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THE NEXT 10

Reports on the technologies and behaviors that will shape advertising over the next decade.

ARTIFICIAL INTELLIGENCE

APRIL 2022

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The Next 10 is a new addition to GroupM's "Next" series, encompassing the weekly podcast *This Week, Next Week*, our biannual global ad revenue forecast *This Year, Next Year* and now *The Next 10*—exploring the technology and behaviors shaping the next decade of advertising. In this edition of Next 10 we are publishing new, proprietary forecasts on the size of AI in advertising. We estimate it will reach more than $370 billion this year and is likely to inform the vast majority of media by 2032, reaching $1.3 trillion, or more than 90% of total ad revenue.

AI WILL PERMEATE THE MARKETING INDUSTRY AND ENABLE PRIVACY-FIRST PERSONALIZATION AT SCALE.

INTRODUCTION

It feels like a foregone conclusion by now that the streets (or subterranean tunnels) of 2032 will be populated by autonomous vehicles (AV) ferrying passengers and cargo from point A to point B. The march to fully autonomous vehicles has not been without incident and has largely played out in the public sphere, especially in AV proving grounds like San Francisco and Phoenix, where one could regularly see cars kitted out with various sensors and equipment. There is something endearing about seeing the physical cameras and LIDAR equipment powering these new smart vehicles. For many of us, the ability to see, and therefore understand, the physical skills and decision-making processes at work in autonomous vehicles has helped normalize their ascent, despite the inevitable loss of delivery and public transport jobs that will result from the technology's success.

In contrast, the AI infiltration of the advertising industry has happened largely behind the scenes, with the general public aware primarily of its failures: the "creepy" retargeting ad that follows someone around the internet, the disastrous outcomes of weaponizing targeted advertising systems to sow division and misinformation. These examples are unfortunately more common than we would like to think—and probably largely unattributed by consumers to the use of AI. But so, too, are the less-acknowledged (or at least less publicly acknowledged), successes: the trillions of brand messages delivered programmatically, the ability to match consumer intent with product offerings across voice, image and text searches, and even the creation of ad copy or creative using GANs and GPTs (*see page 5 for a glossary*). The use of AI tools extends well beyond these examples and is already pervasive across the advertising industry.

Though it can sometimes feel that AI has already upended the advertising industry, the reality is that we are only just beginning to glimpse the impact of this transformational technology. In this report, we look 10 years into the future to imagine where the changes we are experiencing today will lead—and what advertisers can do to prepare. While an exercise of this kind is speculative by nature, this report is rooted in the insights of the GroupM analysts, strategists and technologists who necessarily incorporate a long-term view when shaping the next era of media where advertising works better for people.

For the purposes of this paper, we define AI-enabled advertising as any artificial intelligence used in the process of advertising, from insight generation to activation and optimization. We include technology and algorithms that sit under the umbrella of AI, such as machine learning, neural networks, computer vision, natural language processing (NLP), and intelligent process automation.

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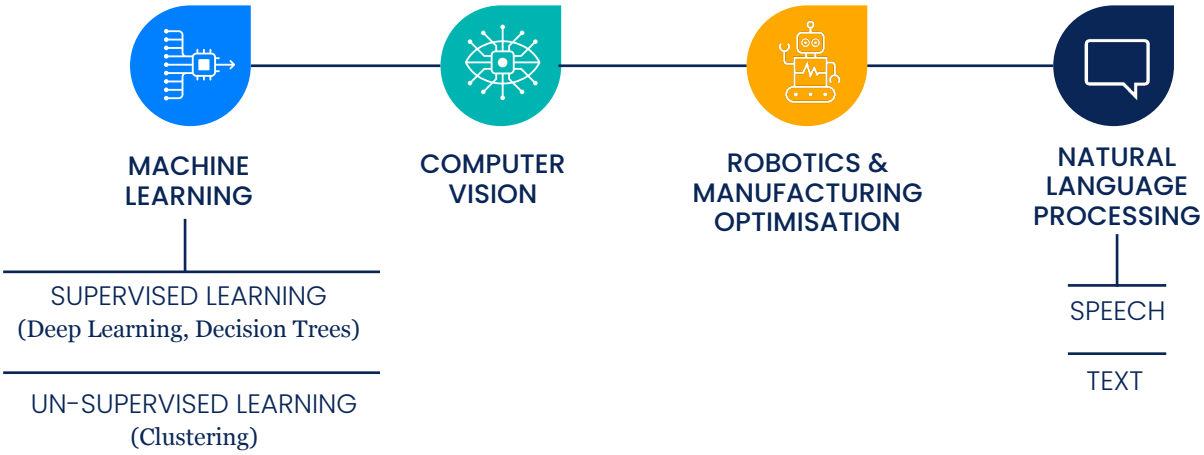
ARTIFICIAL INTELLIGENCE



