AI in Advertising and Increasing Your ROI

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Abstract

Artificial Intelligence solutions are impacting every aspect of the Media and Entertainment industry and advertising methodologies are fertile ground for the rapidly changing atmosphere around AI. Companies must learn to quickly adapt and adopt new Adtech or they will face losing market share, inability to effectively target their audiences and missing out on the value of optimizing what is often the primary monetization activity for their businesses. This paper will outline the challenge as well as some of the key examples of how AI is revolutionizing advertising related monetization. In addition, this document will cover how artificial intelligence is beginning to completely reinvent the way organizations are able to advertise and will touch on the future possibilities of AI and advertising.

THE IMPACT OF AI ON ADVERTISING

I. Trends in Artificial Intelligence

Artificial Intelligence is an often misrepresented term that can mean many different things depending on how it is used. For the purposes of this discussion, we will define artificial intelligence very broadly. It can mean anything from a fully autonomous system that is dynamically learning, improving and interacting with other people or systems to something as specific as a single activity that has the capability to improve on its own, like a Pandora-like service that improves based on direct user intervention.

Companies are specifically looking at how they can use AI systems across their businesses to better understand their content, their customers and external activities that may directly impact their business or their customers. For this last category, external events or activities like the weather or social trends can cause rapid unexpected changes in a company's business or a customers needs.

Media and entertainment company expenditures and investment in artificial intelligence related systems is growing at an extremely rapid rate [1]. This rapid growth is impacting all aspects of media and entertainment businesses but is specifically focused on advertising related systems based on the importance to the monetization strategies and ultimate success of companies that rely on ad spend for their bottom lines.

Based on the dependence of media and entertainment companies on advertising revenue and the clear trends in artificial intelligence spending, it is an obvious conclusion that a considerable amount of this spending will be focused directly on advertising related solutions or solutions that help improve existing advertising tools.

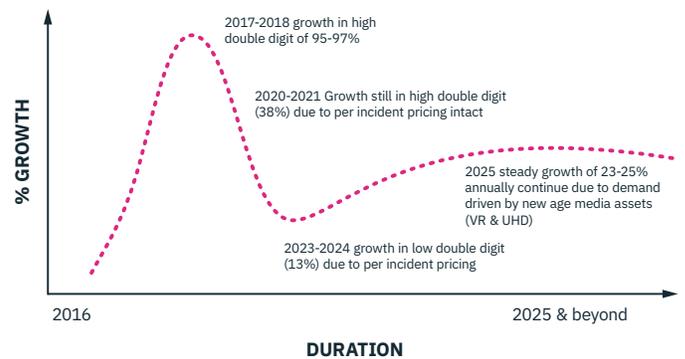[1] Mohite, Kedar, "Cognitive Services: A $24.3bn Roadmap," Ovum Research
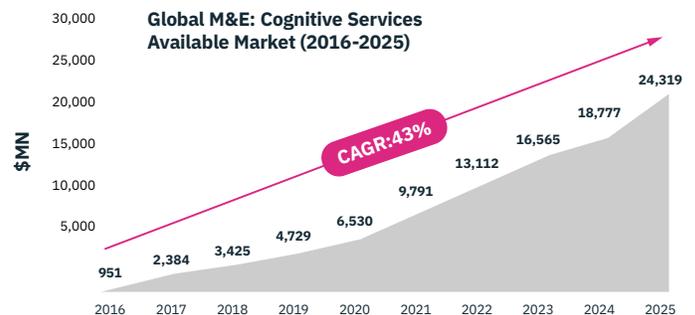

Figure 1: M&E AI spend growth rates

Figure 2: 10 year market CAGR

II. The Tools of Artificial Intelligence

We have established that it is crucial for companies to focus artificial activities in the advertising space. Next, we will discuss how companies are beginning to make that switch, and what it will look like in the early stages of artificial intelligence optimizations.

Early artificial intelligence tools in the media space focus in very specific targeted areas. Based on the fact that we are talking about audio visual media, AI solutions have three key facets when analyzing the content created and distributed by media companies:

- **Audio Analysis**: Audio analysis technology is specifically focused on strategies to automate speech to text and text to speech. Beyond ASR-based (automatic speech recognition) tools, audio advancements are beginning to enable companies to detech attributes within the audio itself, such as positive and negative speaker connotation or crowd response in a cheer. Another aspect of this technology focuses on detect specific audio elements, like a dog barking or a thunderclap or even the specific language being spoken by the voice being analyzed.

