

# **Remaining** Profitable

Reducing the Cost & Complexity of Cable Ad Delivery

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# Remaining Profitable:

## Reducing the Cost & Complexity of Cable Ad Delivery

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# 1. Introduction

New television consumption habits are disrupting the business of media delivery, and cable ad insertion is no exception. As the television landscape changes with cord-cutting, viewers opting for online video, and advertisers shifting their spending patterns away from traditional television advertising, one thing has become clear: cable companies need to reduce the cost and complexity of local ad insertion to keep local ad services profitable.

Yet, as if these challenges weren't already enough, the number of services cable companies provide is increasing, meaning infrastructure must readily adapt without incurring significant costs associated with scaling these services. Older, more complex systems create opportunity cost by limiting the ability to quickly and easily enter new markets and test new revenue opportunities.

This paper explores how the inefficiencies inherent in the old ad delivery paradigm are weakening your bottom line and preventing your business from being as agile as it needs to be to survive ongoing changes to the cable market. We will look at how the majority of current ad delivery systems are overly complex and are less reliable than current systems.

We will show how recent advances in computer technology and cloud-based infrastructure have made it possible to reduce the cost and complexity in delivering local ads, while increasing the ability to scale quickly, easily, and at lower cost than previous systems.

## 2. The Changing Financial Picture

Cable companies generate revenue from their television services by charging subscription and equipment rental fees to subscribers, and by selling local ads that get inserted by the cable provider. In the past, cable companies were able to increase their subscriber fees to address increases in their costs, such as higher retransmission fees or simply to increase profits.

However, with skinny bundles and cord cutting, increasing subscriber fees would tend to accelerate the process of subscriber loss. As subscriber losses continue to impact cable providers, there is renewed interest in making these businesses as efficient as possible.

One area that has strong potential for cost reduction is in the process of inserting local ads. Faster computer processor speeds have made it possible to reduce the amount of equipment required, providing cost savings in maintaining and managing these systems.

In addition, cost savings can be combined with better scalability and a lower incremental cost per channel, making it possible to experiment with new services and channels without significant up-front equipment costs. In addition, lower cost infrastructure makes it possible to offer services that would have been unprofitable in the past, enabling cable companies to add small but significant revenue streams to their current services.

### 3. Complexities Within the Previous Paradigm

If you are like many cable operators, you have a system that utilizes several devices in the ad delivery process, including splicers, statmuxes, encoders, ad servers, monitoring systems and management servers. While many of these functions now consist of software running on generic processing hardware, most exist as separate devices running different software applications.

