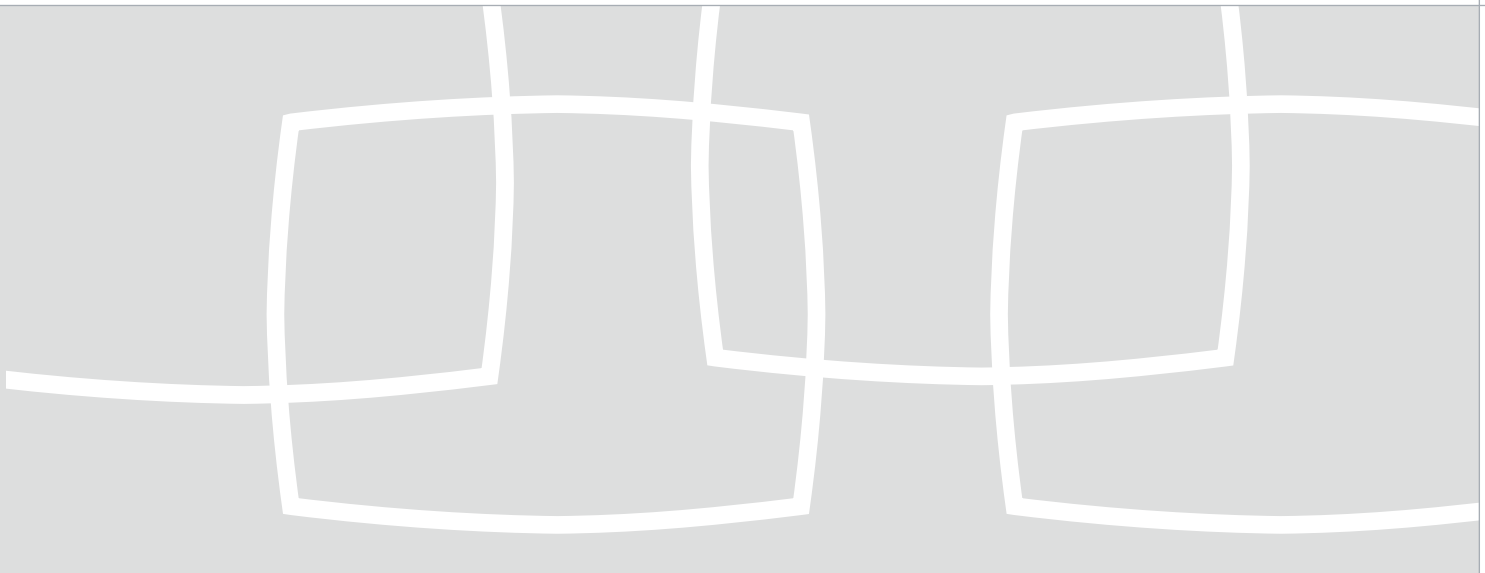


Today, digital network insertion is essential to support the ever-increasing number of digital and high-definition networks and to cope with the competitive imperative of simulcasting.

The Transition to All-Digital:

Making Your Way (And Your Numbers) in the Simulcast Landscape



When SeaChange® introduced the first digital-into-digital ad insertion system, a typical cable system was providing only a handful of ad-supported digital networks, most of them niche; digital subscriber penetration was running under 20%, and high definition was something we all only dreamed about. The decision to enable spot insertion for a digital channel was a difficult one that required carefully weighing details on cost, complexity, and potential reach. In most cases, it didn't make sense.

Today, digital network insertion is essential to support the ever-increasing number of digital and high-definition networks and to cope with the competitive imperative of simulcasting*.

The challenge is no longer determining which digital networks to make insertable, it's how to support all formats in a simple, powerful way that leaves plenty of room for growth. SeaChange can get you there with Spot digital inserters, and show you how to save money along the way.

Conversion to Digital Insertion Pays for Itself!

SeaChange's new Spot digital inserters cost between 25% and 90% less than analog inserters (depending on channel density). And monthly service fees for Spot digital inserters are 35% to 75% less than service fees for analog inserters.

They integrate seamlessly with your existing SeaChange ad insertion system. But they're radically improved because they take advantage of enterprise computing technologies like use of non-proprietary hardware, standard file transfer protocols, and GigE networking to provide huge advances in cost, channel density, reliability, and maintainability.

***Simulcasting defined:** The practice of transmitting networks in analog and digital formats, in standard- and high-definition formats, and in some cases in all three formats (analog, SD, and HD) simultaneously to support the mix of standard- and high-definition digital cable subscribers as well as subs who have not made the move to digital. Simulcasting is widely viewed as a starting point in the transition to the all-digital future.

Those dramatic reductions in cost mean that if you convert your operation to digital insertion using SeaChange Spot inserters, your service fees will drop and you will recover the capital costs in two years or less!** Best of all, the file formats, encoding rates, and GigE connectivity are completely compatible with SeaChange’s VOD advertising solutions, giving you a head start on the technology for that new revenue opportunity.

