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Cookies crumble:

Marketing in a world without third-party treats

Executive summary

As third-party cookies phase out, the digital advertising landscape is experiencing a significant transformation, steering the industry toward a more privacy-conscious yet data-driven approach.

While losing third-party cookies presents challenges, it also offers advertisers the opportunity to pivot toward more direct and privacy-compliant data collection methods. The future of digital advertising lies in strategically enabling and utilizing first-party data.

Advertisers must now adapt by focusing on building robust first-party data strategies, which involves developing new, innovative targeting methods and investing in advanced data management technologies.
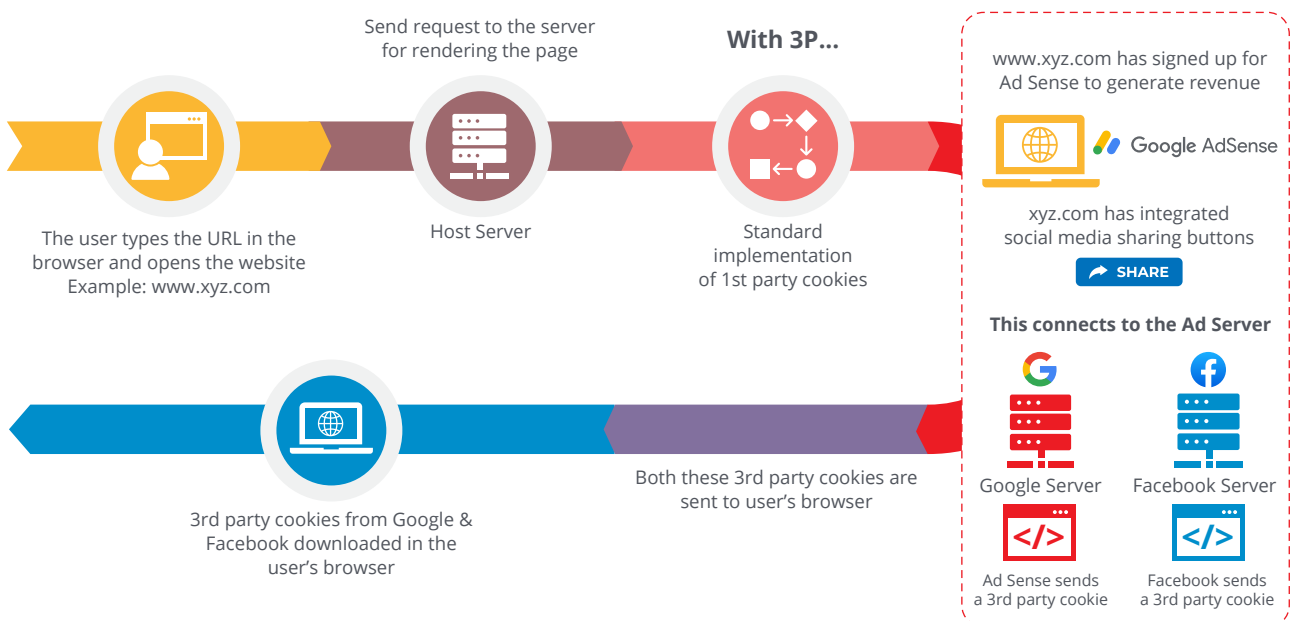
This shift is not just about compliance; it is about harnessing the power of AI and Generative AI (GenAI) driven solutions that can effectively leverage first-party data to create powerful, targeted campaigns. These AI-driven strategies do more than just mitigate the impact of losing third-party cookies — they pave the way for a new era of more intelligent, efficient, and privacy-compliant digital advertising.

What is the shift and how does it impact advertising dynamics?

