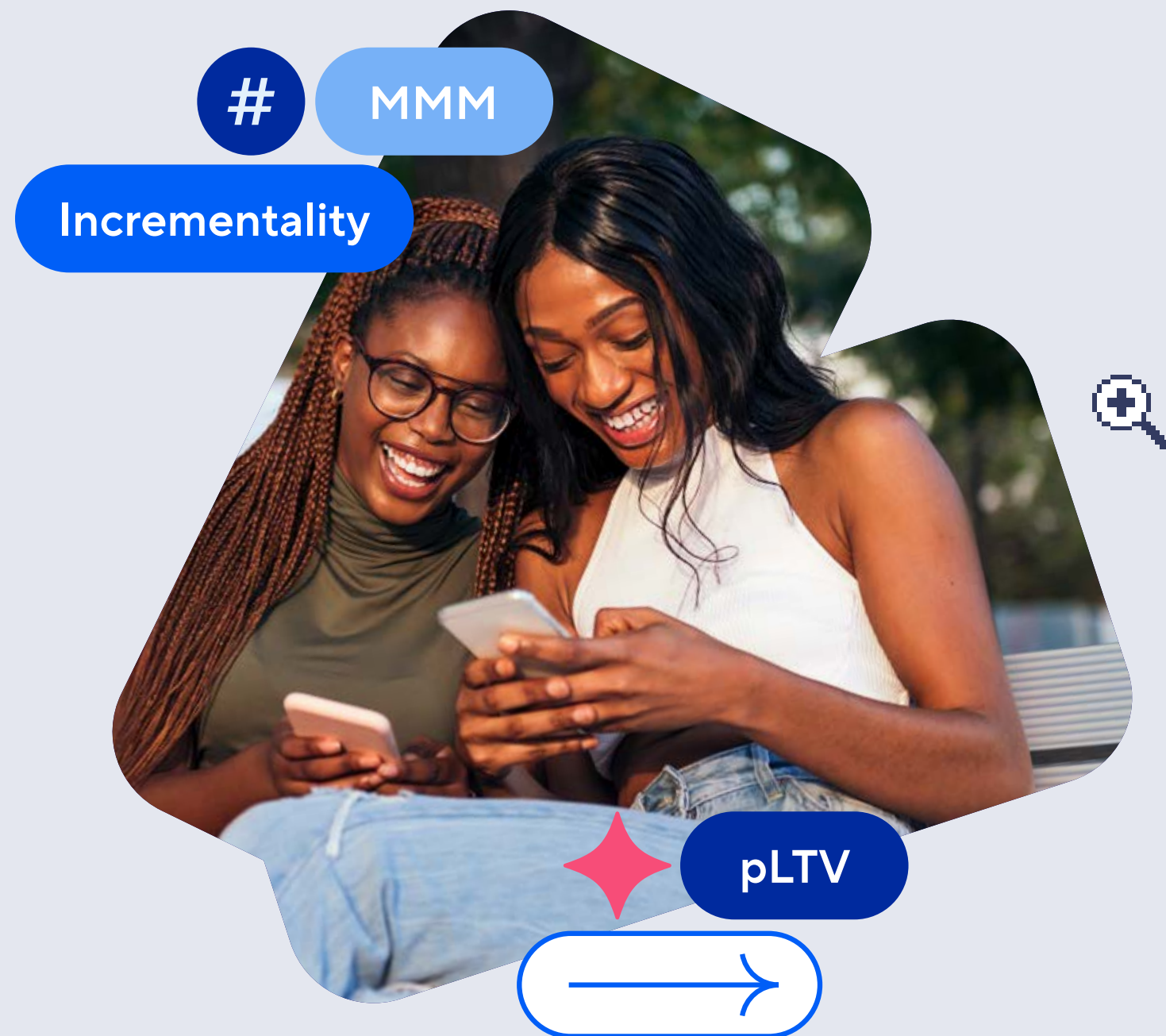




The future of mobile measurement

Enter the next generation of attribution and analytics

ADJUST



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INTRODUCTION

A transforming mobile measurement landscape

Today's mobile marketers are confronting a seismic shift in the mechanics of measurement and attribution. This new era for mobile marketing is the result of the privacy-preserving measures introduced by legislative bodies and businesses around the globe. The response from tech giants to the emergence of these standards is a move away from the device-ID-based measurement that marketers had traditionally relied upon for attribution and campaign optimization.

Apple's SKAdNetwork (SKAN) and its successor, AdAttributionKit, led the charge on this transformation, with Google's solution—Privacy Sandbox on Android—just around the corner.

One of the greatest challenges posed by this “privacy era” or “privacy-first era” is the need for marketers to navigate the aggregated, fully anonymized, and delayed data produced by these privacy-compliant measurement frameworks. The role of the mobile growth marketer has been transformed—there is now an onus on understanding, appreciating, and implementing next-generation tech solutions.