Ad Insertion in a Simulcast Environment

From an advertiser’s perspective, simulcasting is an irrelevant technical detail that should have no impact on the established working of the cable spot advertising they’ve come to count on to reach their audience. What that means to you is that regardless of the format or formats in which a network is being delivered:

- Identical spots must be delivered across all formats.
- Quality of spots must be on par with the quality of the surrounding content.
- Verification must capture all the spots that were actually delivered, in all formats.

Today, there are a number of options for adapting your ad insertion operation to a simulcast environment. For lowest overall cost, best spot quality, simplest operation, and most forward compatibility, you can operate with digital insertion only, encoding all insertable networks to digital *before* ad insertion, then decoding networks that require analog simulcast *after* ad insertion.

This approach simplifies the ad insertion system requirements and enables a single path for content preparation and propagation, insertion command and control, and verification. Further, it improves the overall quality of inserted spots. Though it may require you to encode and decode some feeds, most networks are already available in digital format, so the actual amount of encoding required

**Using a 48-channel Spot digital inserter as an example, a few quick calculations show how you can recover your capital investment from service cost savings in about 2 years.

	CAPITAL COST	SERVICE COST
SeaChange Spot 2048C™ 48-channel digital inserter	\$27,976	\$10/chan/month
Legacy analog inserter	n/a	\$34/chan/month

$(\$34 - \$10 \text{ per channel per month}) \times 48 \text{ channels} = \$1152 \text{ service cost savings per month}$
 $\$27,976 \text{ cap cost} \div \$1152 \text{ service cost savings per month} = 24.28 \text{ month cap cost recovery}$

before ad insertion should be limited. And the amount of decoding will be less all the time as more channels are moved over to digital.

What's best about this approach is that converting now to digital-only insertion positions you perfectly for the all-digital future. You can stop throwing money away maintaining analog insertion equipment that will soon be obsolete and start now enjoying all the advantages of a digital solution.

As an alternative, you could operate with analog and digital insertion systems side by side, with a digital insertion system that handles both standard and high definition. Such a solution results in a lot of equipment that is expensive and complicated to maintain. It requires parallel paths for analog and digital content preparation and propagation as well as for insertion command and control. And you have to shoulder the burden of consolidating data from both systems to provide a complete verification picture for your advertisers. The only good news is that any investment you make in new digital insertion gear is a step on the path toward the all-digital future.

Or you could operate with analog insertion only, and encode networks that require digital (SD and/or HD) simulcast *downstream* of ad insertion. This approach simplifies the ad insertion system requirements in a simulcast environment and enables a single path for content preparation and propagation, insertion command and control, and verification. However, it introduces new costs and complexities to support the decode and re-encode of some feeds. (Today, typical cost of a decoder averages about \$1,000 per channel, and cost of a streaming encoder averages about \$1,500 per channel.)

Worse than the new costs, though, is that sticking with analog-only insertion does nothing to help you prepare for the all-digital future – it simply delays the inevitable. If you need to add more inserters, you're spending money on obsolete technology. Plus that analog gear costs more to maintain, so all the money you spend waiting for all-digital is essentially thrown away when the switchover occurs.

The Hidden (and Not-So-Hidden) Benefits of the All-Digital Approach

We've already explained how converting to digital ad insertion can save you enough in service costs to pay for itself. And it's clear that digital insertion provides the best quality spot insertion and a powerful, flexible, forward-looking solution.

Making the move to Spot digital inserters enables you to take advantage of the new SeaChange Spot+ System™ for fault resiliency and high availability. The Spot+System protects your ad insertion operation from single points of failure. It provides the highest available levels of redundancy and failure protection for your insertion operation and it protects you from lost revenue due to equipment or network link failures.

Getting There From Here

Converting to a digital ad insertion environment is straightforward. The new equipment connects directly into your existing Spot library and uses the same traffic and billing system. To make the transition, you'll need to:

- Replace analog inserters with new SeaChange Spot digital inserters.
- Add splicers/remultiplexers to splice the inserter output into digital feeds.