Ad Targeting - Third-party Cookies

Illustrative User Journey
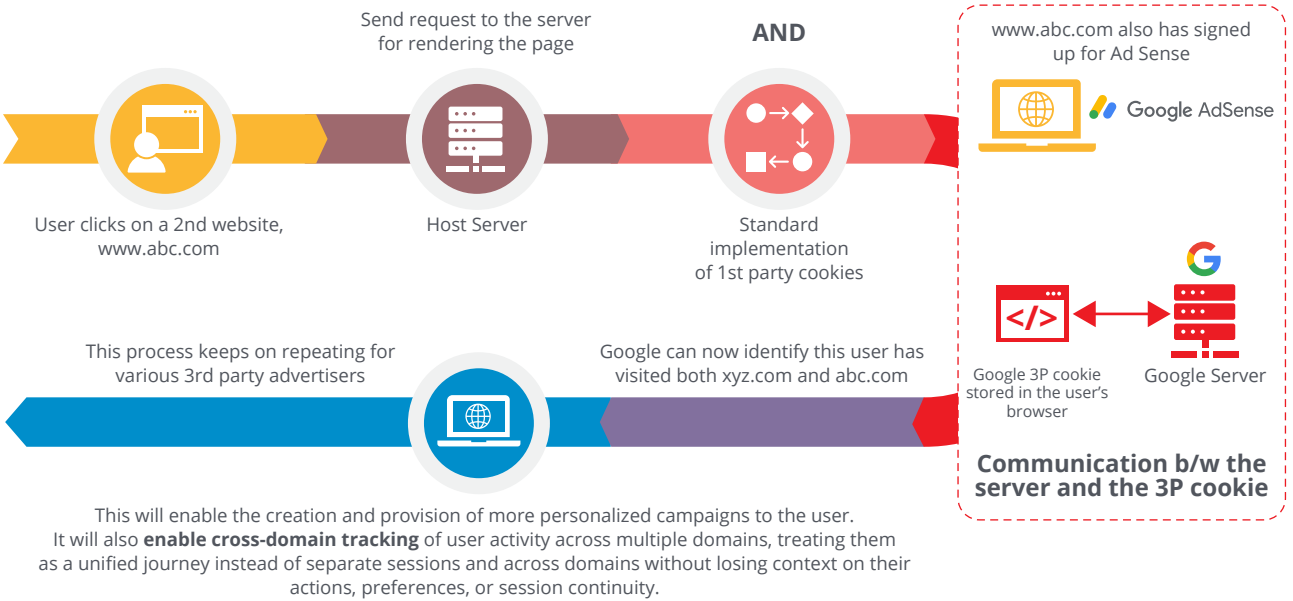
Step 1

The user types the URL in the browser and opens the website
Example: www.xyz.com

Host Server

Send request to the server for rendering the page

With 3P...

Standard implementation of 1st party cookies

www.xyz.com has signed up for Ad Sense to generate revenue

Google AdSense

xyz.com has integrated social media sharing buttons

SHARE

This connects to the Ad Server

Google Server

Facebook Server

Ad Sense sends a 3rd party cookie

Facebook sends a 3rd party cookie

3rd party cookies from Google & Facebook downloaded in the user's browser

Both these 3rd party cookies are sent to user's browser

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Step 2

Send request to the server for rendering the page

AND

User clicks on a 2nd website, www.abc.com

Host Server

Standard implementation of 1st party cookies

www.abc.com also has signed up for Ad Sense

Google AdSense

This process keeps on repeating for various 3rd party advertisers

Google can now identify this user has visited both xyz.com and abc.com

Google 3P cookie stored in the user's browser

Google Server

Communication b/w the server and the 3P cookie

This will enable the creation and provision of more personalized campaigns to the user. It will also **enable cross-domain tracking** of user activity across multiple domains, treating them as a unified journey instead of separate sessions and across domains without losing context on their actions, preferences, or session continuity.

Figure 1: Ad targeting – third-party cookies

Ad Targeting Revised with First-Party Cookies

Step 1

Request server for page renderation

Host Server

User enters URL into the browser. Example: www.xyz.com

Cookies get stored in the user's browser as the page loads and displays

The host server delivers the web page and first-party cookies to the user's browser

The info collected here will be used in step 2 by the ad serving platforms to devise more precise targeting.

Step 2

Before redirection, a consent pop-up prompts the user to approve pixel tracking. Consent enables Facebook to capture their first-party data

CONSENT

The same user visits a social media site (e.g., Facebook) and clicks a generic display ad for www.xyz.com, with a unique string appended to the link.

The user is redirected to the www.xyz.com web page

Facebook leverages its first-party data (collected with consent earlier in Step 2) to match with www.xyz.com's first-party data, enabling the display of personalized ads for www.xyz.com to the user

The pixel on the brand's site (from Step 1) transmits the stored first-party data to Facebook

Figure 2: Ad targeting revised with first-party cookies

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The era of third-party cookies is ending, reshaping digital advertising. Traditionally, they enabled cross-site tracking, data aggregation, and user profiling for personalized ad targeting. With their phase-out, brands must pivot to first-party data strategies, collecting user data directly through their platforms and securely managing it with methods like server-side tagging.

