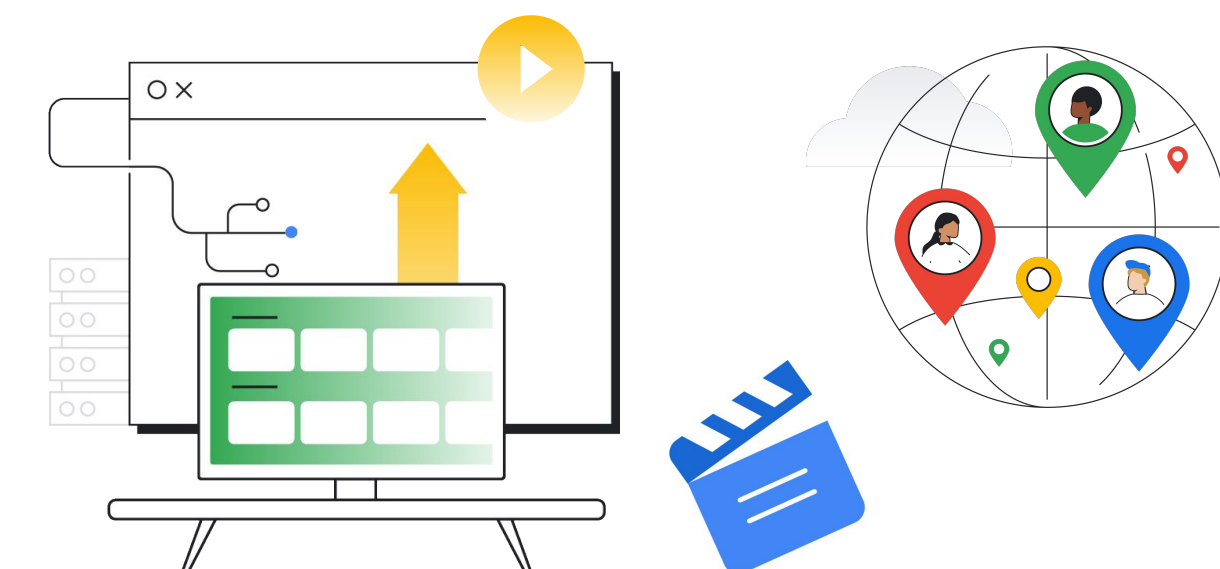Google Cloud

Personalizing media for global audiences

Using cloud, Artificial Intelligence, and Machine Learning to increase audience engagement

Personalization in media & entertainment

The case for personalization

Building a personalization capability

Chapter 1

Personalizing media for global digital audiences

Chapter 2

Personalization in media & entertainment

Chapter 3

The case for personalization

Chapter 4

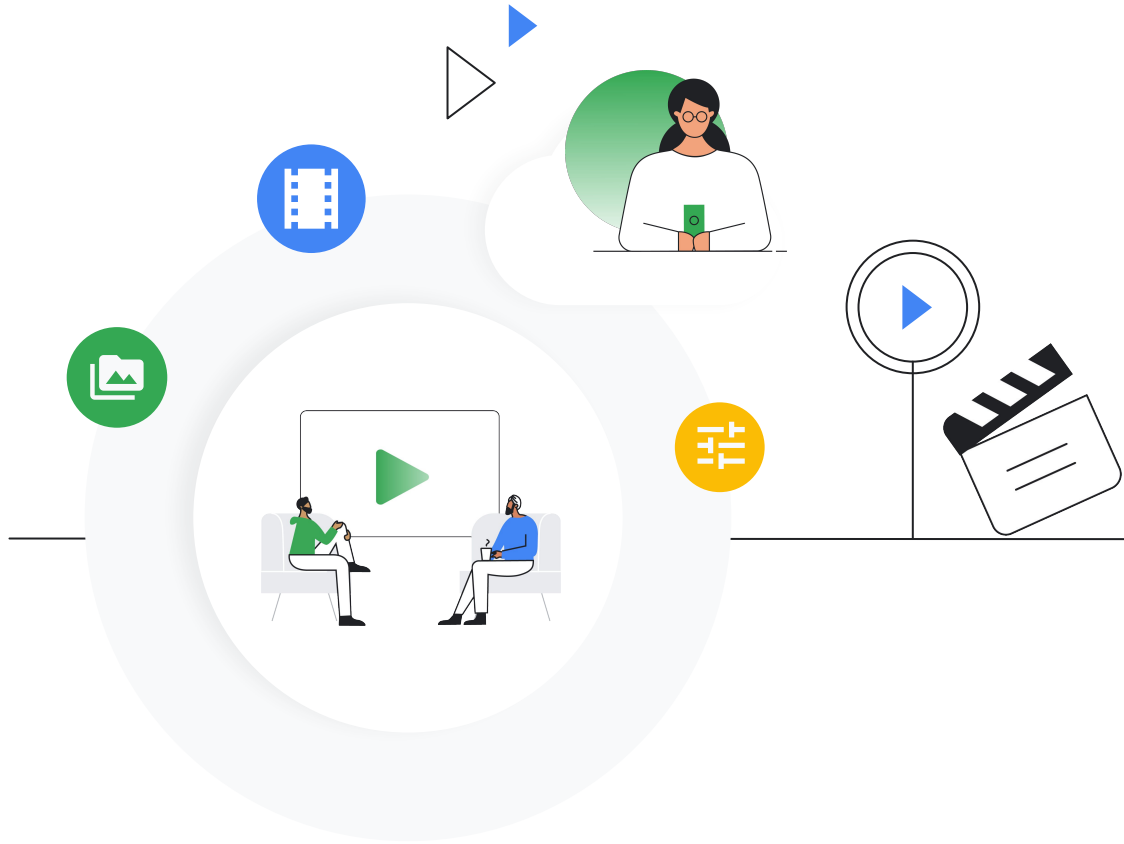# Building a personalization capability

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Chapter 5

Emerging business opportunities

Chapter 6

How Google Cloud can help

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01

Personalizing media for global digital audiences

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Executive summary

What

For media companies, personalization optimizes the audience experiences for the individual, using intelligent and scalable technologies.

