELL FOR US FOR YEARS, BUT THE SHIFTING LANDSCAPE OF LIVE PRODUCTION AND DELIVERY REQUIRED US TO BE MORE AGILE AND FLEXIBLE, AND IP IS THE ONLY WAY TO GO. WITH THE ADVENT OF 5G AND CLOUD IP DISTRIBUTION, WE WERE OFFERED THE FLEXIBILITY AND COST SAVINGS WE NEED TO BE COMPETITIVE AND PROVIDE A TAILORED SERVICE TO OUR CUSTOMERS."

THE SOLUTION

"The Zixi protocol and its software stack offers unique features such as 5G bonding and patented hitless failover that ensures a reliable error-free delivery using various networks throughput in conjunction. These features are critical to our workflow as we don't always have the required bandwidth available from a single carrier and need to utilize the bonding capabilities with sometimes over 13 connections. Using Zixi as opposed to SNG, the cost of a single event is cut by a minimum of 50% and for large multiple-day events, cost savings are exponential."

MSTV chose to leverage the benefits of Zixi for primary distribution over IP networks shifting from renting SNG trucks for events to using readily available public IP networks. Zixi provided the crucial capabilities of bonding various sims such as 4G/5G, and even at times when available Starlink internet services to form a virtual bonded network optimized for speed and reliability.

Zixi Protocol: Zixi bonding dynamically and intelligently manages the fluctuating bandwidth, packet loss, and latency differences of individual connections in real time to choose the optimal path to route IP packets to their destination. All bonded networks can be conveniently managed in one centralized interface through Zixi's cloud-based ZEN Master control plane. The result is increased reliability from connection diversity, and higher bandwidth when and where needed.

Zixi Enabled Network: The Zixi Enabled Network comprises over 1000 media companies and 400 integrated technology partners globally exchanging live video, creating a powerful acceleration of new content acquisition, business models, and opportunities to reduce cost and generate revenue. MSTV was able to leverage the partner network and choosing an IP encoder that easily met their need in OBS, an integrated partner for encoding streams to IP and transmitting them over Zixi. MSTV also leveraged AWS MediaConnect, a close partner of Zixi to transport streams to various destinations.

HOW IT WORKED

"We ran SNG and other IP systems in parallel with Zixi and tested extensively before switching our operations to the SDVP. We were able to broadcast multiple events without any packet loss as well as demonstrate to our content distributors the reliability of Zixi over SNG that allows us to save cost and provide the flexibility we need."

Since MSTV operations are very dynamic, network capabilities are mainly dictated by the venues where the events are taking place. Where previously a costly SNG truck would have to be rented, MSTV utilizes Zixi enabled OBS software encoder system to encode Zixi streams and transmit to its takers over cellular and public networks reliably and cost-effectively. Its encoding systems are equipped to accept various SIM cards and internet providers and utilize the 5G bonding capabilities to create a virtual bonded network optimized for speed and reliability.

The streams can be sent to a Zixi Broadcaster from anywhere they can be transmitted in the world using the Zixi Enabled Network. With many destinations already Zixi Enabled, it allows for an easy transition from satellite to IP.

THE RESULTS

"Using Zixi and its bonding capabilities has allowed us to stream reliably from remote venues that don't even have internet connections using multiple cellular networks. This kind of production and broadcast would not have been possible without Zixi and its unique capabilities of transmitting reliable streams over various lossy networks bonded together to form a virtual network. We delivered six matches in a row without a single packet loss which is a testament to the reliability of the Zixi. Eliminating SNG from our infrastructure provided us with total control of the broadcast which means our customers have only one finger at which to point."

The Zixi-enabled workflow allowed MSTV to implement a flexible and cost-effective solution enabling it to compete in the marketplace while providing tailored services to the customers that it is known for. With Zixi's robust delivery of content and the power of the global Zixi Enabled Network, MSTV can reach more takers without adding additional cost or requiring any additional infrastructure.

By transitioning off SNG for contribution, MSTV leverages the flexible delivery infrastructure of Zixi's SDVP to easily adapt to future streaming needs with ease, while delivering broadcast-quality content with the Quality of Service and the Quality of Experience that sports fans demand.

ABOUT

MSTV

Full scale Multi Camera live sports TV production - from 2 to 12 cameras - OB vans, livestream. Pioneers in IP encoding and signal delivery over 5G bonded networks together with satellite internet capable to deliver signal from anywhere in the world. Specialised in football, basketball and cricket.

https://mstv.ch

ZIXI

Zixi provides a cloud based and on-premise Software-Defined Video Platform enabling the management, orchestration, monitoring, and delivery of broadcast-quality live and live linear video over any IP network, protocol, cloud provider or edge devices to broadcasters, enterprises, over-the-top video providers, and mobile service providers around the world. Over 15+ years, the Zixi Enabled Network (ZEN) of partners has grown to over 350 OEM and service providers with whom Zixi serves well over 700 customers representing most of the top media brands around the world with 20,000+ channels delivered daily.

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