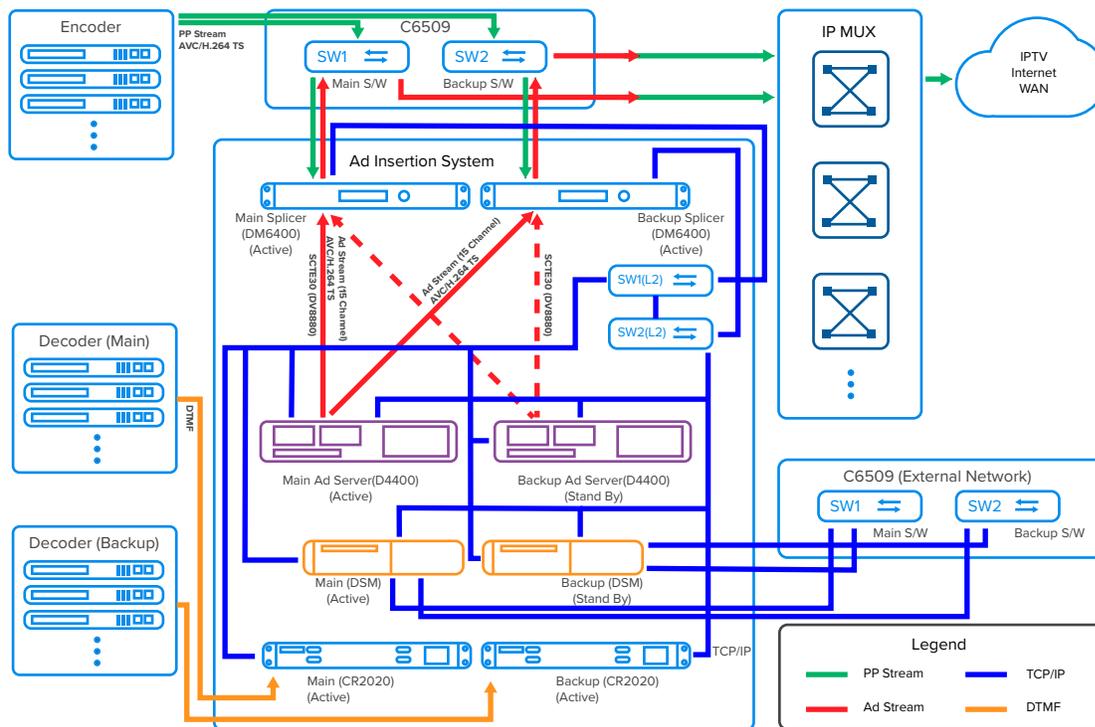


Figure 1 - A Typical System Configuration in the Previous Paradigm

For example, splicing and ad management were typically performed on separate devices. Standards evolved (such as SCTE-30) that improved communication and compatibility between these devices. While this enhanced interoperability and made these systems more reliable, it didn't address the basic fact that these were two separate systems that depended on each other to get the job done. If either of these components failed, the whole system failed, so to prevent this, every component had to be redundant.

In addition to the fact that each of these components is a potential point of failure for the overall system, all must be managed and maintained. Each of these systems requires space, power, and air conditioning. Software upgrades must be applied over the lifetime of the system, and this often leads to downtime situations when a new software release for one piece of equipment proves incompatible with another connected system. Every security update and minor system upgrade is an invitation for bad things to happen, and more devices means more software upgrades are required to stay current and secure.

With all the ways an ad insertion system can potentially fail and cause revenue losses for the cable company, monitoring systems have become a vital component in the ad insertion model. Since every minute of ad insertion downtime results in a loss of revenue, monitoring systems became important to not only detect failures that occurred, but to reduce the length of time the system is down.

In another example, an operator might see that the video signal has gone offline or that commercials have stopped playing on a channel, but which component of the system is responsible? A good monitoring system can usually provide information that can help identify the source of a problem and shorten downtime in a complex system, but this comes at the cost of purchasing and maintaining a separate system just to watch the other systems.

Scalability is also a concern in the old model because increasing the capacity of one component often impacts the size of other associated devices in the system. While one device might have a capacity of 10 channels, another might support 50 channels. Adding new channel capacity might impact several devices in the system at once, potentially leading to substantial changes to the overall system architecture and making it costly to experiment with new businesses that require new channel capacity.

Although this architecture functions and provides ad insertion for cable companies today, the cost of owning and maintaining this type of system has become increasingly prohibitive as these costs have become a higher percentage of ad revenue. This isn't because these systems cost more than they did when they were purchased, it is because these systems were purchased when cable distribution was more profitable than it is today. As declines in per channel revenue puts more pressure on containing costs, systems capable of doing the same work for a lower cost are needed to compensate for reductions in subscribers and higher programming costs.

## 4. Leveraging Cloud Computing Technology

If we consider the highly inefficient traditional broadcast equipment chain described above, it is easy to see how moving these functions into the cloud can dramatically reduce the costs and complexities of the solution. Cloud computing, by definition, is the sharing of resources to achieve coherence and economies of scale over a network. Cloud computing is a service, rather than a product, where information is provided to devices as a utility (similar to an electricity grid). Clouds can be public, private or hybrid. Cloud computing centers on maximizing the efficacy of the shared resources. Cloud resources are often shared by multiple users as well as dynamically reallocated per request. Maximizing computing power reduces the environmental footprint because less power, air conditioning and rack space are needed to run systems.

Additionally, cloud computing provides multiple users access to a single server to retrieve and update data without the purchase of licenses for separate applications. Migrating to the cloud allows users to move away from a traditional CAPEX model (buy the dedicated hardware and depreciate it over time) to an OPEX model (pay for cloud computing as a service). Cloud computing allows companies to avoid upfront infrastructure costs, and paves the way for solutions that provide future-proof technology, which continually increases efficiency.