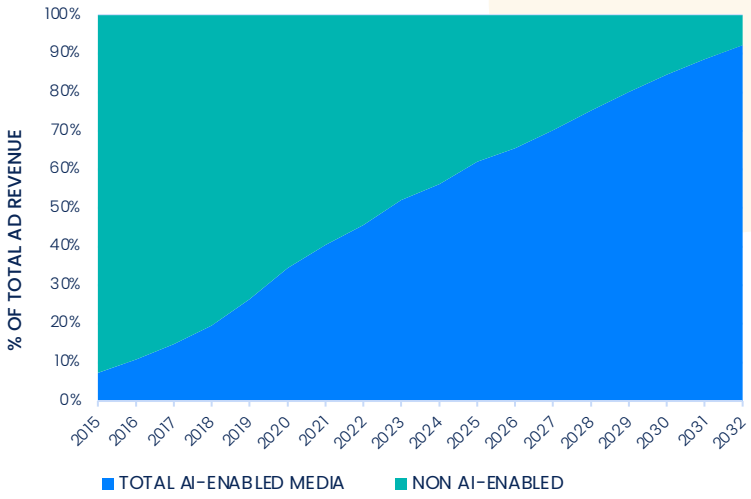
In that sense, we are taking a broad approach to defining how AI may be applied to advertising. This definition includes human-in-the-loop and supervised learning, used to develop tools like recommendation algorithms for streaming platforms, for example. It is a conscious distinction in contrast to the narrow definition of AI more closely associated with artificial general intelligence (AGI) under which the technology must act intelligently on its own, adapting its behavior in pursuit of its goal without input or supervision from humans. It's important to note that under our broad definition, practically all search and social advertising in advanced markets is already AI-enabled to some degree, using platform-based machine learning algorithms to identify audiences, optimize campaigns, and buy programmatically. Search campaigns, for example, already use combinations of machine learning, NLP, and computer vision to return the most relevant results.

AI-enabled marketing already accounts for more than $370 billion of global advertising revenue, or roughly 45% of all advertising. And its growth will only continue. By 2032, AI-enabled advertising could account for $1.3 trillion in advertising revenue, more than 90% of the total.

BREAKDOWN OF AI-ENABLED AD REVENUE

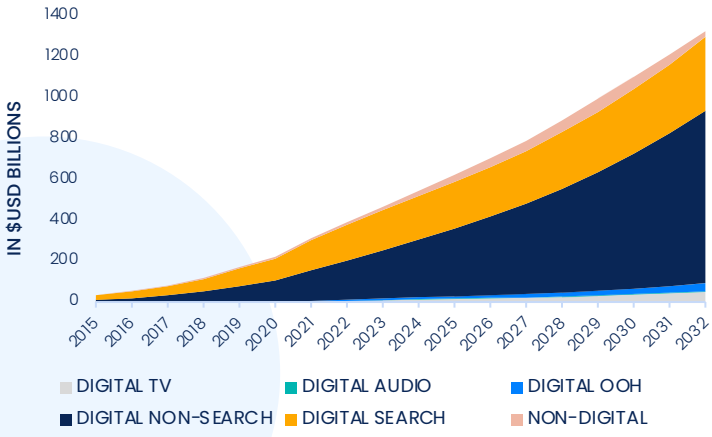
To assess the scale of AI in advertising 10 years from now, we start by assuming that AI touches nearly all internet advertising at the current point in time (given our broad definition of AI and inclusion of analytical AI techniques, including recommendation and prediction engines as well as text analysis). If we assume digital advertising in all its forms experiences a sustained faster-than-overall-advertising-industry growth rate—let's say, 7%—based on the 2026 forecasts GroupM published in December's *This Year Next Year* report, we would calculate $1.3 billion in AI-enabled advertising revenue to media owners, eventually comprising more than 90% of total advertising as channels like TV, Audio, and Outdoor become increasingly digital.