Why

Personalization can help delight and engage audiences, create new business insights, and ultimately deliver positive business results such as retaining customers or creating new revenue opportunities.

When

Consumer expectations of digital services combined with intense competition for audience attention means media companies need personalization to reach, engage, and retain audiences effectively.

How

Media companies can reach out to cloud providers and specialty media technology vendors; they have drastically reduced the barriers to enabling technologies within cloud, data, and AI.

> "
> By developing a robust personalization capability, not only can businesses meet consumer expectations, but they can also drive meaningful and measurable business outcomes."
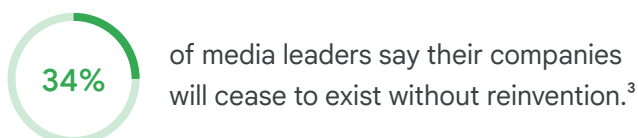
Anil Jain
Global Managing Director Media & Entertainment, Google Cloud
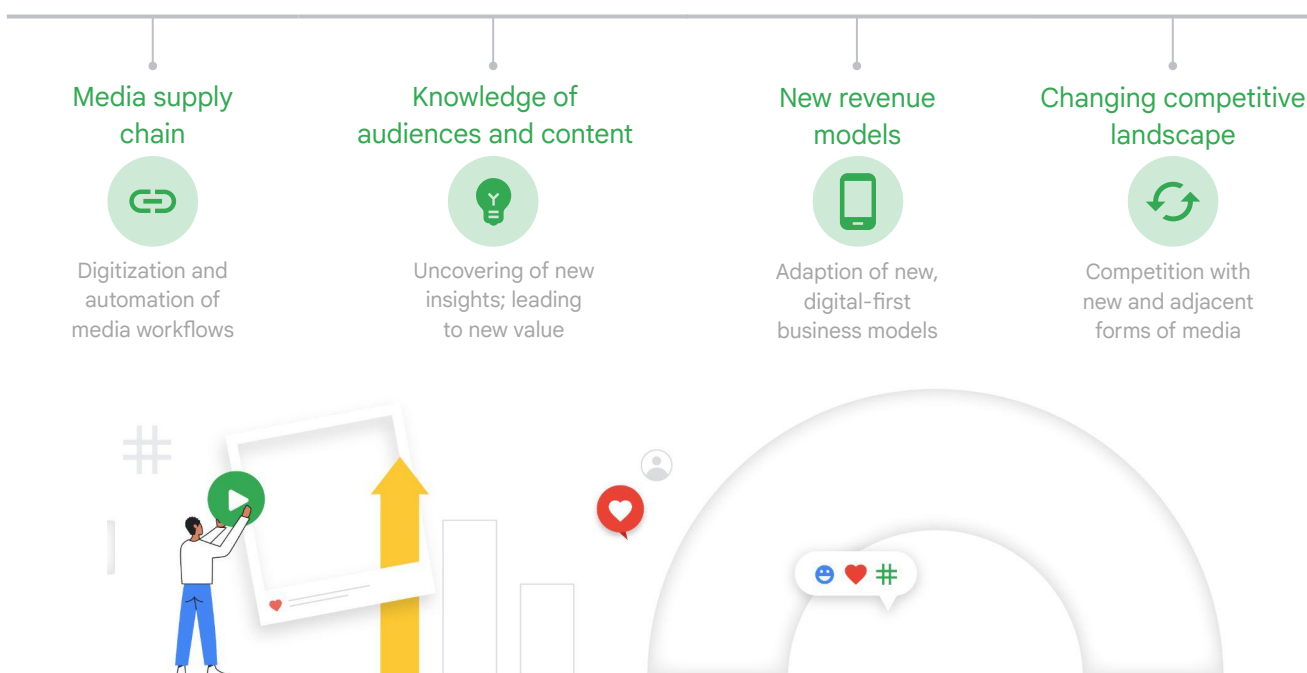
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The challenge

Within the Media and Entertainment (M&E) industry, the competition for audience attention has never been greater. While consumers now subscribe to an average of 6 streaming services[1] at one time, churn rates can be as high as 11% every month[2]. In addition, newer, technology-borne media—such as social media and games—further increase the competition for attention. As a result, media companies need every advantage at their disposal to maintain the attention of their existing audiences.

As the M&E industry undergoes continual pressures from digitizing supply chains to competing with new market entrants, companies must find a way to factor multiple challenges into a single addressable opportunity.

34% of media leaders say their companies will cease to exist without reinvention.[3]

Trends in media and entertainment

| Media supply chain	Knowledge of audiences and content	New revenue models	Changing competitive landscape
Digitization and automation of media workflows	Uncovering of new insights; leading to new value	Adaption of new, digital-first business models	Competition with new and adjacent forms of media

[1] Hub Research 2021. Conquering Content

[2] The Economist 2022. Disney, Netflix, Apple: is anyone winning the streaming wars?