- **Textual Analysis**: Textual analysis employs computational linguistic technologies to process text according to natural language processing algorithms. This allows the system to understand items in text, such as the most relevant key word, the topic that is being discussed, the connotation of the text, and likely most importantly, allows the content to be logically categorized into a predefined taxonomy.

- **Visual Analysis**: Visual analysis is maybe the most obvious and most complex of the core three artificial intelligence tools. This allows a system to detect specific images, movements, actions or aspects in the visual elements of a specific image or collection of images or even streamed media.

As artificial intelligence matures, it is quickly moving in new directions that rapidly increase the capabilities of these base services. Two specific capabilities to call out:

- **Audience Insights**: Audience insights helps with understanding and predicting usage patterns and trends of an audience or demographic based on big data techniques and artificial intelligence prediction capabilities and models.

- **Environmental Insights**: Environmental analysis or insights allows for capabilities to analyze trends and predictors in social media, in weather and across the general zeitgeist to allow users to understand how information both directly correlated and possibly ancillary maybe impact usage patterns, decisions or general trends.

Now that we have identified the basic tools in the artificial intelligence box, lets dive into how they can shape the way advertisers and content producers currently target ads and attempt to monetize their content.

III. Advertising Optimization Strategies

Each of the tools mentioned in the previous section can help impact the way advertising is utilized in profound ways. Let's look at a few specific ways these AI tools can help companies advertise more effectively.

- **Content Packaging and Positioning**: This concept includes allowing content creators and distributors to understand their content in very clear and complete ways. Once they have a deep understanding of the underlying metadata of their full catalog using the tools mentioned above, then they can market their content much more effectively. Imagine if a company was able to show a possible advertiser in the automotive space, exactly where auto related images, audio and textual content lived directly in the content that they own and what the mood and connotation was in each relevant location. With this level of information, it becomes much simpler to build a compelling case about why a company should advertise with this content creator and how those ads cound be most effectively used. It becomes much easier to illustrate synergy when you understand the deep detail of what you can offer an advertiser.

- **Enhance Dynamic Ad Insertion (DAI)**: Enhancing DAI tools has been an ongoing challenge as long as DAI has been inexistence. However, AI has the ability to truly provide automated systems both usage information from the viewer, content information and environmental information to truly redefine the space. At its most simple, AI allows for the ability for something like automatically advertising umbrellas to people in rainy areas. However, if we take it a step further and add in

the ability to truly understand audience preferences, the content and advertisements available to offer, and the physical and digital environment of the viewer, we can alter our methods of direct advertising in truly differentiated ways. For instance, by understanding Audience preferences and viewership history, a system can automatically detect the brands a viewer prefers, what product they are actively in the market to buy, the shows they watch most frequently, the surrounding social trends and weather trends in the area, and possibly even the types of messages that resonate with that viewer to build a full composite sketch to allows us to advertise in the most effective possible way.

- **Understand Impact and Response to Ads**: Now that we have looked at how to get the right ad to the right person in the most effective way, we also need to understand how effective we were at creating and positioning an ad or ad placement. The clear scenario here is analyzing social media to see what type of response we are seeing towards a company or a specific advertisement. To take this to the next level, AI tools provide the ability to help advertisers specifically understand how a specific message or tone plays with an audience, which talent may resonate better or worse with specific audiences, or how choices on ad placement may add or detract from the ultimate decisions to click an ad or make a purchasing decision.

- **Improve ability to identify and respond to trends**: This idea is related but separate from the dynamic ad insertion concept outlined above. In this scenario, the concept is to rapidly understand what may effect a specific viewer, specific target demographic or target region and react as rapidly as possible, preferably before the viewer may even be aware of the impending action. A couple of ways this could be implemented is by mining and improving understanding of social media trends, weather patterns, economic climate and other external impacts that a media company can dynamically prepare to address. Its related to the principles behind "first-to-market" strategies and while these are not always successful, understanding trends before potential competitors gives needed flexibility to make adjustment in strategy.

These are just a few examples of how AI can help advertisers, content creators, or content distributors differentiate and improve their advertising efforts. There are many, many more and this area continues to adapt and change rapidly to learn how to use these new tools.

That brings us directly to the next topic which is where is this heading and what does the future hold for Artificial intelligence and advertising.