An ad insertion workflow generally requires additional components as part of the overall solution. These typically include encoders, traffic systems and sometimes external splicers. When a new product is introduced into the market, it often lags behind legacy products in terms of connecting to other systems.

Most of these legacy server-based functions (transcoding, content storage, and database) are ideal candidates for a cloud computing service solution. Furthermore, redesigning the traditional broadcast equipment chain to work within the cloud will actually increase the reliability and performance of the overall solution. This is because cloud service providers (such as Amazon) deploy sophisticated architectures and tools to control and monitor their network and ensure service-level agreement (SLA) compliance.

Cloud computing and infrastructure also has a role to play in simplifying the architecture and improving reliability. By moving configuration and management to the cloud, you can deliver on the requirements of infrastructure servers, network storage, and redundancy for a fraction of the cost of providing these services internally. In contrast to buying and maintaining redundant local management servers, cloud-based infrastructure provides a pay-as-you-go approach which continues to grow and modernize as new technology enters the market.

Scaling up the system is simpler because of the virtually limitless capacity of the cloud. When additional channels or services are needed, edge devices are simply added and connected to cloud services without consideration of infrastructure capacity. In addition, several other components that make up an end-to-end ad delivery workflow, such as encoders, are also available as cloud applications that can scale at will.

## 5. SAAS - Changing the Financial Model

One of the most important shifts in the ad insertion model enabled by cloud computing is the idea of Software-as-a-Service or SAAS. As cable businesses come under increasing financial pressure, there is a need to experiment with new business models and concepts that can make up for revenue shortfalls or take the business in new directions that have the potential for expansion.

Typical budgetary and procurement processes can have a strong inhibitory effect on experimentation of new business models by increasing early profitability requirements and the need to make each attempt a “sure thing.” To test a new concept in the traditional model, equipment had to be acquired to test the concept, and if the concept didn’t work, the equipment would go unused. In the event the concept worked, but not at the scale originally envisioned, excess capacity would lay fallow afterward. In either event, significant resources would be wasted and would reinforce the need for future experiments to be a “sure thing.”

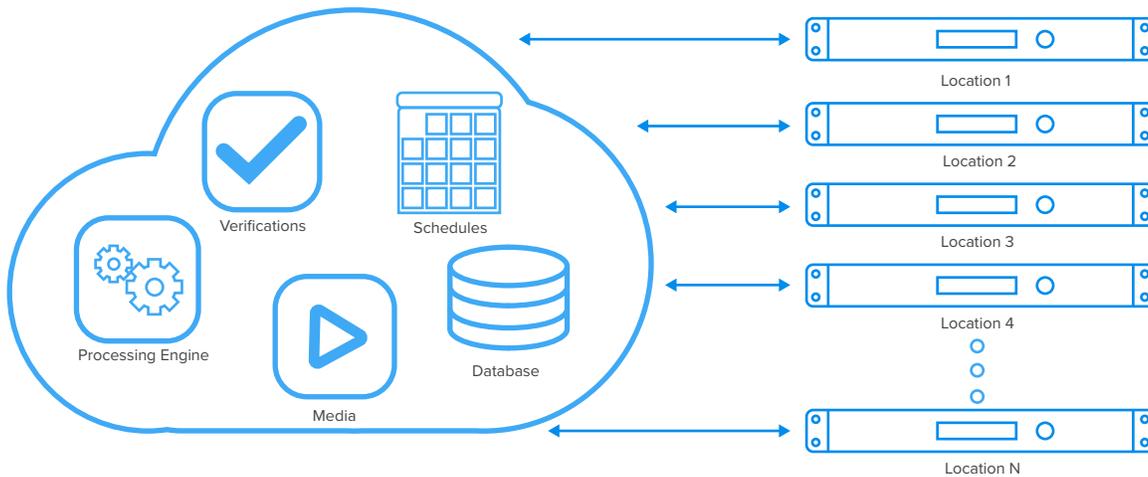
In the SAAS model, the systems needed to grow capacity or test new concepts could be purchased out of the operational budget and/or on a temporary basis. This significantly reduces the risk when testing new concepts because the investment period is limited to the duration of the test. So by simply changing the financial model, the barrier to entry for new businesses has been reduced.