In this new model, brands share first-party data with ad networks for personalized targeting, while ad networks leverage their own first-party data for broader audience segments. This shift prioritizes data security, privacy compliance, and direct ownership, fostering deeper customer relationships.

AI further amplifies this transformation, enabling hyper-personalized experiences at scale while adhering to strict privacy standards. Together, first-party data and AI empower brands to lead in a privacy-first advertising landscape.

Stakeholder	Dimension	Third-party (3P) advertising	First-party (1P) advertising
Brands	Control on data	Very little control over data quality and sources, and privacy is not taken care of	Full control and ownership of data; privacy is supreme
	Audience and reach	Broad reach, including non-direct customers	Limited to known customers and audiences
	Precision of targeting	Highly granular, cross-platform targeting possible	Ultra precise for known customers but limited for new users. Cross platform targeting is not feasible
	Compliance	Complex, high risk of non-compliance	Compliance warranted through direct consent
	Efficiency of ad spend	Potentially lower efficiency due to data redundancy	Higher efficiency
Ad exchanges	Access to data	Vast data from multiple sources	Contextual and first-party data
	Precision of targeting	Targeting options are highly granular but with lower contextualization	Granularity of targeting will be reduced but will be highly contextual
	Compliance	Complex, high risk of non-compliance	Compliance warranted through direct consent
	Privacy & control	Low control; data shared across multiple parties	Greater control; direct engagement with brands
	Relevance of ads	Relevant but may feel intrusive	Relevant to known brands, less intrusive

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Customers	Trust & experience	Lack of trust as their data is widely shared which leads to ad fatigue and distrust	Higher trust due to direct consent, lesser ad fatigue and positive experiences with trusted brands
	Transparency	Low transparency; customers often don't know which third parties have access to their data	High transparency, as customers know they're engaging directly with brands and can control the data that is being shared
	Variety in types of ads being served	Higher exposure to ads from a wide range of brands, increasing product discovery	Reduced variety as ads are primarily from brands they already interact with; fewer discovery opportunities

Figure 3: Stakeholder, parameter, 3P advertising and 1P advertising

The phase-out of third-party cookies signals a new era for digital advertising — one that prioritizes privacy and leverages data more strategically. In this landscape, first-party data becomes the backbone of advertising. By investing in AI technologies, businesses can successfully navigate this transition and unlock new opportunities for smarter and more effective digital marketing.

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Role of 1P data in creating advertising strategies

While third-party cookies have long enabled marketers to track user behavior and deliver personalized ads, their limitations extend beyond privacy concerns. Issues such as media waste and inaccurate targeting have plagued this approach, underscoring the need for more effective strategies. Consider the following insights:

Inaccurate targeting	Missed opportunities	Media insufficiencies
3P cookie-based targeting is inaccurate leading to inefficient ad spend	Potential conversions are lost due to miscommunication which reveal gaps in 3P data strategies	Majority of the media spend fails to achieve expected reach, highlighting inefficiencies in 3P cookie reliance

First-party data provides authentic, high-quality signals for accurate contextual targeting, creating customer cohorts and recommendations aligned with real interests. Unlike cookie-based behavioral targeting, contextual targeting matches ads to the content being consumed, ensuring relevance while respecting privacy. This approach outperforms third-party cookies, offering fewer but more effective signals for engagement and conversions.

Overall, with increasing privacy concerns and the limitations of third-party cookies becoming apparent, the industry is moving toward more reliable, privacy-compliant 1P data strategies. Consumers demand greater transparency in how their data is used, leading to a rise in organizations that effectively capture and utilize first-party data

Recent global trends
Organizations implementing at least one advanced 1P data activation, such as audience segmentation, hyper-personalization, or cross-channel journeys, experience a 1.5x increase in revenue. Those engaging in four advanced activations see a 2.9x boost, with the introduction of GenAI significantly enhancing these activations (Oundjian et al., 2020).

Key takeaway
The transition from third-party cookies will certainly affect how targeting is done, but it is crucial to understand that relying on third-party data often compromises effectiveness. Transitioning to first-party data isn't a step backward. On the contrary, it provides brands with a more accurate, effective, and transparent method to connect with their audiences.

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Organizations are leveraging rich 1P data to optimize customer journeys

Retail brands building loyalty programs
Sephora has built an extensive loyalty program called Beauty Insider, which allows the brand to collect first-party data directly from customers, including purchase history, preferences, and interactions across its website, app, and in-store visits (Sephora, 2023; Waldow, 2024).