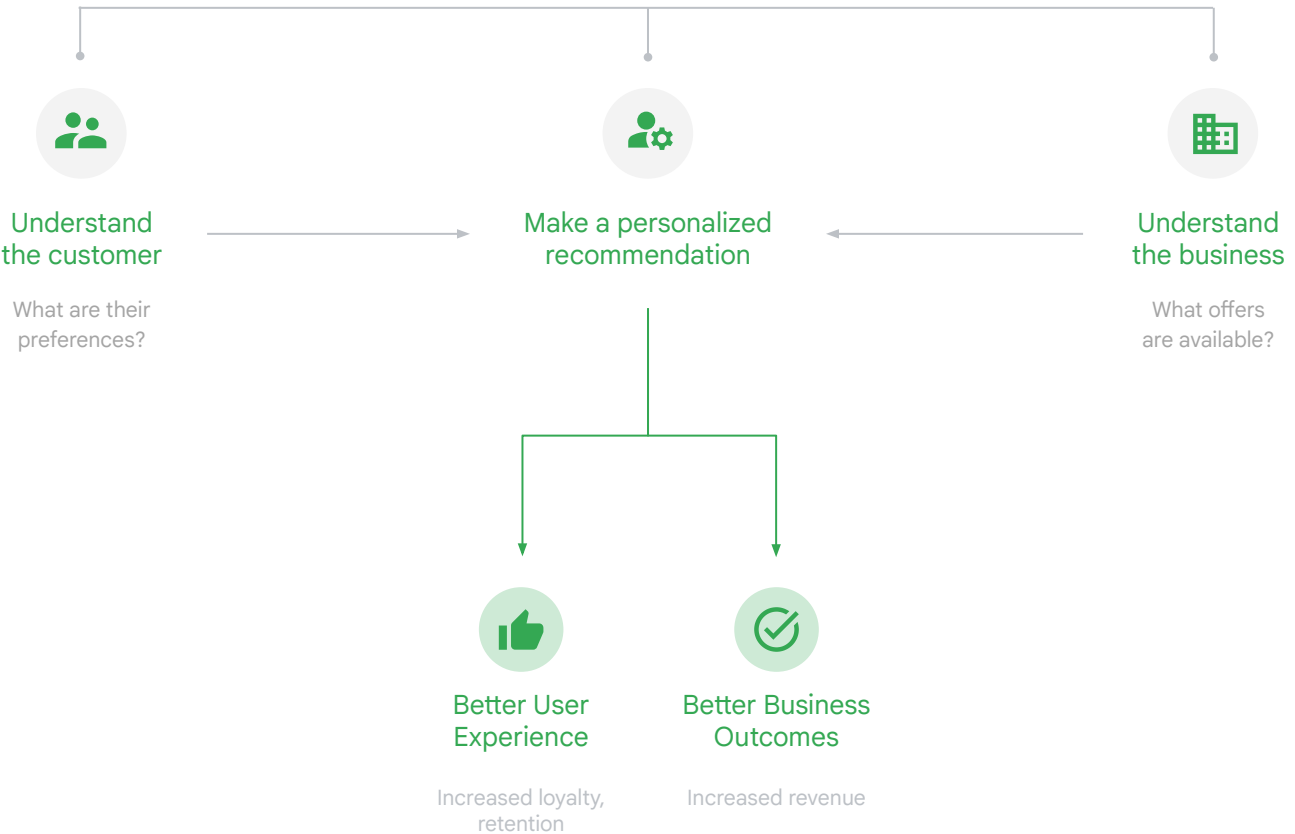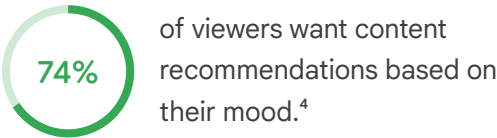[3] EY, 2020. How are media and entertainment businesses reinventing in an age of transformation?