AI-Enabled vs. Non-AI-Enabled Media



Source: GroupM

AI-Enabled Ad Revenue by Medium



Source: GroupM

GROWTH OF AI-ENABLED ADVERTISING

Importantly, this figure does not include revenue from creative ideation and production, nor AI use cases that fall into related activity, such as the conversational AI chatbots performing customer service. Today, creative work using stock imagery typically relies on an image recommendation algorithm to match search keywords to an image. By 2032, that will likely evolve to creative strategists explaining the desired image to a generative AI using the newest version of GPT (currently three) or similar technologies. Why rely on the same stock imagery that anyone else can use when you can purpose-build your own? And instead of filming each automotive ad through winding roads individually, AI is already being used to map digital versions of the landscape where new models can be inserted for future campaigns.

These are examples that are already being tested today, but there will be new ad formats that haven't been invented or even conceived of yet that are also excluded from our current $1.3 trillion forecast. *The combination of new and emerging technologies like those we explore on the next page will almost certainly lead to new formats for future brand interaction and advertising activity.*

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AI IN ADVERTISING GLOSSARY

Analytical
Generative
Conversational
Hardware

Machine Learning

There are two main types: supervised and unsupervised. Supervised algorithms are trained on a set of data to be able to make predictions. Unsupervised learning algorithms learn patterns from non-labeled training data.

Examples: *personalization, recommendation, and prediction engines, data clean rooms.*

Computer Vision

Automation of image recognition and analysis.

Examples: *image search, facial recognition, dynamic ad insertion.*

Agent-Based Modeling

Used to simulate the actions and interactions of people (or autonomous agents). Used to understand complex behavior of systems using actions of individuals within those systems.

Examples: *scenario planning, epidemic modeling.*

Natural Language Processing

The ability for computers to understand and produce human language.

Examples: *voice search, contextual targeting.*

Conversational Systems

Simulation of a human conversant using text-to-speech and speech-to-text and possibly voice cloning.

Examples: *chatbots, digital assistants.*

Generative Pre-trained Transformer (GPT)

A language model using deep learning (a subset of machine learning) to produce text.

Examples: *copywriting, content creation*

Generative Adversarial Network (GAN)

Two competing neural networks (a subset of machine learning), trained on a set of data, that learn to produce similar data, e.g., pictures of faces.

Examples: *deepfakes, AI influencers, dynamic ad insertion, written/video/audio content creation.*

Virtual & Augmented Reality

A simulated experience using headsets or heads up displays (HUD) to generate realistic images, sounds, and sensations.

Internet Of Things (IoT)

Connected computing devices embedded in everyday objects that can send and receive data.

Edge Computing

Brings computation and data analysis to the sources of data (e.g., personal devices or IoT devices) in a distributed model.

All these technologies taken together unlock the possibility of mass personalization. For our purposes here, we're defining personalization as any customization of a message, experience, or service based on knowledge about a person or group of people, whether that knowledge comes from contextual signals, direct data signals, or inputs from the individuals themselves. Most critically, given the regulatory environment of the 2020s, we expect this personalization to happen in a privacy-first way—that is, using available technology such as data clean rooms, edge computing, and contextual targeting to provide personalized experiences without unrestricted access to personal data.