Media companies developing subscriber models
The New York Times has transitioned to a subscription-based model, encouraging readers to create accounts (Robins, 2024). This approach enables the collection of valuable first-party data such as reading habits, article preferences, and subscription details.

Streaming services utilizing viewer data
Netflix tracks viewers' watch history, ratings, and interaction patterns to gather first-party data (Netflix, n.d.). This information helps develop personalized content recommendations and informs content production decisions.

Automotive companies using connected car data
Tesla collects first-party data from its vehicles, including driving habits, vehicle performance, and in-car preferences (Renascence, 2024). This data enhances the driving experience and improves safety features through over-the-air updates.

Benefits:
- Enhances customer engagement and loyalty through personalized experiences
- Maintains user privacy and data ownership while optimizing marketing strategies
- Empowers data-driven decision-making for product and content development
- Reduces dependence on third-party data sources, fostering a more reliable data ecosystem

How will customers be impacted?
Mostly, the change will be a boon from the customer's perspective:
- Tailored recommendations and offers will make interactions more relevant for customers
- Smoother cross-channel experience
- Genuine rewards: Offers and discounts will be relevant to customers' interests, making loyalty feel special
- Customers will have more transparency and control over their data
- Ads will be more targeted, reducing irrelevant noise

A few areas, however, may be compromised:
- Exposure to newer products outside a customer's preferences will be limited
- The strategy is less relevant for people who engage less, as personalization may feel lacking if they don't engage often

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Elevating customer engagement and precise targeting

While first-party data offers significant advantages over third-party data, it also introduces challenges marketers must navigate. Understanding these changes is crucial for adapting strategies to maintain effective customer engagement in this new environment.

One of the most significant changes is the reduced amount of data available for digital marketing processes. In the previous third-party cookie system, user behaviors were tracked across multiple sites, enriching customer profiles with data from various sources, including brand and partner sites. This extensive data collection allowed for comprehensive customer profiling. However, in a first-party data environment, data collection depends entirely on user consent. The amount of information gathered hinges on whether customers choose to share their data, which can significantly limit the overall insights available for enriching customer profiles.

Moreover, the time window for retaining customer interaction data is considerably shorter in a first-party context than in a third-party one. For instance, in Safari, cookies and associated data are deleted after seven days of inactivity. If a user does not interact with a website within this time frame, they are recognized as a new visitor upon their next visit. In cases of anonymous sessions, data is further restricted to current device interactions and behavioral patterns only, lacking historical context that was previously accessible through third-party cookies.

The implications of these changes are profound:
- **Customer identity resolution:** Changes in data tracking complicate customer identity resolution, hindering effective brand engagement
- **User prospecting and retargeting:** The removal of third-party cookies demands a rethink of retargeting strategies, shifting focus from detailed historical data to distinguishing known users for personalized targeting and anonymous users for broader, interest-based approaches
- **Personalization methods:** Personalized targeting now hinges on real-time session data, requiring rapid processing to enhance the user experience during active sessions

In this new landscape, first-party data becomes essential, making customer consent crucial for its acquisition. To secure this consent, brands must engage customers more directly by building trust and offering compelling content and experiences. Transparent communication about data usage and delivering value in exchange for shared information is vital for fostering deeper customer relationships and ensuring compliance with regulations. Marketers can strengthen their connections with customers by improving personalized experiences through reliable first-party data in this evolving digital ecosystem.

In the following sections, we will discuss the application of advanced AI and the significance of understanding and incorporating human emotions in driving a higher degree of personalization and contextual recognition, and how this contributes to building deeper customer relationships.

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New advertising landscape: The cookieless strategy

The strategy

So, does a cookieless future mean lower conversions and lower click-through rates? The strategic digital marketer would recognize that there is more nuance to digital marketing than what third-party cookies offer. To truly thrive, organizations need a solid foundation where 1P data, enhanced with additional data sources, is utilized to create comprehensive customer profiles. Here's what an effective cookieless strategy might involve:

| Step 1: Set up omnichannel analytics	Step 2: Enable real-time personalization and intelligence	Step 3: Orchestrate user journeys for creating personalized campaigns	Step 4: Use the first-party data collected in the above 3 steps to drive advertising
Analyze online and offline data to identify the "ant trails" that guide unknown prospects to become consenting customers. Feed this data into a CDP for profile creation, identity resolution, and enrichment.	Use the profiles created in the CDP for initial efforts w.r.t. real-time activation to engage with the customers by personalizing experiences on every click, directing them on the path to purchase.	Identify and develop user journeys for the consented customers by understanding customer behavior across channels and applying that data to map out personalized campaigns. This strategy is designed to transform them into high CLTV customers, ensuring sustained interaction and loyalty.	Use unified first-party data that is augmented with second-party exchange data. This combination enhances targeting by providing precision and delivers more meaningful ad experiences at scale.
Steps 1 & 2 ensure the continuous collection and enrichment of first-party data.		Steps 3 & 4 leverage the data collected in Steps 1 & 2, creating a seamless and powerful marketing ecosystem.	

The Cookieless Strategy
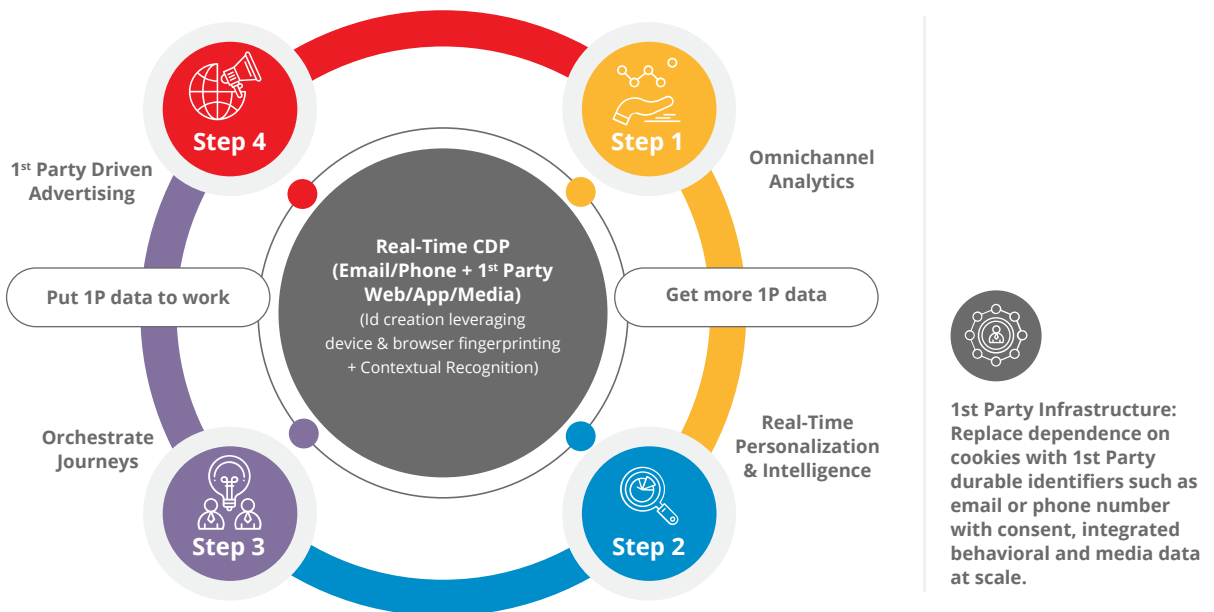
Figure 4: The cookieless strategy

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> The cookieless future requires a shift in how brands approach customer acquisition and engagement. By centering their strategies on first-party data, consent, and personalization, organizations can continue to drive advertising success at scale while fostering deeper, more trusted relationships with their audiences.

AI-driven solutions key to implementing a cookieless strategy

To develop an effective marketing strategy, first-party and second-party data offer valuable insights when effectively utilized through advanced AI and innovative techniques. In alignment with a cookieless approach, marketers should consider adopting the following new-age solutions:

Server-side tagging elevates data privacy and quality in 1P data collection

In an era where data drives business decisions, the importance of accurate tracking and analytics cannot be overstated. However, traditional client-side tracking methods have inherent limitations, including challenges related to data accuracy, privacy concerns, and compliance with regulations such as GDPR. In client-side tracking, data is sent directly from the user's browser (client) to the tracking platform's server, which can expose it to potential vulnerabilities. Server-side tracking addresses these challenges by routing user data to the website's server first, before transferring it to the tracking platform. This approach enables more robust data collection, enhanced control over data processing, and improved compliance with evolving privacy standards.