02

Personalization in media & entertainment

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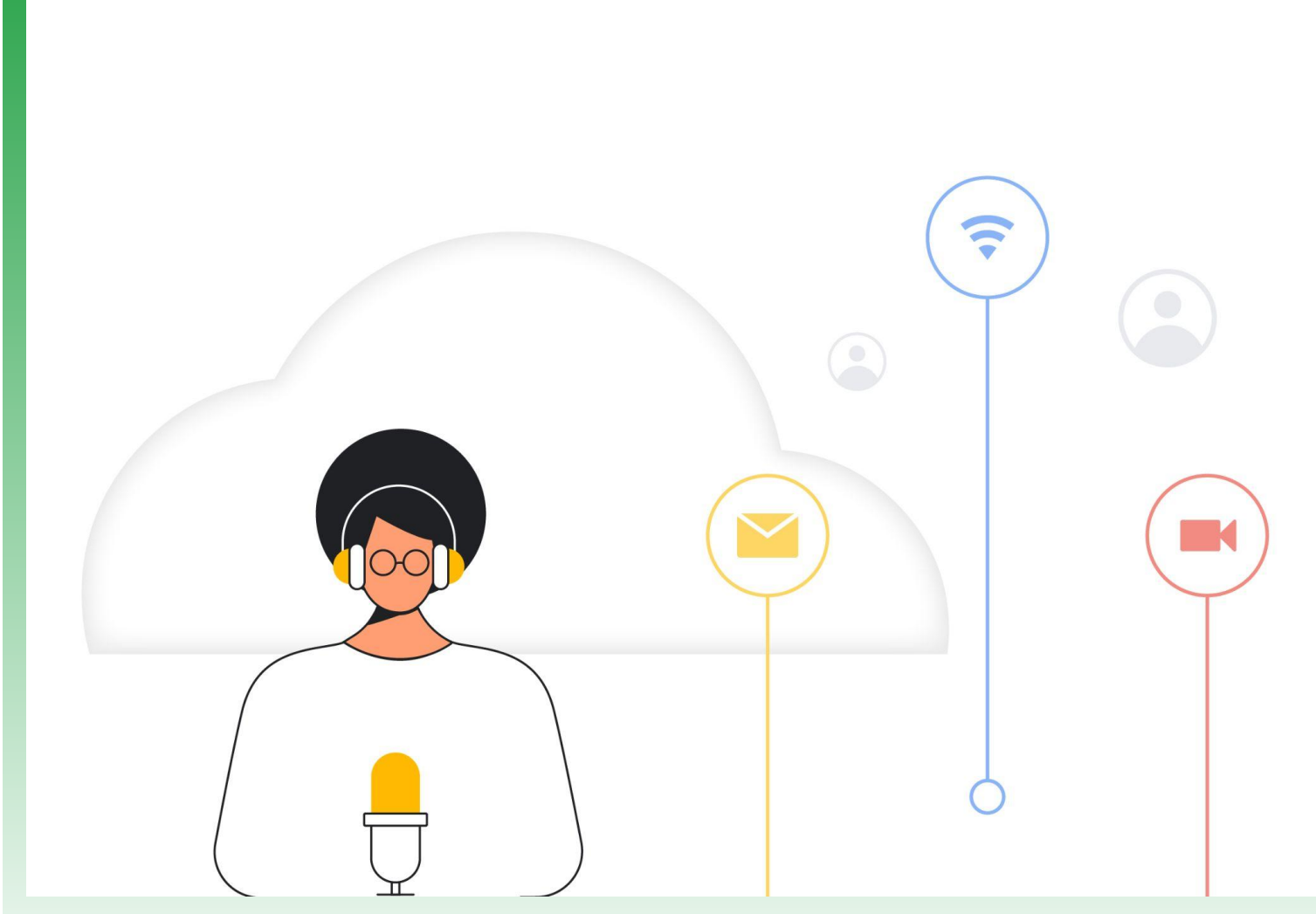
Personalization matches the media businesses content to the preferences of the customers at highly granular levels – within specific groups, cohorts, or even individuals. Some implementations are more passive, such as getting an item recommendation based on previous shopping history. Others are more active, such as a user providing their location and car preferences to a ride share service. Increasingly, consumers will expect personalization to be the standard.

The personalization standard AI and behavioral data help deliver the right content at the right time, down to an individual level.

74% of viewers want content recommendations based on their mood.[4]

Understand the customer

What are their preferences?

Make a personalized recommendation

Understand the business

What offers are available?

Better User Experience

Increased loyalty, retention

Better Business Outcomes

Increased revenue

4 PWC, 2021. After a boom year in video streaming, what comes next?

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Previously, creating a digital solution that can intelligently match products to customer preferences has been costly and complicated, requiring technology investments and know-how. M&E organizations needed both infrastructure that maintains large datasets of user behavior and software to extract insights for personalization. As a result, personalization was limited to relatively few companies that were either 'digital natives' or willing to make a significant investment to overhaul their infrastructure.

However, today, the ability for a business to personalize is more accessible than ever. With relatively small investment, M&E companies can stand up large fleets of computing technology to store and analyze data, while technology partners offer intelligent solutions that enable personalization through the use of AI and ML.

The shift to digital distribution has meant M&E companies have inevitably begun to collect and build their own 'first-party' data set for their content and audience. This includes consumption patterns, consumer spending behavior and LTV, advertising inventory, quality of service metrics, subscriber history, marketing campaign responses, and more.

Both the availability of technology and digitization of the industry, have made personalization even more accessible and essential to the M&E industry.

Data as a competitive advantage: First-party data is a strategic asset that can be harnessed with AI and ML.

47% of media companies already deploy company-wide data sets and AI models.[5]
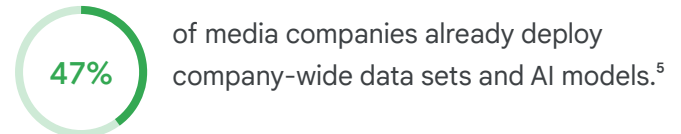
5   PWC, 2021. AI for tech, media and telecom in 2021: top priorities, benefits and challenges

03

The case for personalization

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Today, consumers engage with a variety of products and services that match their preferences and they've come to expect personalized experiences. By developing a robust personalization capability, not only can businesses meet consumer expectations, but they can also drive meaningful and measurable business outcomes.

Gain and retain

In the past, audiences would 'channel surf' – spending time searching for what to watch instead of actually watching it. Today, as audiences are enticed by a plethora of content, media companies need to minimize 'time-to-discover'. By having personalization capabilities, media companies can turn moments of attention to sessions of engagement. An organization can make recommendations to effectively match content to audience members using the data media companies already have.

Not only does this deliver an optimal user experience, it also minimizes time-to-discover, thereby reducing opportunities for audiences to engage elsewhere. Through personalization, businesses can keep audience attention to drive business results like reducing churn or increasing ad inventory.

Predicting audience churn: By applying AI to behaviour data, media companies can optimize for audience retention.