Perhaps unsurprisingly, as data has become the backbone to so many products and services, the treatment and protection of data is a theme common to both autonomous vehicles and advertising. There are logistical, ethical, and legal questions to answer when every car, truck, drone, and person traversing our streets is outfitted with cameras, computers, and intelligent software. In such a scenario, vehicles will be able to travel in a coordinated and more efficient way, avoiding accidents and improving traffic flow, but the onus will be on lawmakers and companies to ensure human safety (both physical and mental) above all else.

SCENE SETTING

In 2032, the media landscape will look considerably different as a result of the widespread adoption of technology, AI and wireless connectivity.

AUDIO

In a continuation of trends seen today, audio will be increasingly national or international (much like the globalization of video content). The growth of audio-first devices like ear buds, smart home speakers, and car audio systems, means that voice search will most likely overtake text-based search by 2032 (current estimates suggest 10-15% of searches are initiated via voice). The use of digital assistants in the majority of those voice environments will allow for greater personalization of advertising in music, podcasts, search and shopping results utilizing the growing capabilities of edge computing, NLP and 5G connectivity.

TV

In much of the world, linear TV reach will no longer be sufficient to meet most marketer goals. Streaming services, dominated by the U.S.-based incumbents Amazon, Disney, Netflix, Paramount and Peacock, will be increasingly globally oriented and ad-free or ad-lite. Smaller national and regional players will likely account for limited viewership numbers (in line with their share of spend on content). Many marketers will choose to plan TV along with other video environments, including YouTube and potentially TikTok or some future video platform, where consented information on viewers within those walled gardens allows for targeted messaging. Others will transition TV planning to sit alongside cultural, event, and sports planning in pursuit of shaping (or at least appearing alongside) the broader cultural conversation.

With ad-free and ad-lite environments dominating, interruptive broad-reach advertising will be tolerated less, and advertisers will have to be more creative and relevant in reaching consumers within and outside these environments.

RETAIL MEDIA

We forecast that broadly defined ecommerce will continue to increase as a share of total retail sales and could represent more than 40% of total retail globally. App-based commerce, rapid delivery, and 3D printing will transform the consumer journey of 2032, reinforcing consumer expectations around convenience, speed, and customization. Computer vision and ML algorithms will continue to enable more personalized shopping experiences including virtual try-on and size recommendations. AI-enabled features like Amazon's "View in Your Room" are already making shopping an augmented reality (AR) experience and, by 2032, this will likely expand to additional categories from beauty and automotive to travel.

DIGITAL MEDIA

Online media opportunities, including digital news and editorial content in addition to social media, will likely be increasingly cluttered in 2032. This will make ad-blocking services more popular and will make it harder to introduce new products and brands, conferring an advantage on "known" brands. In these environments, where personalization is already rife, there will be greater maturity as data regulations are proposed and take effect, with the hope that this will lead to greater trust and transparency online. Machine-learning algorithms will be able to optimize for relevance and personalized experiences within logged-in environments or using contextual signals (where not logged-in).

DATA

Advances in AI and edge computing will mean that data is most often managed on-device and will be increasingly obfuscated or anonymized by AI and privacy services like Apple's Private Relay, reducing the potential usefulness of first-party data strategies outside of logged-in environments. For those companies that are unable to convince consumers to opt into data sharing, contextual targeting, better creative, and better use of limited available data will be critical. There will be instances where a consumer enters data for the explicit purpose of personalizing products or services, such as seat preference data on a travel booking site or dietary information on a recipe site. The travel company and the cooking site don't need to know anything else about that consumer in these cases. They can use the data to provide a personal experience to the consumer and can aggregate the data to make inferences about broad customer segments, even though they likely won't be able to follow either consumer around the web as they did in the heyday of retargeting.