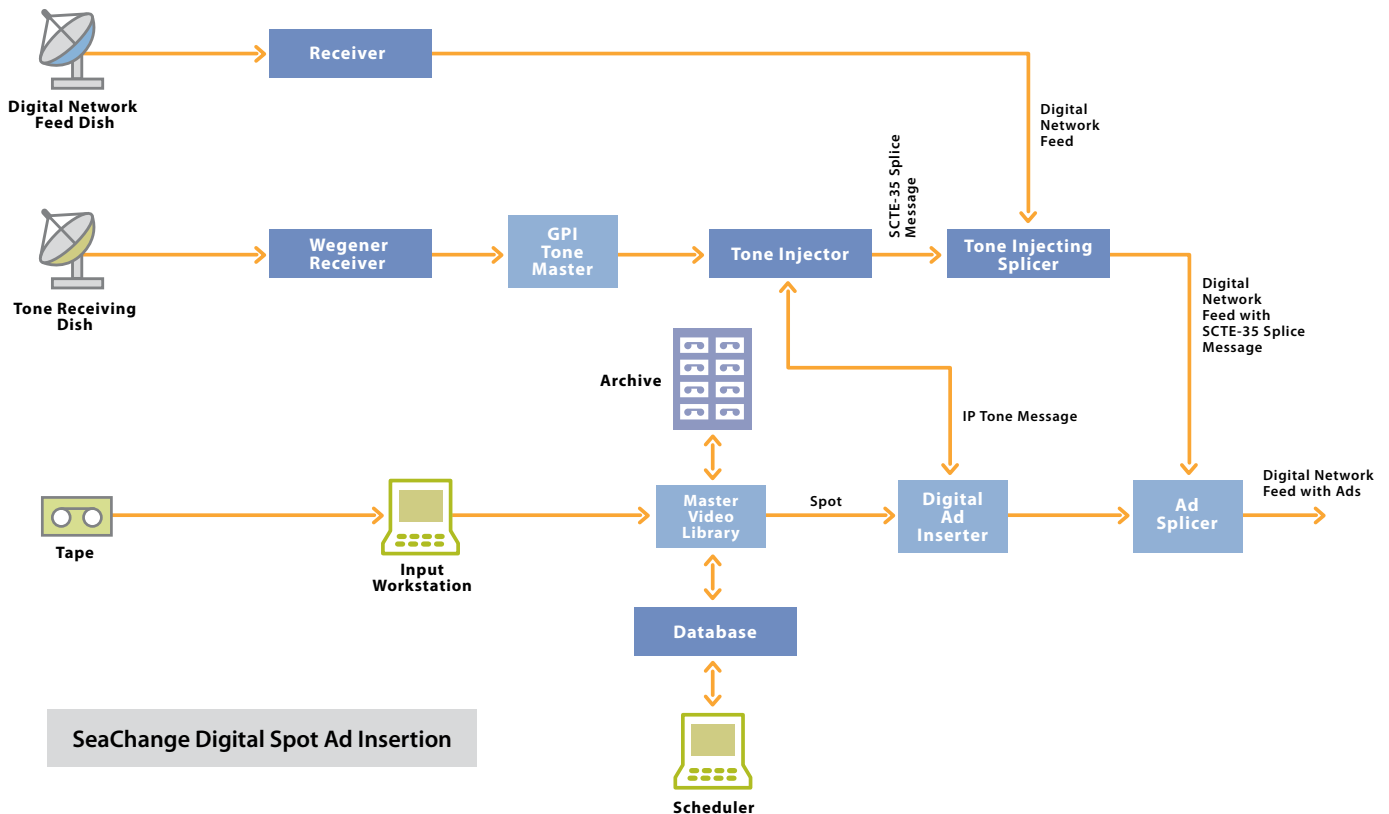
You can purchase remultiplexors from many vendors, including CASA, Terayon, BigBand, and Harmonic. They replace the functionality of the video switch used in analog systems today. Although remultiplexors can be complex and expensive, they are usually the responsibility of cable operations, not ad insertion.

- Add the new SeaChange Digital Tone Suite™.

The Digital Tone Suite converts cue tones into SCTE-35 insertion messages and splices them into digital network feeds to trigger ad insertion. It also provides a redundant path for insertion triggers to improve fault resiliency.

- Replace the encoding station with the SeaChange QuickSilver Input Workstation™.

The Input Workstation enables content encoding, metadata creation, editing, and validation, and upload to the video library. Content ingested through the Input Workstation is suitable for playout through both the Spot digital insertion system and the VOD system.



Most parts of the system work just like the Spot insertion system you've been using, so your operators don't need any additional training to make it productive right away. But you should plan on some training for your engineers – there's a lot of new technology here!

Budgeting for the Conversion

With simulcasting and the increase in the number of digital networks driving the need for digital insertion, there's no time to wait before you convert. And with the low cost of SeaChange Spot digital inserters, there's no reason to. Get started today on a plan to put Spot digital inserters in your budget and into your shop.

As a rule of thumb for budgeting, use the following guidelines for a 48-channel insertion system:

- Command and control: \$2,000 per inserted network (supports multiple zones in a market)
- Insertion: \$1,500 per inserted network in a single zone
(assumes that cable operations carries the cost of the splicers, and ad insertion carries the cost of the splicing license)

Contact your SeaChange sales representative for a detailed quote.

What Comes Next?

Converting to SeaChange digital Spot inserters is the perfect way to maximize revenue now and prepare for the all-digital future. We also have solutions for dynamic, targeted advertising in linear and VOD television that can help your advertisers continue to reach audiences no matter how their viewing habits change. Count on SeaChange to help you keep up with technology and make the most of your revenue opportunities.