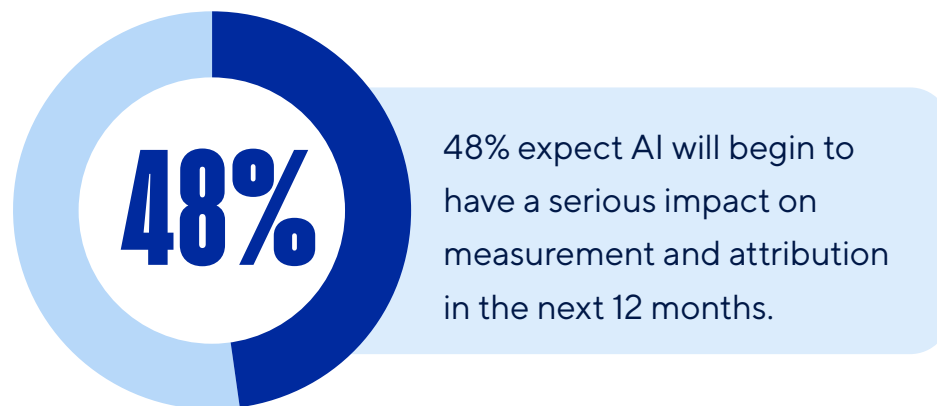
These solutions must drive growth within new and complex frameworks, matching the levels achieved by previous methods.

The shift towards next-generation measurement utilizing artificial intelligence (AI) and machine learning (ML) is rapidly gaining momentum. A growing number of marketing professionals are already prioritizing these technologies—[31%](#) consider the integration of AI and ML to be an area of focus for this year, a significant jump from just 19% in 2023. Even more striking, 48% expect AI will begin to have a serious impact on measurement and attribution in the next 12 months.



These figures underscore a trend—those who aren’t actively exploring or implementing AI and ML solutions risk falling behind their more technologically advanced competitors in the near future.

Partnering with a mobile measurement partner (MMP) offering next-generation attribution and analytics solutions—and thereby simplifying the complexities of an increasingly complex landscape—is key to scalable growth amid ongoing transformation.



KEY GLOBAL PRIVACY STANDARDS AFFECTING MOBILE MEASUREMENT

Europe

- General Data Protection Regulation (GDPR)
- Digital Markets Act
- Digital Services Act

India

- Digital Personal Data Protection Act (DPDP Act)

United States

- California Consumer Privacy Act (CCPA)
- New Jersey S332

Brazil

- Lei Geral de Proteção de Dados Pessoais (LGPD)

Next-gen solutions for sustained growth

Three of the crucial solutions that will drive the future of mobile measurement are **incrementality**, **marketing mix modeling (MMM)**, and **predictive LTV (pLTV)**, all of which are explored in depth in this report. These three pillars of next-gen measurement make campaign insights universally accessible—and campaign optimization possible—by using AI and ML to glean actionable insights from aggregated and anonymized data.

It's important to note that traditional attribution and the use of device IDs—where consent has been provided—is still a fundamental component of mobile measurement. While it is prudent for marketers to adopt a post-device-ID mindset and embrace the next-gen solutions that make sense of aggregated data sources, traditional attribution methods remain an important part of the equation. As an industry, we're developing into the spaces we're covering in this guide, while retaining our focus on the device-level attribution methods that can support, complement, or provide a basis for new tools and technologies.

Previously, leveraging AI and ML was a daunting undertaking that required substantial data science resources and time. Today's marketing world offers user-friendly AI and ML tools that marketing professionals can manage independently. These tools enhance both potential and productivity in daily workflows.

By blending these approaches into your day-to-day marketing activities, you're future-proofing your strategic approach while mitigating the risks posed by a traditional mobile measurement setup that cannot function as effectively without device-level data. You're also ensuring compliance with the privacy-centric laws and frameworks mentioned, while continuing to scale user acquisition and grow at pace.

Embracing next-gen measurement empowers you to be more agile and responsive. By adapting to changes in the market and optimizing campaigns in real-time, marketers can make data-driven decisions that maximize every dollar of marketing spend, engage target audiences, and secure competitive advantage. The results? Maximized efficiency, enhanced strategic impact, and a reinforcement of the role of marketing as a central driver of business success.



Channel diversification drives customer acquisition

Limiting your marketing efforts to mobile alone is no longer a viable strategy in today's digital landscape. As user attention fragments across multiple platforms, sticking solely to mobile risks missing out on vast segments of potential customers. Connected TV (CTV), web, PC, and gaming consoles are not just emerging channels—they're becoming essential touchpoints in the customer journey. Savvy marketers are already embracing cross-device strategies, capturing the attention of audiences precisely where they are spending their time. From display ads on desktop to in-stream video ads on CTV, these marketers are not just reaching new audiences—they're outmaneuvering competitors and driving significant growth.

The emergence of these channels as essential spaces for app marketers and developers to find audiences cannot be capitalized on without comprehensive measurement solutions. User acquisition through each of these channels requires an individualized measurement journey and attribution methodology. And whether a different channel, device, platform, or region, each new marketing initiative must also comply with the associated privacy laws and requirements.

To thrive in this multi-dimensional environment, a marketer needs a measurement partner that keeps them ahead of the curve. Solutions must provide marketers with the ability to use emerging methods to their greatest advantage, while ensuring that compliance with new (and often-updated) laws, regulations, and frameworks is absolute.