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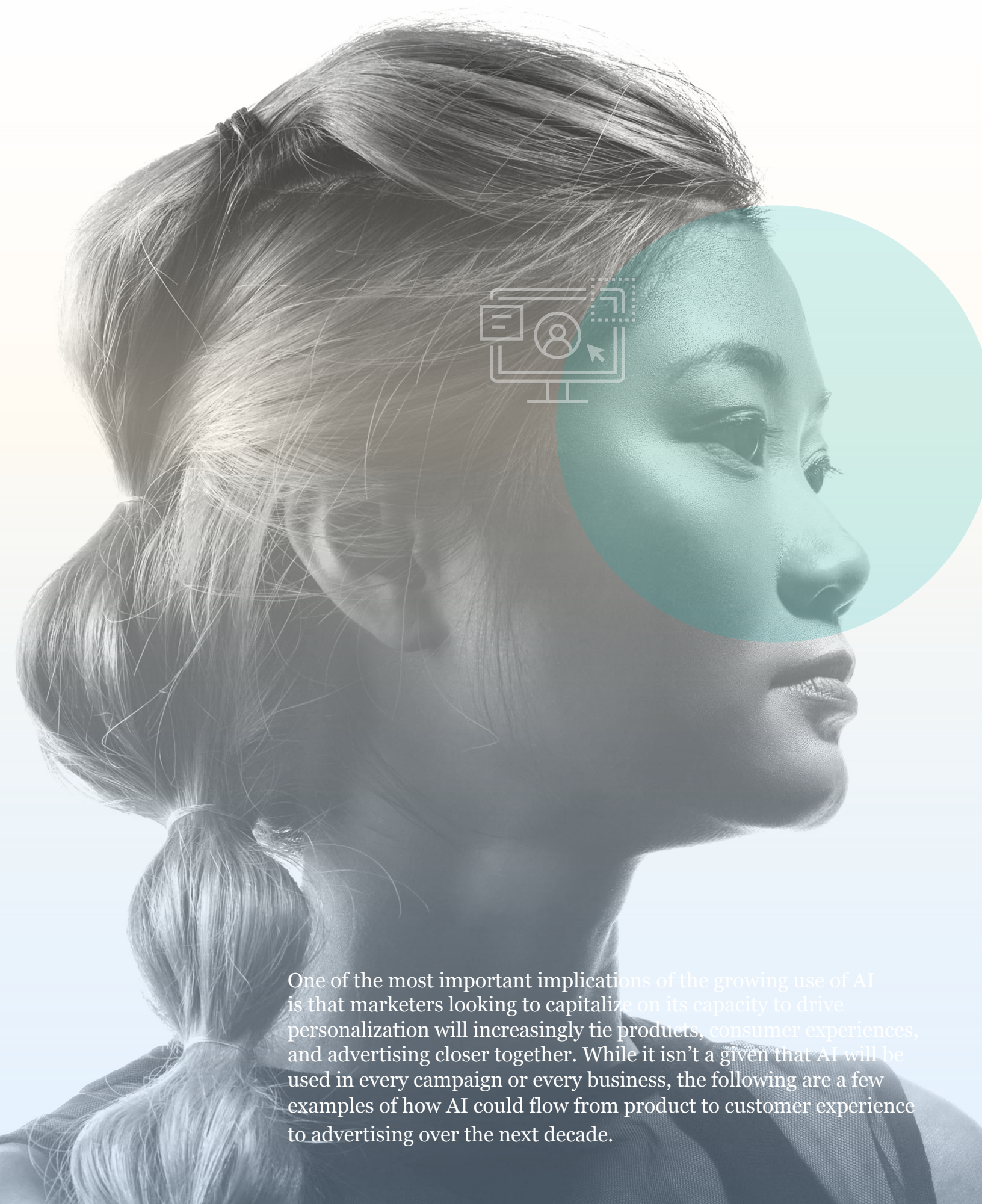

One of the most important implications of the growing use of AI is that marketers looking to capitalize on its capacity to drive personalization will increasingly tie products, consumer experiences, and advertising closer together. While it isn't a given that AI will be used in every campaign or every business, the following are a few examples of how AI could flow from product to customer experience to advertising over the next decade.