30% reduction in churn in 3 months was achieved by one media company. [6]
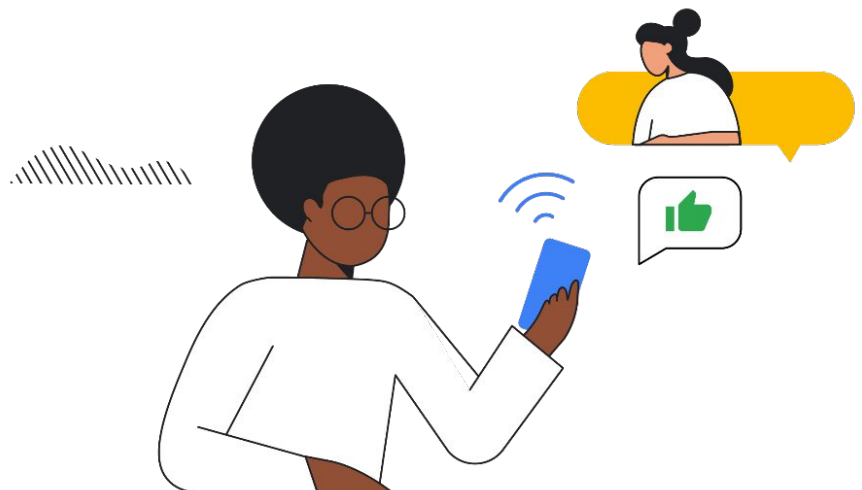
[6] Spark Beyond 2021. Reducing churn for a European media company

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Make better decisions

The amount of data collected can be vast – to the point of being unwieldy or unintelligible. It's not good enough just to have data. Businesses need to find new insights from the data they already have. Conveniently, the same capabilities needed to deliver audiences personalized experiences can also be used to deliver insights back to the business. In addition to data analytics tools, AI and ML are unlocking whole new levels of insights. With a robust personalization capability, businesses can:

- Produce more precise insights by cross-referencing more and larger sets of data
- Increase profitability of ad revenue by serving ads based on contextual segments
- Increase effectivity of customer acquisition campaigns, serving more specific media and offers to segments
- Make better content creation decisions by analyzing audience watching patterns and behaviors

Growing revenue

While personalization can help deliver better audience experiences and make more insightful decisions, investments in personalization can directly lead to increased monetization growth and opportunities. Here are 3 ways how investments in personalization can impact some key metrics in a media business:

- **Increased conversions** By understanding user behavior, media companies can construct the right offer at the right moment. For example, by deploying ML-based recommendations to its users, publisher Newsweek increased conversion rate by 10%[7].

- **Increased ad revenue** By understanding and targeting smaller cohorts, media companies can serve more relevant ads to end users, improving user experience while also increasing the value of their ad inventory.

- **Increased retention** By knowing the behavior and value characteristics of like-audiences, media companies can retain users indirectly (such as through improved user experience) and directly. For example, predicting a subscriber may churn (such as through decreased minutes-engaged) and offering more relevant content, before a cancellation attempt.

Maximising media value computer vision and advanced audience segmentation can optimize delivery and boost ad yield.

80% growth predicted in CTV ad spend by the end of 2024.[8]

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[7] Google Cloud 2022. How Newsweek increased total revenue per visit by 10% with Recommendations AI

[8] Adjust 2021. Quality Matters: Video Streaming Quality Report

Google Cloud

The bottom line

Applying personalization can positively impact the media business in a variety of ways. Here are some examples of what has been achieved by some media and entertainment companies:

- Netflix, well known for its ability to personalize and recommend, has an astounding subscriber retention rate of 48 months[9].
- Telecom Argentina attributed personalization to increasing retention by 35% and NPS by 33 points[10].

Why personalize?

Gain and retain audiences

- Help audiences find the content they want
- Keep the audience's attention, longer
- Create better audience monetization experiences

Business Outcomes

- Increase audience satisfaction
- Increase engagement
- Increase ad inventory
- Reduce Churn

Make better decisions

- Use audience data to make business decisions
- Respond to market needs to stay competitive

Business Outcomes

- Increase ad inventory value
- Increase customer acquisition effectiveness

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[9] Parks Associates 2021. AI-enabled Data: Key to Video Service Optimization
[10] Bitmovin 2022. ContentWise: Economics & ROI of Personalized Video UX

04

Building a personalization capability

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Technology

The amount of data collected can be vast – to the point of being unwieldy or unintelligible. It's not good enough just to have data. Businesses need to find new insights from the data they already have. Conveniently, the same capabilities needed to deliver audiences personalized experiences can also be used to deliver insights back to the business. In addition to data analytics tools, AI and ML are unlocking whole new levels of insights. With a robust personalization capability, businesses can:

How technology can enable personalization

Technology		Example Application
Artificial Intelligence	Ability to make intelligent human-like decisions	Making a content recommendation to an audience member
Machine Learning	The process of analyzing data to optimize for an outcome; results in ML Model	Predict what content an audience member will engage with most; and self-improve based on the results
Cloud for AI/ML	Continuously improve ML models and run AI functions at scale	Programmatically serve personalized experiences to large, segmented audiences in real-time

Google Cloud

Cloud computing has a unique role in the technology stack. Not only does it enable the 'brains' of a personalization capability, it also provides the 'muscle' required to deliver it at scale. Some ways cloud helps personalization scale include:

1. **Deep and wide content analysis**
   Deeply understand vast swaths of media content, whether through video archives or the continuous intake of new content. Cloud can deploy AI/ML at scale to do this monumental task in place of human actors.