No marketing campaign should be evaluated in a silo. Partnering with a mobile measurement partner like Adjust allows you to view all marketing efforts in one place, unifying your user touchpoints and marketing data across platforms by providing raw data as well as dynamic visualizations in a single dashboard. You can understand how your campaigns interconnect on a cross-device basis, like how a CTV campaign drives conversions on mobile, and confidently make data-driven decisions to optimize.

Adjust enables marketers to prove ROI across channels, devices, and campaigns. Measure all of your marketing efforts in one place with innovative solutions that help you stay ahead of the competition. From paid to owned media, offline and beyond, everything is captured.

CROSS-DEVICE ATTRIBUTION WITH ADJUST

- ✓ **Mobile:** Robust attribution for Android and iOS
- ✓ **Web:** Measure web-to-web and web-to-app campaigns
- ✓ **Connected TV:** Monitor CTV-to-mobile and CTV-to-CTV ads
- ✓ **PC and console:** Follow users on a single and cross-device basis

PART 1

Incrementality

Incrementality


✓

#

MMM

pLTV

→



A man with dark hair and a mustache, wearing a yellow jacket over a maroon shirt, is looking down at a smartphone in his hands. He is also holding a brown paper coffee cup with a white lid. The background is a light-colored, textured wall. The entire scene is framed within a blue, rounded rectangular area that has a white border. To the right of the image, there is a red toggle switch and a white circle with a blue checkmark. Below the image, there are four icons: a blue hash symbol (#), a blue pill-shaped button with the text 'MMM', a grey pill-shaped button with the text 'pLTV', and a white pill-shaped button with a blue arrow pointing to the right. A white starburst icon is positioned between the 'MMM' and 'pLTV' buttons.

Testing for marketing influence

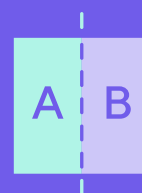
Undoubtedly a top marketing term of this year and central to conversations around the future of mobile measurement, **incrementality** leverages an A/B testing framework that allows marketers to understand the difference between conversions that happened as a result of marketing campaigns, and those that would have happened without any marketing influence.

In the post-device-ID landscape where privacy regulations dictate that more and more of the data we're using for mobile measurement is aggregated rather than granular, incrementality empowers marketers to intelligently understand, plan, optimize, and scale marketing initiatives—regardless of the data source.

As with all next-gen measurement solutions powered by AI and ML, two key benefits of incrementality are the ability to identify and save potentially wasted ad spend, and the ability for a marketer to independently conduct complex campaign analysis without incurring the wait and expense of data science input.

The technical complexities of building and implementing an incrementality solution, as well as the importance of having confidence in the data produced, necessitate partnership with an advanced MMP. This means working with a specialized solution, rather than taking this complex challenge on in-house.

THE BASICS OF INCREMENTALITY



Definition

The difference between the outcomes of changed and unchanged marketing activities.



Why do it?

Challenges in **attribution** have made measurement for campaign performance more complicated. Traditional A/B testing can be expensive, difficult, and not always feasible.



How is it calculated?

It is calculated counterfactually, which tells us what would have happened if **nothing was done in the first place**.



Use case

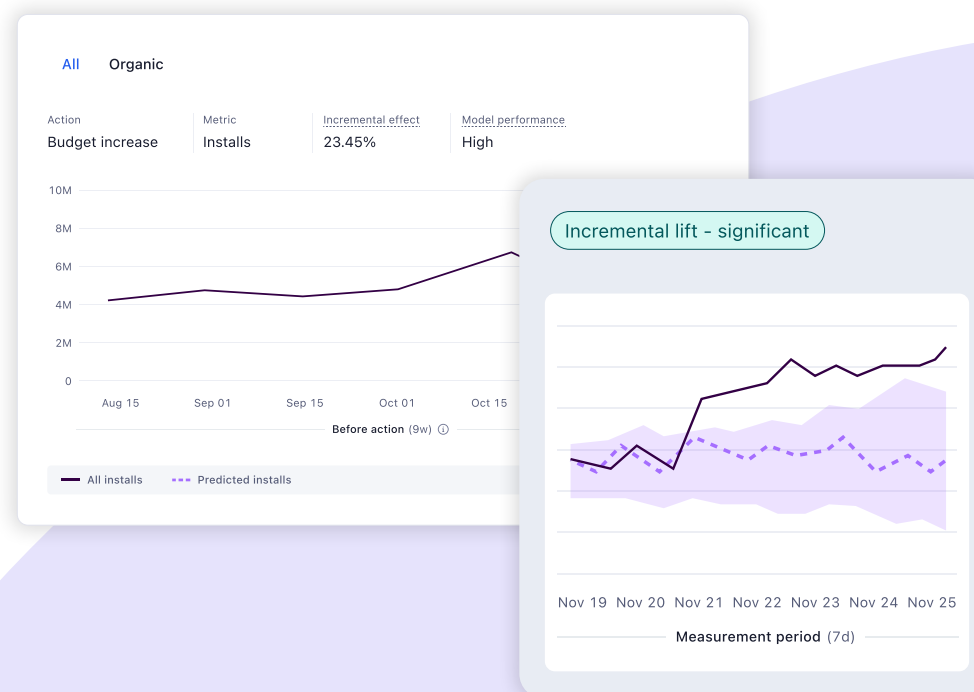
The marketing team has launched a **new** campaign in the **U.S.**, targeting installs for their **iOS** app. The goal is to see if the new campaign has any **incremental** effect and, if so, what type of effect.