ENTERTAINMENT

In this imagined future, movie and gaming studios will use generative AI (e.g., GAN and GPT) to personalize storytelling. Awareness campaigns for new IP that run across streaming platforms and digital audio can feature different characters or plot lines depending on the target audience with minimal added time and effort. AI-generated interactive avatars of characters can be deployed into shows, social platforms, metaverse environments,* or even real-world locations if a person is wearing AR glasses with a HUD. Audiences and players, instead of purchasing a single download, could opt to play the movie or game multiple times, choosing new adventures, endings, or even main characters, all made possible by generative AI. Data from all these variations would be anonymized and aggregated and used to inform future IP.

*We don't expect the full ***Snow Crash*** or *Ready Player One* version of the metaverse will be a reality by even 2032, but metaverse-light environments within discrete games or platforms will likely offer much of the same functionality, including virtual currency, commerce, content, and socializing.

AUTOMOTIVE

Automotive companies will likely make use of generative AI and digital twin technology to power their product, customer, and advertising experiences. By 2032, we could imagine that all the world's roads and highways will be digitally mapped, and many will be equipped with sensors measuring wind, temperature, or even the angle of the sun. Both the autos and the routes they drive will have digital twins—virtual models used to run simulations, analyze performance, and suggest future improvements. These virtual models could be available in video games to generate awareness and enable virtual test drives. Video ad campaigns could feature the car or truck in a personalized shade of green in that viewer's own city or town without having to film there. Even custom specifications for the car, loan financing, and test drive scheduling could be done using interactive AI chatbots employing real-time market dynamics and road conditions, as well as inventory numbers. Once the vehicle is purchased, any consented driving data could feed personalized maintenance and performance recommendations.

Automotive companies will likely make use of generative AI and digital twin technology to power their product, customer, and advertising experiences.

APPAREL

Apparel brands could see massive opportunity as well as disruption from the use of computer vision, generative AI, and machine-learning algorithms. Brand building will therefore be an important weapon against a vast grey market of knockoffs, as well as marketplaces of user-generated designs (UGD) available to download and 3D print or fabricate locally. In this future AI-enabled environment, large brands could benefit from partnerships with content producers in which products are dynamically inserted into TV, films, and video games, with an option for the consumer to "shop the look." However, for any customer journey starting with a product image search (perhaps snagged from an influencer video or the local coffee shop), brands will likely have to contend with retailer knockoffs—which can already be found on several online shops today—as well as marketplaces for digital designs. A dominant UGD marketplace (the YouTube of products), could host billions of designs for shoes and jewelry, or anything that could be 3D-printed from a variety of materials, including metal, wood, and plastic, using AI and no-code development. This would democratize design and empower those without any knowledge of computer-aided design (CAD) to design and sell products. For example, a consumer could buy a digital sneaker file from an up-and-coming designer, send it to their local retailer-turned-commercial-3D-printer, and have the shoes delivered via drone the same day.

Laws regarding genetic data must catch up to current and future use cases before AI-enabled products and advertising are scaled up.

CPG

In CPG, one of the biggest opportunities could be the growth of personalized nutrition and personal care using machine learning and genomic sequencing. For that to become reality, AI-enabled personalization at scale would be crucial. Digital outdoor screens with multi-view pixel technology (where two people looking at the same screen could be shown two different messages) would enable Person A to see an ad for a post-workout drink formulated to their metabolism, while Person B sees an ad for sunscreen matched to their skin tone and skin pH.* This happens without the use of glasses, on the same screen at the same time. Home IoT and digital purchase histories will make subscriptions to CPG products (either directly or via an omnibus subscription at a brand level) increasingly desirable from the advertiser's perspective and will in turn create higher barriers to brand switching. All this health data, including purchases and usage, but especially genetic data, will obviously require protection and ethical treatment. Laws regarding genetic data must catch up to current and future use cases before AI-enabled products and advertising are scaled up.

