

# Unlocking the data loop for broadcast media

Artificial intelligence gives broadcasters the tools to deliver more ad customization and dollars



Television advertising first appeared in 1941 and, while the art of advertising has changed dramatically, the industry still uses metrics based on Nielsen aggregate measures. But artificial intelligence is set to remake broadcast media, and change the way billions of dollars are spent.

Television is a powerful awareness tool that allows brands to reach millions of consumers quickly and effectively. Zenith, an advertising measurement company, estimates that \$191.36 billion USD will be spent on television advertising by 2020. That is a sizable market, but it is also threatened by spending on internet and social-media channels. Many advertisers see social media delivering a more targeted, qualified audience. In addition, television itself is being disrupted by large platform companies providing new streaming services that have the benefit of a direct connection to customer preferences.

## Current state of broadcast

The biggest revenue source for broadcasters continues to be advertising sales. But new market entrants can offer better data analytics with more targeted ads, because they know exactly who is watching, what they have viewed in the past, and are better able to determine a viewer's gender, age, and interests. By contrast, traditional Nielsen ratings provide only a scattershot sample of the audience.

Broadcast media need to deliver a more targeted and robust advertising experience for brands. Better information on the audience demographics and analytics will help advertisers home in on the consumers they want to reach. While Nielsen

ratings are one measure of a show's appeal, broadcasters need to demonstrate other characteristics of an audience.

As competition grows for ad dollars and viewers, broadcasters also need to develop more compelling content to sustain viewership. With multiple viewing screens available, there is an exponential increase in the demand for quality content from consumers. But it is about developing the content that meets these new consumer demands. And now broadcasters are facing competition from companies such as Apple and Google.

Developing content is a significant investment with considerable risk. Broadcast media will need to find savings in other areas of the business to boost their spending on content. Finding ways to improve and streamline internal operations will lead to the production of content advertisers want to fund.

## Leveraging AI to deliver content and audience

Artificial intelligence (AI) can help broadcasters take advantage of all these opportunities. In its simplest form, AI is a labeler of information, and broadcast media can teach it to label information that is important to them, such as speech and crowd noise, to provide insight into the content.

For example, Computer Vision, which obtains information from visual data, and Affective Computing, which simulates human affects, can level the playing field against competitors with more direct connections to viewers by analyzing the audience and then guiding the creation of compelling content.

Broadcasters are already experimenting with options that give them more data. For example, the CBS All-Access option gives viewers exclusive content which, in turn, provides the company with valuable audience information and incremental revenue.

AI can also map multiple devices to an individual and household. It can then correlate online behavior with broadcast viewing. This means broadcasters can analyze online activity during live events, such as the Stanley Cup or Super Bowl. It is powerful data to provide to brands.

AI can also be used in day-to-day operations to automate processes and be more efficient. Workflow, content management, processing, interpretation, and video quality assessment can all be supported using AI. For example, AI can scan a live event and capture the footage based on the crowd cheers, rather than having an editor review the entire match to prepare the highlights. These clips can then be uploaded to digital channels more quickly to enhance the viewing experience.

## Lights, camera, OODA

**Observe:** Computer Vision compiles information on viewing habits of the audience and provides data.

**Orient:** Create labels to identify key pieces of information or content that will help AI learn and recognize patterns.

**Decide:** Review the key data points to determine the audience's preferences.

**Act:** Develop content that speaks to particular demographics and attracts advertisers with a more concise viewership definition.

## Deploying the data loop

Broadcasters know AI will be critical, not only to their revenues but also their long-term viability. Unfortunately, many aren't clear where and how to best deploy this technology. A key to harnessing AI is to realize that you are looking to use the "data loop." The power of AI comes from its ability to accurately label things. The accuracy of this process is improved by feeding more examples and data into the algorithms. AI models are incrementally trained by looping incorrectly labeled output back into the model. A business' ability to identify and rapidly traverse these data loops are the key to success.

It's a concept originally used in the Korean War. United States Air Force Colonel John Boyd described the essence of his superiority with the term "OODA loop" – a cycle of Observe, Orient, Decide, and Act. Colonel Boyd applied the concept to battle but the OODA loop also provides a core strategy to understand and exploit the potential of AI. Businesses identify situations in which they can Observe (collect and refine data), Orient (understand and label that data), Decide (make a decision on that data), and Act (take action). From the action, they feed back into the beginning of the loop, back to Observe, and then traverse the loop faster and faster.