Introducing InSight

Adjust's next-gen incrementality solution powered by AI and ML—[InSight](#)—is precision-designed to meet the needs of modern growth marketers. InSight offers a game-changing, modern approach to incrementality analysis. Its key strength lies in its ability to eliminate doubt around the organic cannibalization of your campaigns. Organic cannibalization refers to events or installs that would have occurred naturally without the marketing initiative. By identifying these, InSight helps you understand the true impact of your marketing efforts.

By identifying which campaigns or channels are most effective, InSight allows you to intelligently optimize your spend and allocate resources to high-performing campaigns while reducing ad budget wasted on ineffective ones. In the face of tightening budgets and increased scrutiny over marketing spend, incrementality testing provides concrete data to justify marketing dollars.

InSight is proving invaluable to marketers who are having difficulty understanding which campaigns are responsible for quality installs. The ability to access such insights in real-time enables confident and quick decision making, and informed and less wasteful allocation of budget.



“Incrementality is all about marketing influence. So it’s going beyond that last touch and these methods that we’re used to, and seeing the impact of your marketing efforts. Your audience is making purchases, for example, but how much more are they purchasing as a result of your marketing efforts?”



Nicoline Strøm-Jensen
Head of Program Management

ADJUST

Incrementality use cases

WAYS TO LEVERAGE INCREMENTALITY TESTING

Needs

Seasonality testing



Solutions

Uncover when it's valid to increase budget and when it's best to ride the organic wave

Advertising channel discovery



Verify if new channels are bringing any incremental value

Platform-based optimization



Identify which channels are better optimized for iOS and Android

Ad fatigue detection



Get clear indications about when your campaigns are not moving the needle

ANALYSIS SETUP

Focus on **one target variable** and **pick your dimensions** to make your insights even more precise.



Target variable

- 1 Installs
- 2 Events



Dimensions

- 1 App
- 2 Platform
- 3 Country

Incrementality in action

One of our first customers to test InSight was the sleep-tracking app Sleep Cycle. Benefits realized by Sleep Cycle include:

- ✓ A clearer view of iOS campaign data, which had appeared opaque and hazy following the implementation of SKAN.
- ✓ The ability to confidently pinpoint the campaigns responsible for quality installs.
- ✓ Reliable detection of significant organic cannibalization (for one campaign, this level was 50%).
- ✓ Campaign optimization to remove budget allocation where installs would have come organically.
- ✓ Identification of a partner contributing to incremental lift for Android but having the opposite effect on iOS.

Read our full Sleep Cycle case study



“Understanding the incremental value of our marketing endeavors empowers us to not only strategize with precision based on our ad spend but also to confidently allocate our marketing budget, ensuring wise investment. This approach enables us to derive an accurate return on ad spend (ROAS), turning insights into actionable strategies that drive our business forward with unmatched efficiency and effectiveness.”

Linnéa Gosh
Digital Marketing Analyst

 Sleep Cycle

PART 2

Marketing mix modeling (MMM)



Full-scope marketing analysis to optimize ROI

One of the most transformative developments in the future of mobile measurement is **marketing mix modeling**, or MMM, as a way to analyze and forecast marketing success. In some ways similar to incrementality, it represents a broader marketing outlook and the ability to bring multiple variables into play.

MMM is a statistical analysis technique that measures a wide range of marketing activities to determine their impact on an app's ROI. For instance, it can analyze how TV ads, social media campaigns, and email marketing collectively contribute to app installs and revenue. It also factors in external influences such as promotional events, seasonal trends, and even press coverage, providing a comprehensive view of what drives your app's success.

Where incrementality allows marketers to use synthetic control groups to explore and test a campaign's impact, to develop an understanding of which marketing efforts are providing paid lift, MMM takes this a step further by making it possible to generate predictions of how each factor being tested will impact a long-term marketing strategy. This crucial information enables marketers to plan budgets accordingly and maximize every marketing dollar.



The true value of MMM lies in its ability to empower marketing professionals by making it possible to determine not only where to allocate marketing budget but how much to invest in each channel to optimize performance against KPIs.

A product of marketing in the post-device-ID landscape where aggregated data is becoming the norm, MMM is increasingly accessible because of advances in ML. It has the power to significantly assuage a key concern of today's marketers—the worry that budget allocation has not been optimized and that, as a result, there is the potential for vast amounts of ad spend to be wasted. A marketer keen to understand the exact recipe for success needs a full picture of the right mix of elements required to achieve it.

THE BASICS OF MMM



Definition

A **statistical analysis technique** that evaluates and forecasts the relationship between marketing inputs and key performance indicators (KPIs).



Why do it?