2. **High throughput data intake**
   Serving media is one of the most challenging technical workloads as companies are expected to serve millions of users, concurrently. Understanding this audience requires the collection of massive amounts of clickstream data,for example every click, swipe, and voice command. Cloud provides the scale to capture all of this.

3. **Real-time reactions**
   It's not enough just to capture and develop insights. They must also be provided in a timely manner. For example, finding the perfect show for an audience member is great, but it's useless if it takes 10 hours to figure out and they want to consume something right now. Cloud technologies help organize and process huge amounts of data to quickly develop actionable insights.

With technologies using AI, ML and cloud, media companies can build a 'personalization engine' that can continuously refine its understanding of the audience and available content. For this 'engine' to run, it needs fuel in the form of data.

Data

Data is arguably the most important piece of a personalization capability. What the data is and how it is used can be a key differentiator to an organization. M&E companies in particular will be drawn to two data sets:

- Media content
- Audience behavior

In this section, we explore the value of these kinds of data, the challenges to unlocking it, and how technology can help.

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Media content

The data within media content, especially within audio and video formats, remains largely untapped. Easily obtainable metadata—like content title, genre, format, resolution—may help create a more accurate personalization model, but the impact is likely small compared to understanding what's in the media itself.

Some of this data may be simple and effective, such as the cast of a movie or identifying a favorite actor. Contextual information, such as "movie with a dragon" is much harder. Today, it's typical for a media business to hire an agency to 'tag' content within the media library. When the content is tagged, it's usually only at the 'title' level. For example, a description for an entire film, episode, clip, or file. Furthermore, human agents who review content and manually enter data do the tagging, which is prone to error and completely unscalable. As a result, tagging large content libraries—such as when inheriting a content archive—has been infeasible.

Advancements in AI/ML are finally making this task scalable with technology. For example, speech recognition has become very accurate, allowing dialogue tracks to be turned into discernable data used for full-text metadata, captioning, transcriptions, and even translations. Computer vision, a subset of AI/ML technologies, can recognize objects, people, and logos. As technology advances further, we can expect AI/ML to go even further, like recognizing when a scene in a movie is 'happy'.

Media data type	Example
Technical information	Length of video, resolution, bit rate
Tagged metadata	Title, publisher, cast members
Frame content data	Objects in a video frame (e.g. 3 apples are in frame 34 of a movie file)
Contextual media data	Meaning of a video segment (e.g. minute 3 to 7 of a movie is 'sad')

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Audience

A wide breadth and depth of audience data can be collected and correlated to power personalization capabilities. Core to the business is how audiences interact with its media, including what's being consumed, on what device, and the time of day. However, there are many other touch points that can be connected and cross referenced to create interesting insights. For example:

| Insight	Sources
Are audiences more likely to retain when exposed to a specific piece of content?	Audience behavior and billing
Is a piece of content being viewed enough to justify licensing costs?	Audience behavior and accounting
Do engagements from a certain device drive more customer support tickets?	Audience behavior and customer support
Publish date: What day of the week will result in the most engagement?	Audience behavior and cloud activity

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A word on privacy

Media companies must take great care in collecting, using, and protecting user data. As consumers have become increasingly savvy with technology, they increasingly think about how their data is collected. As a result, they expect their data is handled with great care when they provide it to businesses in exchange for a service. Media companies are obligated—if not legally required—to do so.

One technique used to mitigate privacy concerns is to obfuscate data to be unable to track any specific user. For example, instead of applying personalization to a particular user, companies can segment their audience into highly granular 'cohorts' with similar attributes. By doing so, highly targeted actions can still take place without exposing individual data.

