Secure Broadband TV Solution with Juniper Junos Content and Minerva iTVFusion

Minerva Networks and Juniper Networks Combine to Deliver Linear and On-Demand Television Services over Broadband Networks

**Challenge**
Shifting TV consumer viewing habits and the emergence of new OTT competitors are causing service providers to reevaluate the type of television services they should offer subscribers and the means by which to deliver these services.

**Solution**
Minerva iTVFusion, combined with Juniper’s Junos Content portfolio, expands the video service delivery options available to operators with high scale HTTP adaptive streaming content delivery and industry-leading service and experience management software.

**Benefits**
- Ability to leverage broadband networks to reach new subscribers
- Increased revenues through new multiscreen video services, premium broadband upgrades, and advertising
- More compelling offering relative to OTT video providers
- Lower CapEx/OpEx compared to traditional Pay-TV service deployments

New video compression, streaming, and caching technologies present both competitive challenges and new opportunities for Pay-TV operators. HTTP Live Streaming (HLS) provides automatic bit-rate adaptation so that a common video stream can be shared by devices with different screen resolutions, processing power, and available network bandwidth. These capabilities empower consumers with the ability to enjoy more content choices across more consumer devices.

While leading over-the-top (OTT) service providers were the first to adopt and benefit from these new technologies, more and more traditional Pay-TV providers are embracing them to enable richer services to their existing subscribers (e.g., blended premium TV and Internet video services), and to deliver a new class of television services (Broadband TV) to more subscribers.

**Broadband TV**
A new television service category called Broadband TV is emerging to address the consumer value gap that exists between established premium Pay-TV services and new OTT video offerings. Thanks to new adaptive streaming technologies, operators can deliver Broadband TV services cost-effectively across their broadband data networks.

This new service tier addresses the operator value gap between the high capital/high average revenue per unit (ARPU) premium Pay-TV services and the low capital/low ARPU OTT video services. Providing premium Pay-TV services, like IPTV, is an expensive proposition that involves significant infrastructure investments. Although many telcos worldwide have launched IPTV services and enjoyed considerable success, the return on investment has often been challenging. Conversely, operators receive no direct revenue from customers utilizing OTT video services, other than the broadband subscription itself. To cope with increasing bandwidth demands driven by over-the-top video consumption, operators must still continue to invest in their broadband networks without any offsetting revenues.

By launching Broadband TV (BBTV), a less expensive Pay-TV service tier, combining the best of traditional linear TV with premium VOD and new Internet video services delivered over their existing data networks, operators can capture new revenue streams with limited additional capital investments. Operators already offering IPTV services to their high-end customers (typically 15-20% of their subscriber base) can now offer BBTV services to their remaining broadband subscribers. While service providers without an existing Pay-TV offering, can expand their broadband services to include a premium tier, which bundles video services. For some subscribers, this premium broadband tier could complement a traditional Pay-TV service from satellite or cable.
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In partnership with market-leading vendors such as Juniper Networks, Minerva has integrated and certified a complete Broadband TV management and delivery solution. The best-in-class solution features video encoders, core service management tools, content protection, content delivery network infrastructure, set-top boxes, client applications and monitoring solutions.

The Minerva Broadband TV solution supports linear TV programming with whole-home DVR, cloud-based VOD, Internet content, personal media, and a selection of widgets. Consumers can enjoy this broad range of services and content sources through a single, responsive, and intuitive user interface, while service providers can capture new revenue streams with minimum additional capital and operating expenses.

Broadband TV Services

Linear TV
Operators can offer live local channels, which are combined from multiple national sources such as ABC, CBS, NBC, and Fox. Complementary premium linear programming networks can be licensed and sourced from various sources. Additionally, regional operators can supplement these channels with “hyper-local” content (e.g., high school athletics, local weather/traffic cams, student-run TV stations, or community bulletins). Linear channels are presented via a unified, responsive electronic program guide (EPG).