Helps to make **informed decisions** about advertising and marketing strategies by uncovering the **recipe for success**, identifying which marketing activities contribute the most to sales or conversions.



How is it calculated?

A **regression analysis** model estimates the impact of each predictor on the known outcome.

- **Dependent variable** (response or outcome), e.g. weekly revenue.
- **Independent variable** (prediction), e.g. ad spend, distribution of channels.



Use case

The marketing team wants to understand if their **budget** is being **allocated effectively**. Using the MMM model, they can see the projection of the impact of their budget in order to proactively make changes.

Directional decisions that drive growth

HOW DO ATTRIBUTION, MMM, AND INCREMENTALITY INTERACT?



Attribution

Know in the **short-term** how to optimize your campaigns down to the most granular level—creative, country, ad, etc.—across platforms from mobile to CTV.



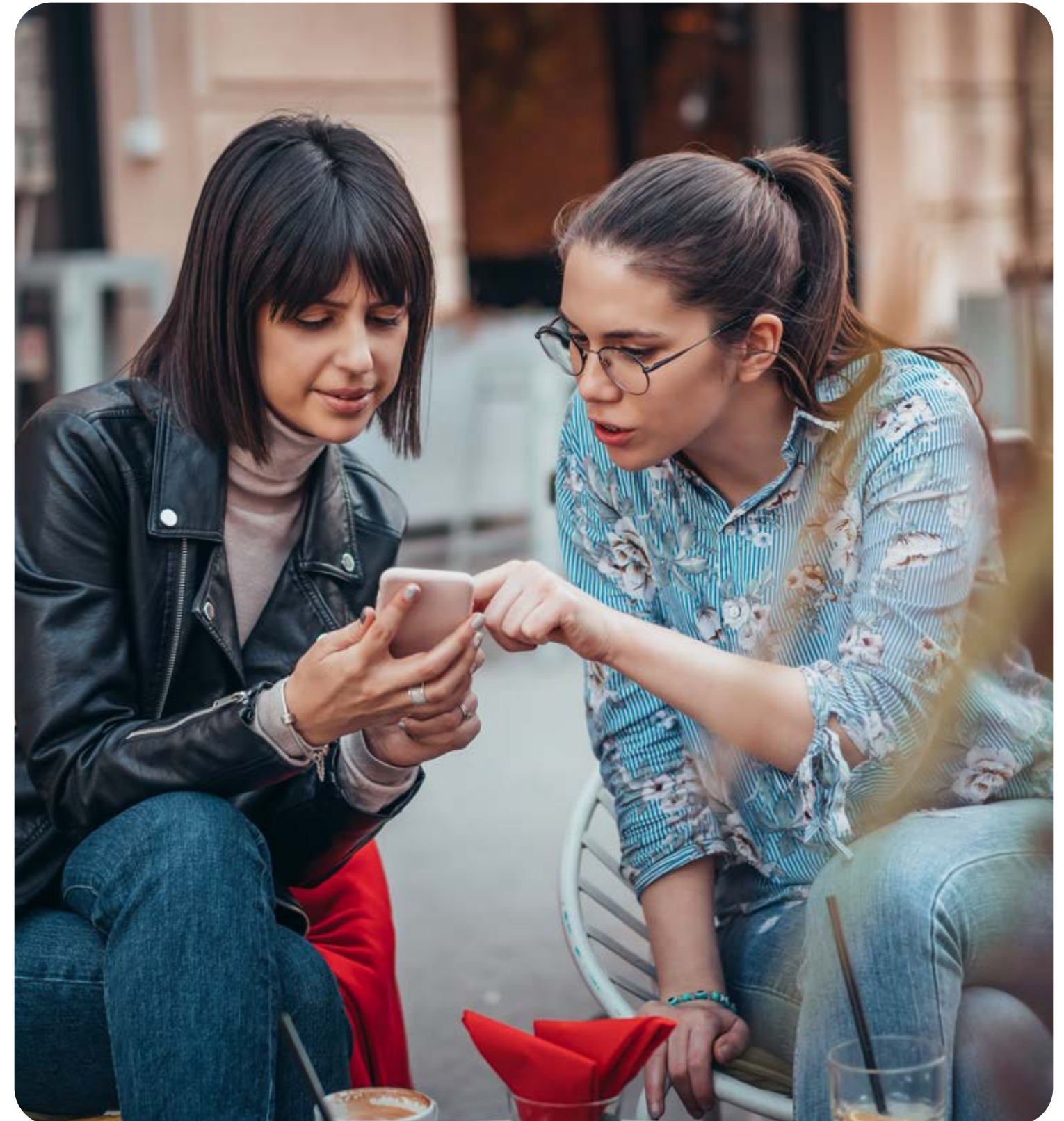
Incrementality

Test new channels, campaigns, and markets in the **mid-term** with always-on incrementality. Know the channels that are cannibalizing organic vs campaigns driving paid lift.



MMM

Marketing mix modeling is a perfect pairing for **long-term** strategic planning. Forecast the best allocation of your budgets across all marketing efforts, not just those that can be attributed.