*This only works once technology and AI remove biases and flaws that fail to recognize the full spectrum of skin tones

It must be noted that each of these scenarios should be consented, secure, and additive to the overall consumer experience. The ability to place ads everywhere using new screen technology or AR glasses doesn't mean everyone wants these available all the time. Some of the biggest advances may be in the processes by which consumers control their openness to advertising, the times and situations in which they're happy to receive messages, and the companies that they want to hear from. One could imagine a sort of "browsing" versus "focused/incognito" toggle for one's devices and digital persona.

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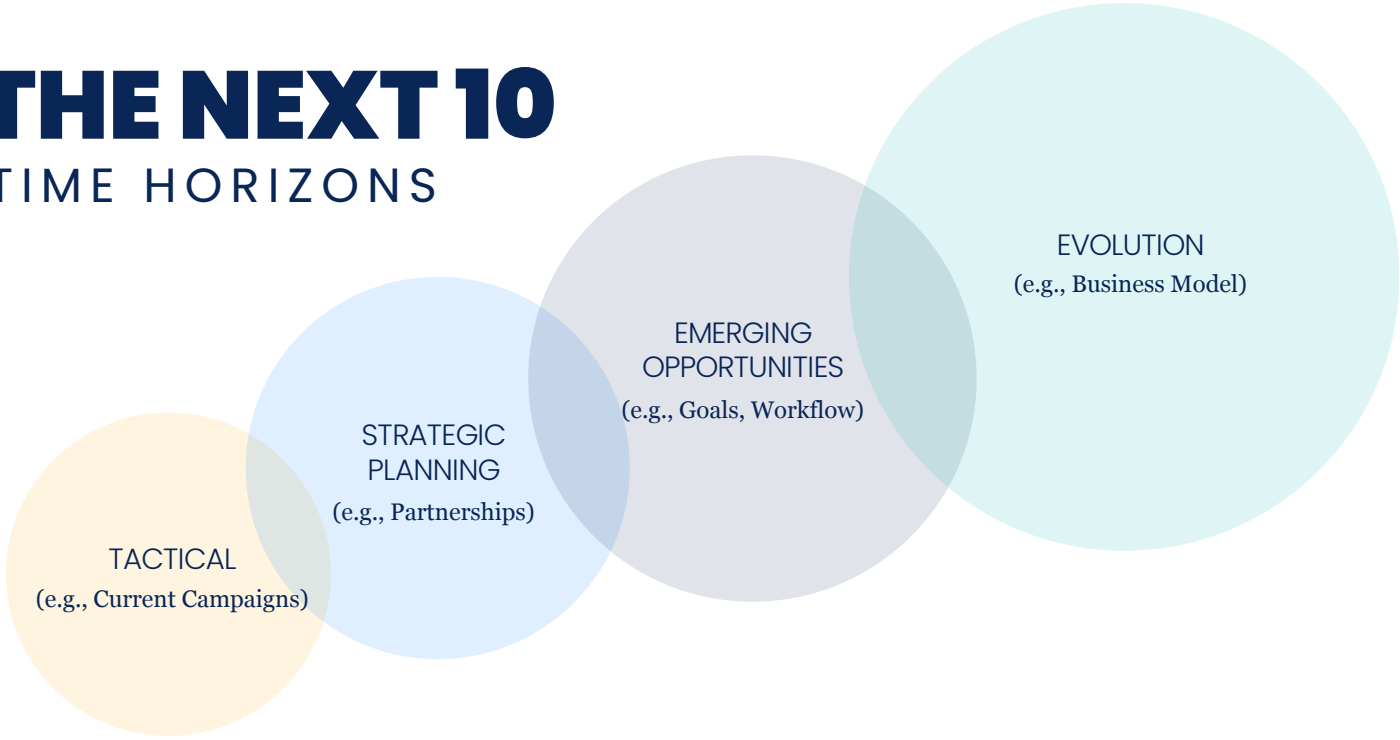
WHY AI-ENABLED ADVERTISING AND PERSONALIZATION MATTER