The role of server-side tagging in 1P data collection:
Improved data quality and accuracy: Data collected via client-side tagging (browser-based) can be affected by ad-blockers or browser restrictions (such as ITP or ETP), which hinder the capture of 1P data. Server-side tagging mitigates these issues, leading to more reliable 1P data collection and higher data quality.

Privacy and compliance: With server-side tagging, businesses can ensure compliance with privacy laws by maintaining control over what data is collected and shared. Strict access controls can be implemented, ensuring that only data falling under the 1P category (as per the laws) is captured.

Adaptability to market changes: As browsers continue to implement more stringent privacy measures and block third-party cookies, server-side tagging offers a sustainable method for collecting data without relying on client-side cookies.

Data portability: Server-side tagging can help create a robust first-party data strategy by making it easier to move data between different systems (e.g., from your website to a Customer Data Platform).

Overall, server-side tagging enhances the efficiency and security of first-party data collection, which is crucial for building a solid data foundation in a privacy-conscious digital landscape.
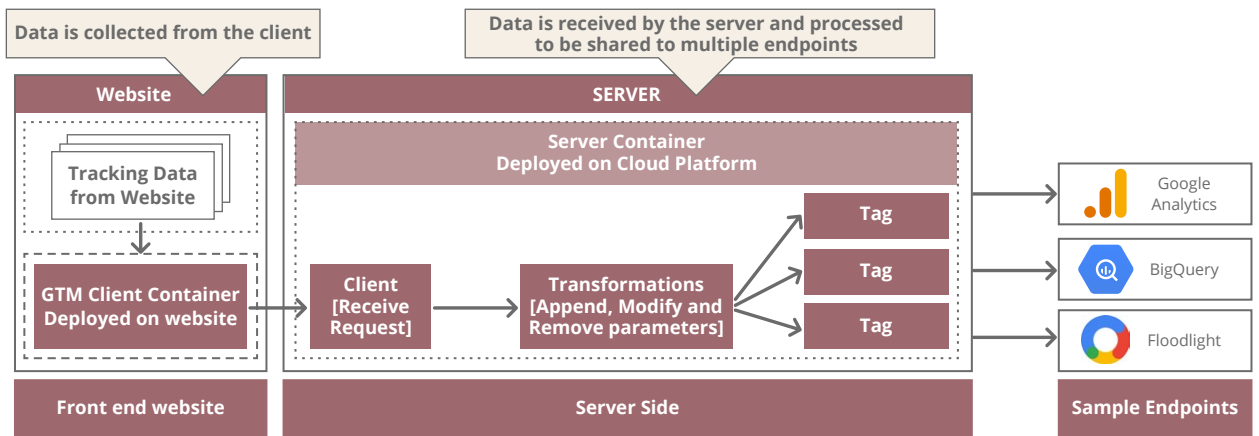
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Figure 5: Server-side tagging

AI-enabled identity resolution: Unifying data sources

A key challenge in the cookieless world, as we discussed in sections above, is accurately identifying and understanding consumers across multiple touchpoints. Identity resolution — the process of connecting various identifiers to build a cohesive, unified profile of an individual process — is crucial for delivering personalized experiences, ensuring relevant marketing, and understanding user journeys comprehensively, as we have discussed above.

AI-enabled identity resolution can leverage various data sources to create a unified view of users. Traditional approaches of deterministic and probabilistic methods have been in use for a while, with 3P cookies primarily using probabilistic methods and 1P based on deterministic methods. There are now more advanced data science techniques such as graph-based methods gaining relevance for ID resolution.

Let's look at some of the key data sources used for identity resolution in a cookieless environment — primarily first-party data and other non-cookie-based identifiers:
- **First-party data:** Collected directly from users via registration, subscriptions, and interactions, including account details, email addresses, phone numbers, preferences, and interaction history
- **Device data:** Unique identifiers from user devices (e.g., IDFA for iOS, GAID for Android) collected through apps or operating systems
- **IP addresses:** Logged by web servers during interactions, useful for recognizing network connections
- **CRM data:** Information stored in CRM systems, including customer contact details, purchase history, and interaction logs
- **Transactional data:** Purchase histories and transaction records provide insights into user behavior and reinforce identity matches
- **Social and network data:** Data from social networks and user connections enhances the identity resolution process, particularly within graph networks

Historically, identity resolution has primarily relied on deterministic and probabilistic approaches:
Deterministic matching: This method relies on exact data points (e.g., the same email address used across different platforms) to unify data into a single user profile. While highly accurate, deterministic matching is limited by the availability of such precise identifiers.
Probabilistic matching: In contrast, probabilistic matching uses statistical models such as Bayesian Networks and Expectation-Maximization (EM) Algorithms to infer connections between data points that are similar but not identical. By analyzing patterns in data such as full names, addresses, device types, IP

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addresses, or browsing behavior, probabilistic approaches can estimate the likelihood that different identifiers belong to the same user. This method is particularly useful when exact matches are unavailable, but involves a trade-off between accuracy and coverage.