Mastering MMM with Adjust

Adjust's reputation as a market-leading innovator reflects our commitment to continually developing transformative mobile measurement solutions. Coming down the tracks next is the addition of a next-gen MMM solution to the Adjust dashboard.

Our anticipation and excitement as we work toward this launch is driven by the game-changing impact that MMM has when added to a marketer's arsenal. It represents a significant leap forward in long-term marketing planning, providing precise, data-driven channel spend recommendations.

The initial feedback from our customer testing has been extraordinarily positive. We're seeing customers gaining the ability to accurately pinpoint optimal daily spend per channel, ensuring maximum efficiency in driving app installs while avoiding channel over-saturation.

USING MMM TO ANSWER CRITICAL QUESTIONS

- Where should I allocate my budget?
- How does changing an in-app purchase price impact my sales?
- How does my specific channel distribution impact my conversions?
- What's the ROI of each of my marketing channels?
- Where should my ad spend go in future?
- What is the impact of external factors on my total revenue?
- How are earned, owned, and paid media contributing to my company's ROI?

"Our MMM product helps optimize budget allocation for complex actions like setting up recurring deposits, and provides insights into hard-to-measure activities like influencer marketing and referral programs. This expanded analysis increases the measurable impact of your marketing and maximizes the value of every dollar spent."

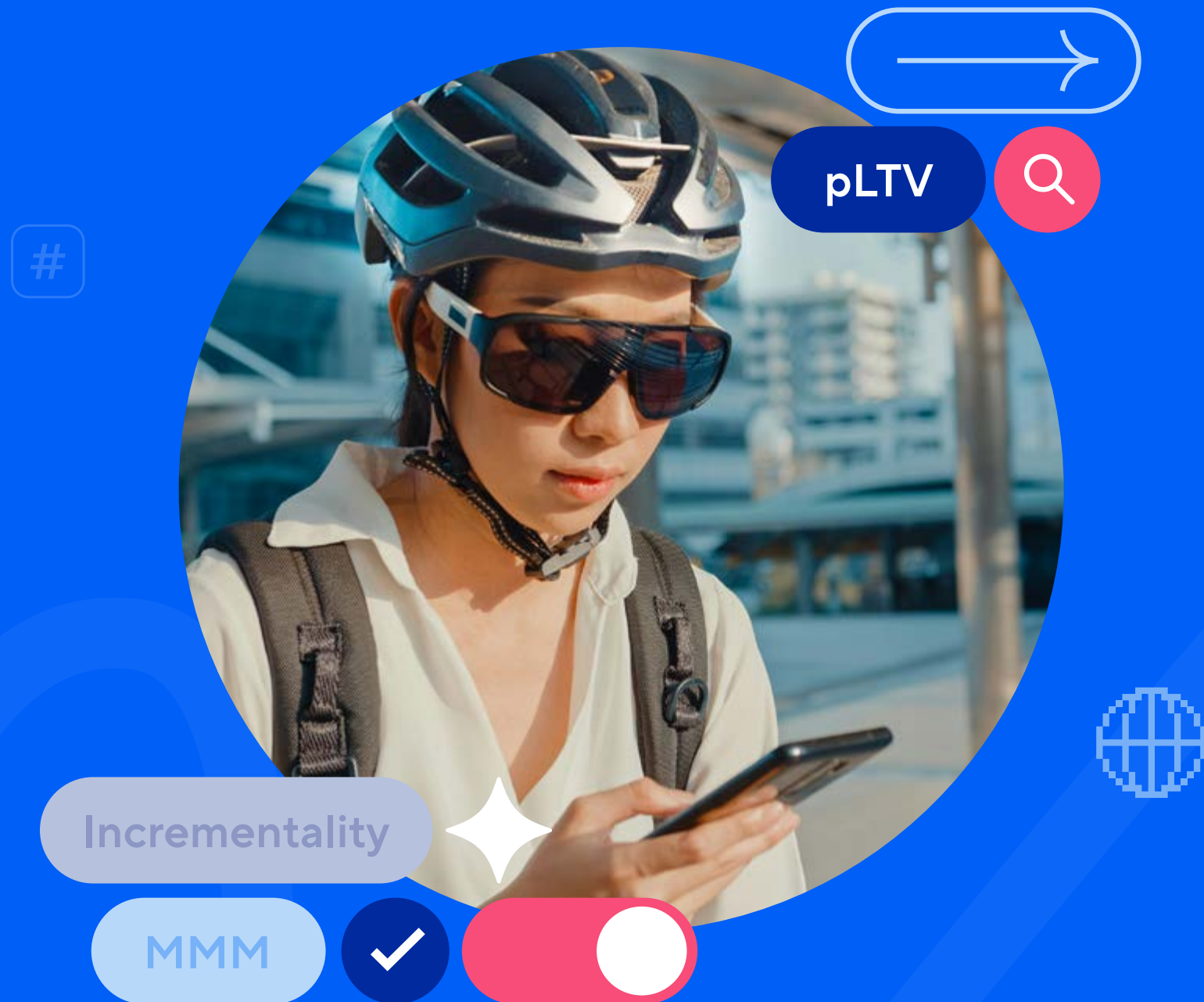


Egor Lukomsky
Chief Technology Officer

ADJUST

PART 3

Predictive LTV (pLTV)



Intelligent forecasting in real-time

The advent of the privacy era and its significant impact on the availability of granular data—resulting in our increasing reliance on aggregated data—has put an onus on **predictive analytics** to shape marketers’ understanding of future outcomes.