In the world of 2032, we expect AI to underpin everything from creative versioning to consumer purchase decisions, all in a privacy-first way. Consumers will expect marketing messages that are relevant, personalized, and non-interruptive, greatly simplifying their daily decision-making. This may not always be what consumers get. But the brands and platforms that get it right should enjoy an advantage in consumer attention, consideration, and loyalty. There will almost certainly be occasions where targeting or optimization algorithms contain unconscious biases, or where an algorithm seeks to achieve its goal in ways its human supervisors didn't intend or foresee—examples of this abound in current computer science literature.

THE NEXT 10
TIME HORIZONS



IMMEDIATE	NEAR-TERM	INTERMEDIATE	LONG-TERM
6-12 MONTHS	12-24 MONTHS	2-5 YEARS	5-10 YEARS

AI will make it not only possible, but efficient to provide each individual with a custom message, offer, or even product. In some cases, the power will likely shift to the walled gardens, where all these disparate points of data can be aggregated and analyzed. In some cases, it could shift to consumers, who will be able to see only product suggestions or ads for items they are interested in. They may also have the option to customize those products to suit their exact needs, rather than settling for a version created with the mass-market in mind.

There are actions that brands can take now to capture benefits and avoid pitfalls associated with the AI transformation of advertising, with varying levels of action across the strategic-planning time horizon.

- Re-examine brand goals for a future of reduced TV reach and greater addressability. Is your brand message the same for all people or highly individualized? How will you achieve front-end investment in the brand in a world of AI-enabled addressability and programmatic delivery?
- Use AI-enabled scenario-planning tools to prepare for changing media behaviors. The act of preparing, rather than the plan itself, is valuable. Tools like agent-based modeling and strategy simulation can help marketing organizations test resilience and agility given future disruption.
- Plan for augmentation of organizational workflows and tasks. Embrace the new efficiencies and capabilities provided by AI and evolve marketing teams to work with AI tools across creative ideation and production to media planning and execution.
- Expand your competitive set and your source of inspiration beyond the bounds of your immediate sector. Future partnerships and business models will likely cross industry boundaries as customer purchasing behavior is augmented by AI.

IMPLICATIONS FOR MARKETERS: RESPONSIBLE AND ETHICAL AI

We have already applied AI to nearly half of all advertising without first agreeing on the proper safeguards and principles to prevent abuse, unintended consequences, and repetition of the same mistakes from the past 10 years. Without proper thought to how we are incentivizing AI models, for example, those algorithms could find that the most valuable sports-betting customers are those who visit gambling-addiction information sites. Humans must remain in-the-loop as the architects and supervisors of these campaigns as we work to answer certain vital questions on the future use of AI in advertising.

DISCLOSURE

How should disclosures about the use of AI in advertising work? Should people be notified when they're speaking or chatting with an AI chatbot and not a human?

INTERPRETABILITY AND EXPLANATION

What are the minimum and optimal transparency expectations for AI decision-making, and what is our level of comfort for what remains hidden in the black box of machine learning?

REINFORCEMENT LEARNING AND INCENTIVES/OUTCOMES

How do we build safety and accountability into algorithmic incentives? How do we protect at-risk users—and all consumers—from AI that exploits dark patterns or behavioral "hacks"?

FRAUD & BAD ACTORS

What are the ways we can protect against the weaponization of AI in advertising tools and platforms used to amplify misinformation, deep fakes, fraud, and abuse?

Before long, we will likely need to overcome our fear of riding in an autonomous vehicle. Similarly, we should not let fear of AI augmentation paralyze our progress toward offering better advertising experiences for consumers and advertisers alike. AI is already here, and it's not slowing down. Our human effort can best be applied imagining what we want the future to look like, designing the right goals and guardrails, and learning to put AI to use in service of those.

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