Bringing it together

In summary, building personalization capability fundamentally requires technology and data, and cloud computing is making personalization technologies more accessible to companies than ever before. Therefore, M&E companies should prioritize their data efforts, collecting and unifying their data set to fuel a personalization engine.
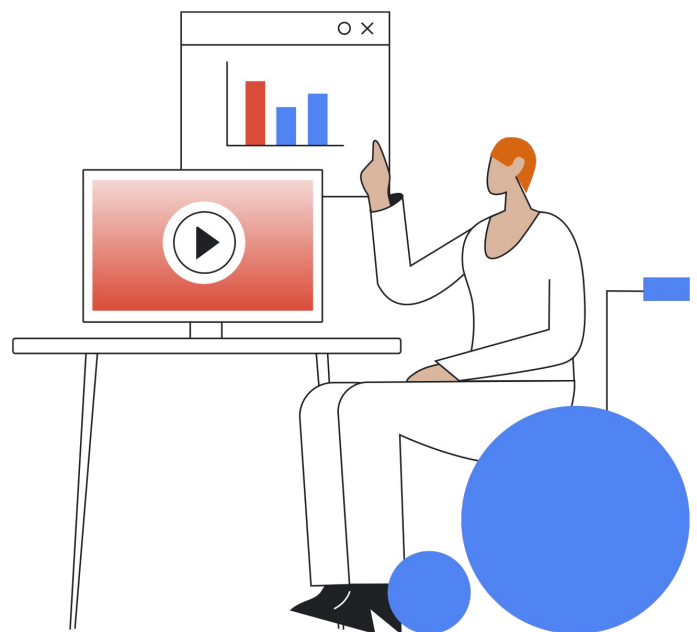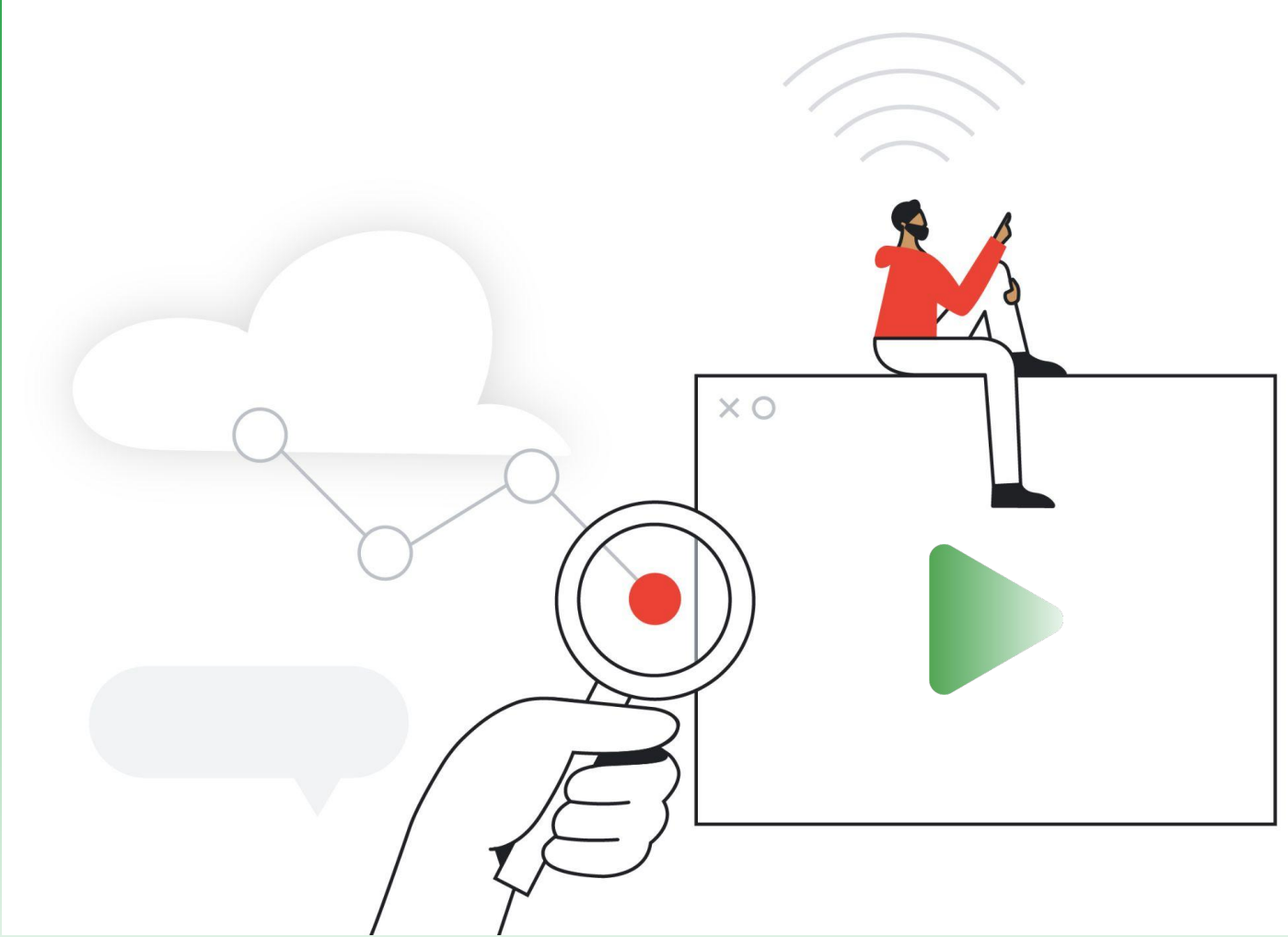
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Emerging business opportunities

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As technology improves, opportunities that were previously out of reach have become more available. A business that has made investments in personalization will find itself more agile and able to take advantage of new technologies faster than its competitors. Here are some upcoming future opportunities and trends to look out for:

1. **Hybrid business models**
   As M&E companies convert audiences into subscribers, they will inevitably need to to try new offerings and monetization methods to continue to grow. We suspect mature companies will try new business models. For example, within video media streaming, companies are considering augmenting their subscription video-on-demand offerings (SVOD) with an advertisement-supported option (AVOD). Others may go further, integrating e-commerce or offline IRL (In Real Life) experiences to their digital offering. Personalization capabilities will give media companies optionality should they decide to experiment with new models, helping them execute and measure results.

2. **Personalized media programs**
   By combining personalization with cloud infrastructure, media companies can create personalized programs of content for specific audiences. By doing so, they attempt to keep a customer's attention for longer periods of time – especially important for those pursuing ad-supported models. Today, we see examples such as 'news feeds' (text-based), 'custom stations' (audio-based), and linear personalized channels (video-based). While the concept is not new, we expect technology will make it easier for more companies to develop and deploy effective personalized media programs.

3. **Digital product placement**
   As computer vision and real-time 3D technology advances, it's now possible to insert digital objects into media content. For example, a scene with an empty parking lot could have a car digitally inserted. Combined with personalization, the car's specific make and model could be changed based on the audience characteristics.

4. **Future platform support**
   Audiences consume media in increasingly different ways, for example short video formats and gaming. This means the ability to traverse ecosystems will become more critical in future. Investment in personalization will provide companies the agility to understand where their audiences are and so they can consider deploying services to a new platform.