Basic data analytics is no longer enough—our strategic use of automated next-gen technology is a must to understand campaign performance to the fullest extent possible and seek continual optimization and scalable success.

By harnessing the power of AI and ML, predictive programs intelligently process raw campaign data to produce patterns and trends that inform predictions of future outcomes. In modern mobile marketing, this form of forecasting is key as we navigate the complexities of privacy-centric frameworks such as Privacy Sandbox on Android, SKAN, and AdAttributionKit. The industry’s increasing reliance on predictive analytics is driving the development of more complex and capable modeling that enables campaign optimization based on data from very early stages in the user lifecycle. This allows for fast and precise understanding of users, meaning ad spend can be focused on the most valuable channels, campaigns, and cohorts.

One of the most effective ways marketers can engage predictive tech for early-stage optimization is generating **predictive lifetime value (pLTV)** data. pLTV helps to sharpen campaigns by identifying and targeting the highest LTV opportunities—users predicted to spend the most over time. For example, if pLTV indicates that users from a particular ad campaign are likely to spend 50% more than average, marketers can allocate more budget to that campaign. In this way, pLTV acts as a guiding measure for efforts to boost long-term revenue, allowing for more strategic resource allocation. pLTV is most effective when used early in a campaign’s lifecycle. Today’s cutting-edge predictive technology can generate figures as early as day one of a campaign. This timely insight allows for immediate optimization, which has the greatest impact on overall campaign performance.










To realize the power of predictive modeling, collaborating with a mobile measurement partner is essential. The predictions created by advanced measurement partners utilize synthetic control groups to act as a base for comparison. By creating a control group with variables (such as user behavior and demographics) matching the active test group exposed to an ad, marketers can make comparisons and build a clear picture of where they can optimize campaigns to avoid wasted ad spend.



Leveraging predictions

PROJECTING THE FUTURE

-  **THE GOAL**
Optimize campaigns based by evaluating different cohorted metrics (such as revenue at day 14) to spend wisely and maximize growth
-  **THE PROBLEM**
While you're waiting to reach these cohorted metrics, you could be wasting budget and time on campaigns that are not performing
-  **THE SOLUTION**
An AI-based solution uses an ML model capturing signals from the early in the user journey to predict future user value and behavior, for example what you'd expect to see weeks after install

-  Waiting period avoided
-  Opportunity to scale at the earliest point
-  Budget can be allocated efficiently
-  Pause non-performing campaigns

HOW DOES PREDICTIVE ANALYTICS WORK IN MOBILE MARKETING?

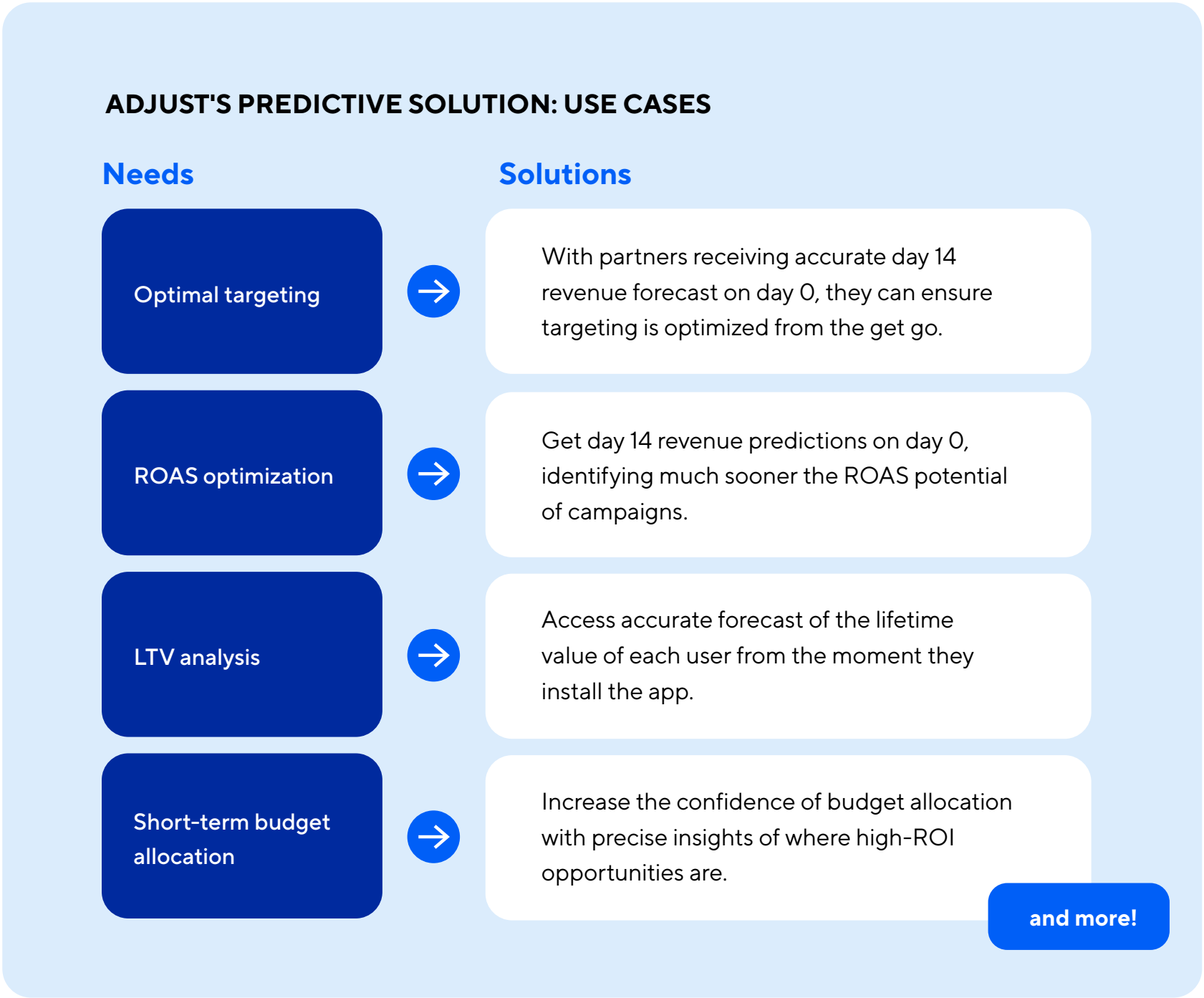
- 01** Marketers run campaigns as usual
- 02** Predictive platform analyzes campaign performance against industry benchmarks, which act as the control group
- 03** Model predicts the outcome of the campaign if the marketer had not adjusted a test variable, such as a creative, channel, or budget