Whole-Home DVR
With whole-home DVR, subscribers can record and play back a program from any set-top box in the home. Subscribers enjoy great flexibility, while operators only need to deploy a single DVR set-top box per home. With the Minerva Broadband TV whole-home DVR solution, consumers can:
• Simultaneously record and play back up to three video streams
• Schedule, update, and delete recordings from any television
• Pause, rewind, fast-forward recorded shows
• Play a recorded show on multiple televisions and control the playback individually
• Remotely manage DVR programming from any browser

Video on Demand (VOD)
The Minerva Broadband TV solution features Avail-TVN’s AnyView VOD content service. This white-labeled service comes bundled with content rights, metadata, trailers, posters, and digital rights management, allowing operators to:
• Attract subscribers with compelling premium content
• Boost revenue through increased transactional business
• Maintain a direct relationship with customers
• Provide a competitive offering to OTT service providers

Internet Content
The Minerva platform enables operators to easily add Internet content sources to their offering. Popular services such as YouTube, Picassa, and MetaChannels have already been integrated with the Minerva platform. New Internet and hyper-local content sources can be quickly added through a set of standard interfaces. Similar to the live TV options, service providers can accumulate and distribute hyper-local video content (e.g., recorded school sports and activities, public events, or community messages). These assets can be made available 7/24 on subscriber’s TVs.

Figure 1: The Minerva Broadband TV solution with Juniper Networks Junos Content Encore as content delivery platform
### Table 1: Minerva-Juniper Broadband TV Solution Features and Benefits

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<th>Features</th>
<th>Benefits</th>
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| **Minerva Networks iTVFusion**    | • iTVFusion allows operators to view and manage the customers in their system.  
| Customer management              | • Service providers can add new subscribers, enable/disable subscriber accounts, and specify auto provision count (which is the maximum number of devices that can be assigned to the customer).  
|                                  | • Service providers can identify the customer’s region, disable/enable subscriber services such as PPV and VOD purchases, specify credit limit for impulse purchases, create/reset/override a customer’s PIN code, assign channel packages, SVOD packages, and caller ID.  
|                                  | • Operators can also modify services for existing subscriber accounts.  
| Device management                | • iTVFusion allows service providers to manage entitlement information about the STBs and other consumer devices deployed in the field.  
|                                  | • Operators can easily add a new device to the system and modify the entitlement for an existing device.                                                                                              |
| VOD asset ingestion              | • The iTVFusion back-office provides a complete set of tools to ingest VOD assets.  
|                                  | • Assets are automatically loaded into third-party video origin servers that are synced with Juniper Networks® Junos® Content Encore.  
|                                  | • Corresponding metadata is loaded into the Minerva platform and then presented to subscribers within the VOD client application.                                                                 |
| Channel management               | • The channel management feature lets operators define a channel lineup for the entire service area or for each region within the service area.  
|                                  | • Operators can easily assign Electronic Program Guide information.                                                                                                                                   |
| **Juniper Networks Junos Content**|                                                                                                                                                                                                          |
| HTTP video and adaptive stream   | • Optimized design yields industry-leading performance and scalability.  
| caching optimization             | • Requires fewer servers, less power, space, and cooling.  
|                                  | • No need for siloed content delivery infrastructure.  
|                                  | • Equates to lower costs, simplified management, and maximized price/performance curve.                                                                                                               |
| Intelligent hierarchical caching  | • Intelligently and automatically aligns content with the most appropriate storage media.                                                                                                               |
|                                  | • Allows tracking the popularity trends for content object as popularity changes, ensuring an optimal balance of performance and efficiency.                                                            |
| Content ingest management        | • Allows operators to keep content synchronized between content caches and origins.                                                                                                                     |
|                                  | • Assets published at the origin are automatically discovered and downloaded by Junos Content Encore.                                                                                                   |
|                                  | • User experience is improved by pre-populating and pinning content with a highly scalable content ingestion solution for sophisticated, hierarchical content delivery network (CDN) deployments. |

### Summary—Secure TV Broadband Solution with Junos Content and iTVFusion

Consumers worldwide are looking for better value from their home entertainment services. While traditional Pay-TV has long filled this need, its high price and inflexibility are leading many subscribers to consider alternatives. Broadband TV, a service that can be delivered over data networks, can appeal to consumers seeking a cost-effective, flexible, and compelling television alternative. Built on an HTTP-based video delivery infrastructure, this new offering using Juniper Networks Junos Content solutions and Minerva iTVFusion can expand the operators’ reach and increase ARPU from existing customers, with minimal investments.

Whether an operator has already delivered television services or not, the Juniper-Minerva Broadband TV solution enables operators to quickly and cost-effectively launch and deploy a new Pay-TV service tier.

### About Minerva

Minerva is a leading provider of carrier-class solutions for the delivery of television services over IP networks (TV-over-IP). Over 290 network operators worldwide have deployed Minerva’s software platform for next-generation TV entertainment and communications services. For more information, visit [www.minervanetworks.com](http://www.minervanetworks.com).

### About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at [www.juniper.net](http://www.juniper.net).