5. **Dynamic & targeted ad insertion**
   Whether by contextual or opt-in permission, being able to identify specific cohorts for advertisers will increase the value of ad inventory while providing users offers they're more likely to be genuinely interested in.

6. **Global distribution**
   If industry consolidation continues at its current pace, remaining participants will likely need to find new growth areas. Investments in personalization will help ensure media companies can scale while having insights into the media preferences of new territories – giving them the ability to understand preferential differences between global and regional audiences.

7. **Advanced CRM**
   While personalization has been described to match media to audiences, the same investments can also be used to better manage and retain users through other means. For example, a loyalty program could help predict when a user may churn and determine the optimal incentive to retain them.

8. **Cross-functional benefits**
   While personalization may be considered a marketing capability, 'understanding the user' is a universal concept in the organization. The insights derived from personalization can be used to benefit other areas of the business as well. For example, Disney[11] used personalization to inform IT decisions in preparation for the launch of highly anticipated content. The company was able to use viewer behavior to forecast demand and server volume.
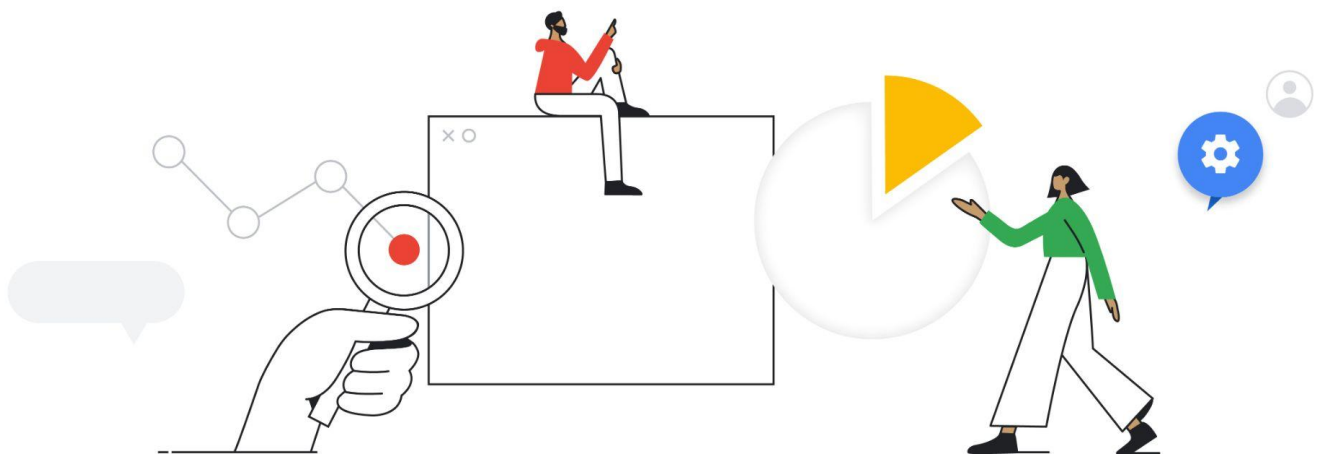
[11]   Forbes 2020. How Disney Plus Personalizes Your Viewing Experience

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Conclusion

As the competition for audience attention increases, audiences will increasingly expect their content to be uniquely relevant to them. By investing in a personalization solution, M&E companies can meet rising customer expectations, as well as:

1. Making smarter data-driven choices

2. Serving better media experiences

3. Increasing direct and indirect revenue

4. Taking advantage of emerging opportunities

To thrive, M&E companies must harness technology to keep up with the rate of change of the industry. Luckily, cloud service providers are democratizing the availability of computing infrastructure and advanced computing techniques – so there's never been a better time to decide to invest in personalization.
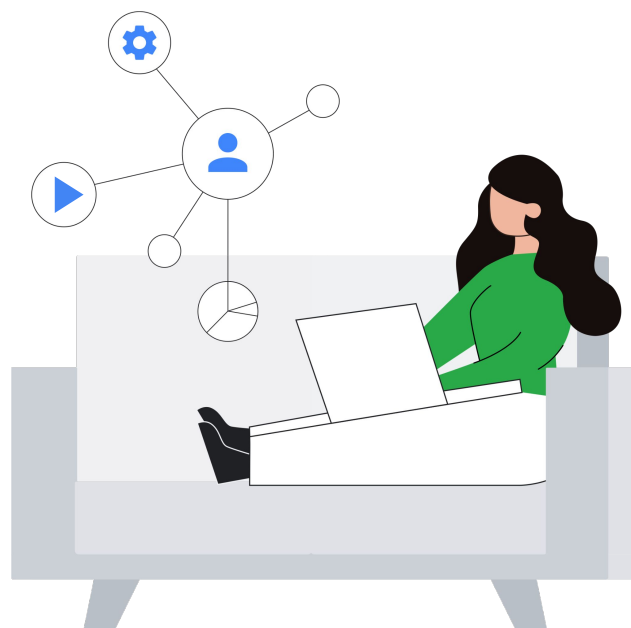
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How Google Cloud can help

Effective personalization that can be delivered at planet-scale requires vast amounts of computing power, technology, and expertise.

From world-class infrastructure to best-in-class AI tools, Google Cloud helps media companies harness the power of the cloud and unite it with the intelligence of their business.

To discuss how Google Cloud can unlock new value from your content and audiences, contact us today.

Learn more at goo.gle/cloud-media

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