Adjust's investment in predictive analytics

With [34% of marketers](#) expecting predictive targeting and bidding to be a key outcome of investment in AI, Adjust is leading the way in product development and investment. Using predictive modeling to optimize campaigns in real-time—rather than waiting weeks to receive data that may or may not be useful—enables marketers to confidently allocate marketing budget and avoid wasted ad spend.

Adjust's solution will allow you to predict the LTV of new users within 24 hours with 95% accuracy. This works by using early signals of user behavior to predict their value and allows you to immediately take advantage of high-value users across key channels.

Powerful and fast insights like these are even more fundamental in a privacy era reality where aggregated data is increasingly becoming the norm. Our focus remains on timely campaign optimization, with predictions providing the actionable insights that allow marketers to thrive, continually fine-tuning strategies and maximizing ROI in real-time.



CONCLUSION

Embrace transformative tech and industry expertise to thrive

The complications facing marketers in the privacy era warrant an important directional change from the measurement and attribution methods that have traditionally powered campaign performance in mobile marketing. To thrive in this new environment and ensure compliance with emerging privacy-preserving measures, marketers must engage with next-generation tech that leverages AI and ML to truly benefit from game-changing, data-driven insights.

Privacy-centric frameworks such as SKAN (+AdAttributionKit) and Privacy Sandbox on Android impose a delay on user data before making it available to be measured, but marketers still require and rely on timely insights. In fact, [44% of marketers](#) expect the main benefit of AI in measurement and attribution to be increased speed, i.e. real-time insights into marketing performance enabling real-time adjustments to budget allocation.

While device-ID-based measurement continues to have important use cases, this aggregated, anonymized, and delayed data is becoming the norm. And it demands a changed approach and tech stack. Incrementality, marketing mix modeling, and predictions are critical building blocks in the future of mobile measurement, a future that continues to necessitate a partnership between marketer and mobile measurement partner to realize greatest rewards and scalable growth.

The challenges of rapidly generating more insights from a cloudier pool of data are met by combining the power of next-generation tech with the industry expertise of market-leading mobile measurement. Adjust has a finger firmly on the pulse of the latest developments in mobile marketing. Our solutions simplify the complexities of an increasingly complex landscape, ensuring scalable growth amid ongoing transformation. Marketers are empowered to realize the competitive advantage to grow their apps at pace.

In an industry that experiences change continually, the emergence of sophisticated tech will not stop here. We have no doubt that measurement and attribution innovation will continue, meaning that an investment in incrementality, marketing mix modeling, and predictions is prudent for today and tomorrow.



Ready to embrace the future of mobile measurement?

Talk to one of our experts about how innovative tech can support your marketing campaign optimization and accelerate your app's growth

[Request a demo](#)

Join **165,000+** apps that trust Adjust for growth





ABOUT ADJUST

[Adjust](#), an AppLovin (NASDAQ: APP) company, is trusted by marketers around the world to measure and grow their apps across platforms, from mobile to CTV and beyond. Adjust works with companies at every stage of the app marketing journey, from fast-growing digital brands to brick-and-mortar companies launching their first apps. Adjust's powerful measurement and analytics solutions provide visibility, insights and essential tools that drive better results.

Learn more about Adjust at:

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