## The value of data

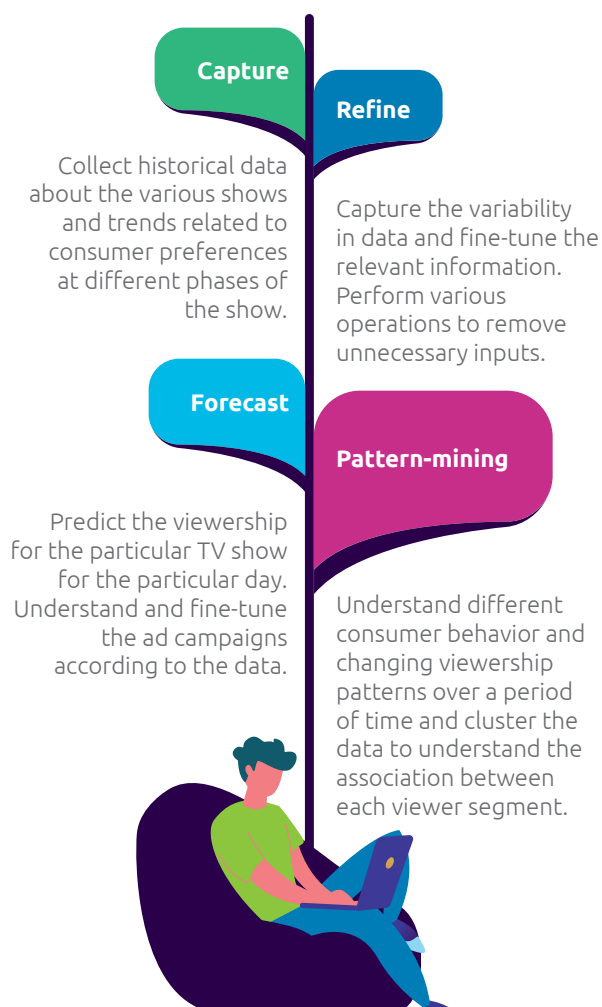
Advanced analytics will drive the next generation of advertising sales. Moving the targeting needle only slightly can result in a multi-billion-dollar impact for broadcasters. Machine learning can find patterns in data to build models that predict future outcomes; the trick is having data that can feed the loop.

The first step is understanding that AI is a bit of a misnomer, because there is not really much intelligence involved. AI relies on inputs to execute instructions or scripts. It is the data that will bring the next level of advertising to broadcasters.

Data is needed to drive the machine-learning loop. Broadcasters gather data from a variety of sources, including linear, structured, unstructured, and third parties. The advertising forecasts will only be as accurate as the data provided to the system.

AI is a collective term for the capabilities shown by learning systems that are perceived by humans as representing intelligence. Today, typical AI capabilities include speech, image and video recognition, autonomous objects, natural-language processing, conversational agents, prescriptive modeling, augmented creativity, smart automation, and advanced simulations, as well as complex analytics and predictions.

### Machine learning can help forecast viewership based on four main inputs:



This kind of contextual advertising is made possible by machine learning and quality data. It takes data sources and integrates the inputs, curating the information and then reporting on the results. Feeding only quality data into the system will deliver a

market advantage for speed and accuracy. Machine learning will also be able to forecast advertising impressions – the backbone of how advertising is valued. For example, shows can be segmented based on viewership data from Nielsen and other data sources. It can also work for trend analysis to mine for patterns and find associations between shows using demographics that appeal to brands. Forecasting accuracy will improve with more data points in the system.

### Perform AI

Capgemini's Perform AI is a complete portfolio of AI services, enabling clients to move beyond proof of concept to pragmatic delivery at scale, with real-world impact-enhancing operational excellence, growth, performance, and business innovation. By responsibly and ethically infusing AI technologies across their operations, companies can achieve business transformation through greater operational efficiency, boost sales and loyalty through a human-centered customer experience, perform asset risk analysis, detect fraud, ensure regulatory compliance, and augment employee productivity. And ultimately, Perform AI can help companies reimagine their business in the "AI-first" era.

### The data loop and broadcast

Machine learning and AI will transform the delivery of advertising for broadcasters. It will add more value and help brands target a more qualified audience. It will be built on a backbone of data and how the information is calibrated in the data loop. Applying OODA will help improve the quality of the outputs and improve targeting. Ultimately, broadcasters want to use tools to learn from consumer behaviors and deliver the right advertising to the right audience. As content development continues to accelerate, television continues to connect with a broad audience. AI reduces operating costs to help fund content development. The viewers may have more options but, by using data to customize the customer experience, broadcasters deliver for both their advertisers and their audience.



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### For more details contact:

**Mark Kirby**

Chief Technology and Innovation Officer/  
Perform AI Leader

*[mark.kirby@capgemini.com](mailto:mark.kirby@capgemini.com)*

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