As the limitations of traditional methods become more apparent in a cookieless world, graph-based approaches are emerging as a powerful solution for identity resolution.

Graph-based methods for identity resolution

Graphs excel in mapping and analyzing the complex relationships between various data points, providing a more nuanced and comprehensive understanding of user identities.

Graph networks are designed to handle the complexity of modern digital interactions by representing entities (e.g., users, devices, transactions) as nodes and their interactions as edges. This structure allows for the visualization and analysis of indirect connections that deterministic and probabilistic methods might miss. For instance, a graph can reveal that two seemingly unrelated profiles are linked through shared devices, behaviors, or locations, enabling a more accurate identity resolution.

To effectively implement graph-based identity resolution, two key components are essential:

Graph databases
Such as Neo4j or Amazon Neptune to store and query graph data
Graph algorithms
Like PageRank, community detection, and centrality measures to identify the most likely connections between identifiers
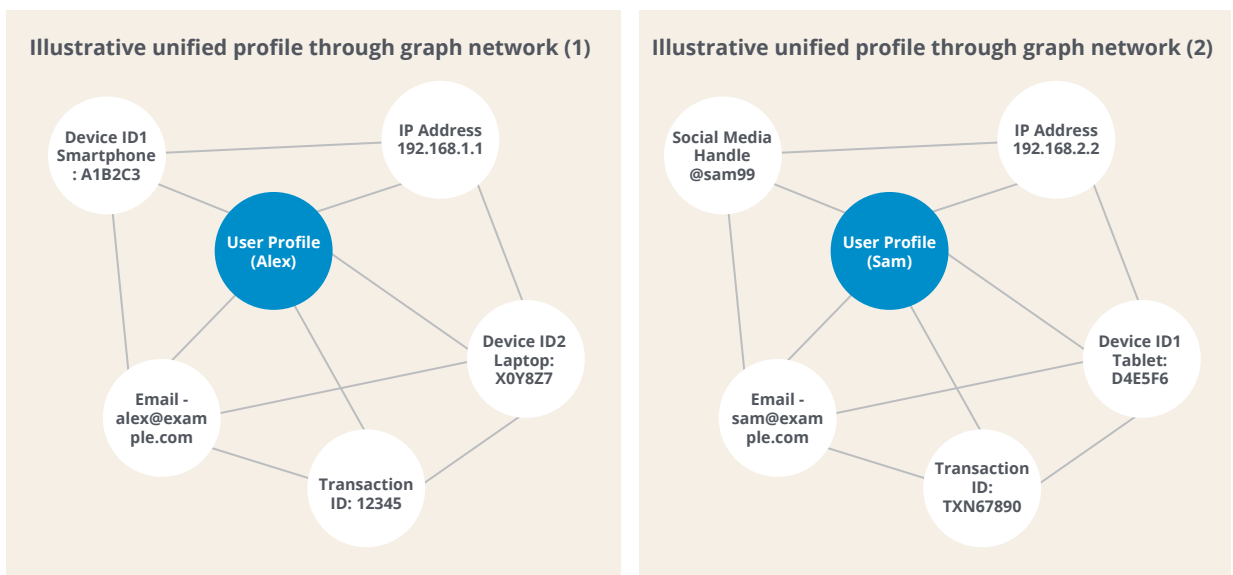

Figure 6: Final user profile table (illustrative)

The User Profile is a comprehensive and consolidated representation of an individual user. It brings together disparate pieces of information collected from multiple sources and touchpoints to form a single, coherent identity.