IV. Advertising in New Ways with AI

What is next on the horizon. The technologies behind the topics that have been mentioned exist and have been implemented or have the potential to be implemented with the right tools, technologies and. Let's look slightly further out at the technologies that will likely take hold in the next couple of years to provide new ways to advertise or possible to protect advertisers. Much of what I mention in this section today does exist but seems to be more in its infancy and is primed to mature and move the market in the near term.

- **Logo or Brand Identification**: Logo identification exists. It's not a solved problem but it is a known science. The question is what can companies do with this technology to truly make a difference in their profitability. There are a few areas where Logo ID can make a real difference. First is the concept of understanding how well an advertisement is performing, specifically in the world of live media. If I am advertising in a sporting event or a concert, how effective is my ad placement? How often is it being seen, and by how many people? How visible is it when it is in frame? Answering these questions can help me as an event coordinator illustrate how a company should spend more with my activities. As an advertiser, it is imperative that I answer these questions to more effectively use ad dollars. A second concept around logo or brand identification is the idea of detecting all logos in frame automatically. Envision the ability to look at a person at an event and accurately detect everything they are wearing by company. If AI could provide the ability to look at an event and determine what everybody in the audience is wearing down to the brand, the possibilities for monetization would be unlimited. If a system could show a clothing company exactly how many people were wearing their clothing, which types of outfits were preferred and even the preferential colors chosen, it could massively impact a company's strategy.*

- **Audience of One**: Lastly, the concept behind audience of one is truly understanding the content that is available and the needs of the viewer - and pairing those two things in a dynamic way based on a specific experience or desire requested by the customer. A specific scenario would be telling my media device to create content that will get me ready for bedtime based on my mood, my viewing interests and any other information that a system may know about me. From this request, AI has the ability to auto-generate a multimedia experience that will best serve the desires of a user in a specific context.

- **Brand Protection**: On the opposite side of effective brand placement is the concept of brand protection. How can a company protect where DAI tools or Adtech tools land an advertisement for their company. There are many sites dedicated to humorous, unfortunate or appalling ad placements on sites like YouTube, Facebook, Vimeo and others. Using AI to fully understand the content and the advertisement unlocks the potential to solve what has been a true, real world challenge and headache for many companies over the past couple of years.

Next, let's look even further ahead and the trends we may see as the area of artificial intelligence rapidly matures and changes the way we consume media and understand our environment.

V. Looking ahead

The goal of this paper is to stay within the bounds of the visible future and away from Black Mirror or Star Trek level logical jumps that could be taken in this type of section. Here are a few trends that are starting to mature but still need some time to become fully baked.

- **Augmented and Virtual Reality Innovations**: This one is likely the most obvious place where AI and Adtech are going to head in the coming years, but it has to be mentioned because of the sheer inevitability of this convergence. As people consume media in new ways, monetization efforts will and must quickly follow. How do we track views in a virtual or augmented world? How do we classify the difference between how we rate an ad impression in the augmented world vs an impression in a more traditional space? In a full virtualized environment, how do companies optimize ad placement to compete in a world that will be much more customizable and variable in nature.

- **True Real Time Ad Placement**: This is another very

obvious future need. As AR tools become more and more embedded in our daily lives, advertisers will have immensely more access to direct, real time data. The way to effectively use this data is to give users of AR technology contextual, relevant information that solves immediate needs. This could be a drink ad when a user is thirsty or second screen information with context on a product they may be looking at in a storefront. Audience Insights takes on a new meaning from the way it was defined earlier in this article when it has access to a person's biometric information or what they are seeing in front of them in real time. The overlap between big data and artificial intelligence is and always will be key to the overall experience. have access to and the needs of the viewer and pairing that in a dynamic way based on a specific requested experience or desire from the customer. A specific scenario would be telling my media device to create content that will get me ready for bedtime based on my mood, my viewing interests and any other information that a system may know about me. From this request, AI has the ability to auto-generate a multimedia experience that will best serve the desires of a user in a specific context.

The theme here is that there are many more questions than answers, and that is a great problem? People keep innovating and technology keeps changing. The needs of the business and the consumer have to keep up, and they will, because if there is one thing that is not going to change it is the desire of media companies to find an audience and the need for consumers to seek new ways to consume information.

VI. Conclusion

Artificial intelligence is rapidly changing the way we understand, consume and relate to the world around us. As companies try and keep up, it is absolutely imperative that they keep up with the innovation curve because those that lag behind in innovating will lag behind in monetizing.

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