The SAAS model also makes it easier to keep systems current. In the previous model, updating, replacing, or adding capacity to an ad insertion system is usually a lengthy process of determining need, selling it to management, getting it included in the next budget, and waiting for budget approval and the start of the new fiscal year. And with tighter budgets, these projects are often not improved until the systems are failing and losing ad revenue, or their systems are so old that they cannot receive the latest security updates.

In contrast, cloud infrastructure and software are continually being updated to provide the latest improvements to the software and security. And if the SAAS vendor provides edge devices as part of the SAAS arrangement, the entire system would remain current because the SAAS vendor will want to enable that latest versions of software on their customer's systems.

## 6. Scalability

One method cable companies are employing to increase revenue is by adding more services, which increases the channel count and capacity requirements of the ad insertion infrastructure. As the number of insertion channels increases, so does the demand on back-end infrastructure. Processing, storage, security, maintenance, bandwidth and redundancy all have to be taken into account whenever new locations, additional channels, or new services are added using a traditional client/server infrastructure. With the virtually unlimited resources in the cloud, additional capacity is readily available at a moment's notice.



## 7. Financial Flexibility

In the old paradigm, adding new services required investments in equipment that would become idle if less capacity was needed in the future. In addition, extra unused capacity was often purchased so that new services could be added quickly in the event of a new opportunity. In either case, wasted excess capacity made cable ad insertion less efficient and profitable.

With the ability to increase or decrease capacity on short notice, a SAAS ad insertion solution makes it possible to pay only for the services required in that moment, thus giving the cable provider the ability to eliminate wasted resources and excess capacity. Additional channels can often be added as additional software licenses until the capacity of the device was reached,

## 8. Implementing the New Paradigm Today

With all the advantages offered by the latest integrated computing technology and cloud infrastructure, it seems like an obvious choice to make a move in this direction as soon as possible. The key is finding a partner that has both the vision of the directions technology is taking and the experience to know how to implement it reliably. OneVigor is a company that has both.

OneVigor has been delivering content delivery and ad insertion systems for over 15 years. Its founder, Magnus Sorlander, is the visionary behind PitchBlue, which delivers content to over 1700 local TV stations in the US, and Advertio, which delivers thousands of channels of cable ads on a continuous basis. Vigor's platform leverages the cloud for both content and ad delivery, which culminated in being selected to manage and deliver content for all PBS stations in the US in 2018.

After looking at the weaknesses in the old paradigm and understanding advances in current technology, OneVigor developed Advertio Cloud, which would be a synthesis of OneVigor's cumulative experience in ad insertion, combined with the latest in cloud computing. It is currently deployed in the field and is successfully delivering ads at several cable headends.

Advertio Cloud was designed to lower costs by leveraging these advances in computing in some innovative ways. First by utilizing cloud services to remove the infrastructure and maintenance costs of maintaining a localized server infrastructure, we reduce or eliminate the structural costs of command & control, redundancy, maintenance, and support.

These capabilities are then provided as a single service with a lower cost than if these services were provided individually using your company's infrastructure. Secondly, Advertio Cloud uses the power of the latest computing hardware and clever software technology to condense an ad server, splicer, multiplexer, asset manager, and monitoring onto a single server. This not only reduces the number of devices required to deliver these services, it removes the complexity of powering, maintaining, and networking multiple servers, often in remote locations. A single Advertio Server can deliver ad services to up to 100 channels, providing a lot of capability in a small footprint.

OneVigor has leveraged its experience in delivering ad insertion systems by introducing Advertio Cloud with a full suite of integrations with most of the key components of a complete ad insertion workflow. It is a standards-based product that avoids proprietary technology that would get in the way of playing nice with others. Advertio Cloud has successful integrations with most of the systems commonly used in the market today, and we continue to add support.

Meeting the financial and technical challenges of a rapidly evolving industry like cable distribution is never easy, but by utilizing the latest technology and cloud services, these challenges can be met and possibly turned to your advantage. The key is to find a partner with the vision to successfully navigate through these changes and puts you in the best position to benefit.

If you would like to know more about Advertio Cloud and how it can help you reach your goals, visit us at [www.onevigor.tv](http://www.onevigor.tv), or call us at (866) 748-4467.