User ID	Device IDs	Email addresses	IP addresses	Transactions	Other identifiers
User 001	Smartphone: A1B2C3 Laptop: X9Y8Z7	alex@example.com	192.168.1.1	TXN12345	Loyalty card: 55555
User 002	Tablet: D4E5F6	sam@example.com	192.168.2.2	TXN67890	Social media: @sam99

Over time, as more interactions and data points are added to the graph, the network becomes richer and more detailed. The graph can then detect that all these interactions are likely related to the same individual, allowing the brand to deliver a seamless, personalized experience across all touchpoints. As marketing moves into a cookieless world, a multi-faceted approach to identity resolution — incorporating deterministic, probabilistic, and graph-based methods — will be essential for success. Among these, graph-based methods offer unparalleled advantages in mapping complex relationships, improving accuracy, and scaling with large datasets.

As the digital landscape evolves, leveraging AI and ML to enhance privacy-compliant first-party data collection and user profiling is crucial. By adopting these advanced techniques, brands can not only adapt to the cookieless environment but also unlock new opportunities for more intelligent, efficient, and effective digital advertising.

Hyper-personalization: Balancing privacy through leveraging AI and deep behavioral insights

Contextual recognition and targeting
Contextual targeting is set to become a cornerstone of digital marketing strategy. Unlike behavioral targeting, which relies on cookies to track user activity, contextual targeting delivers ads based on the content being consumed. This method not only respects user privacy but also ensures that ads are relevant to the context, increasing the likelihood of engagement and conversions. There are several key components involved in contextual targeting:

1. Real-time content analysis
The core of contextual targeting is the ability to deliver relevant ads based on the content a user is currently engaging with. Data science makes this possible through real-time content analysis.

1.1 Theme extraction
Advanced natural language processing (NLP) techniques like BERT, SpaCy, and TF-IDF are used to parse and interpret text on web pages. These algorithms extract key themes, topics, and entities, categorizing content with high precision.

For example, if someone is reading a blog about eco-friendly travel, these algorithms can identify this context and serve ads for sustainable travel products or travel insurance. Contextual recognition is performed by the ad-serving platform, which analyzes content, such as a blog, to identify relevant themes. The platform then generates targeted ads tailored to this context, which can be displayed on a related travel website, assuming both sites are part of the same ad network.

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1.2 Content classification

Machine learning models like SVM and Naïve Bayes, classify content into predefined categories such as travel, finance, or technology. This enables dynamic ad matching with the content category being viewed. For instance, on a page about health and wellness, the system can align ads for health insurance or wellness products.

2. Customer behavioral models — predictive AI and insights

Beyond real-time analysis, data science enhances contextual targeting by using predictive analytics and behavioral insights to deliver the right content to the right user:

2.1 Predictive modeling

Traditional machine learning algorithms can forecast user interests based on current and historical content interactions. By analyzing patterns and trends, these models anticipate relevant ad categories before a user even clicks on a page. This proactive approach ensures ads align with likely user interests, even in real-time scenarios.

2.2 Behavioral segmentation

Users can be segmented based on their behavior and content engagement using algorithms like DBSCAN, K-means, and Hierarchical Clustering. By grouping users with similar content preferences, advertisers can tailor their strategies to specific audience segments. For example, users frequently engaging with financial content may receive targeted ads for investment services or insurance products.

3. Dynamic ad matching and delivery

Effective contextual targeting involves not only understanding the right content for the right user but also delivering the right ad at the right moment. AI and ML facilitate this through:

3.1 Dynamic creative optimization (DCO)

Data science techniques like Generative Adversarial Networks (GANs) and LSTMs support DCO by enabling real-time customization of ad content based on contextual data. For example, an ad for travel insurance can be tailored with destination-specific details based on the page content. Similarly, if a user has been searching for smartphones, an ad from an e-commerce site can be modified to feature those items or related accessories, with personalized offers or discounts.

3.2 Contextual content creation

AI-driven tools enhance content creation by generating personalized messages and ads tailored to the user's current activity. Whether a user is reading an article, watching a video, or browsing a product page, content dynamically adjusted to the context can significantly boost engagement.

3.3 Ad inventory management

Foundational optimization algorithms can enhance ad inventory management by aligning ads with real-time content analysis. This ensures that displayed ads are contextually relevant and effectively utilize available ad space, maximizing user engagement and ad performance.

While these strategies are crucial for enhancing personalization, it's important to remember that in the age of smartphones, where user attention spans are typically less than five seconds, digital marketers must consider this limitation in their efforts.

Fractal's CerebralAI capability applies concepts of neuroscience to uncover crucial moments across a customer's journey and the emotional stimulus presented during these moments of interaction that generates an appropriate response in the target's mind.

This unique approach can lead to a significant shift in marketing by introducing micro-commercials that entice viewers to like and desire products almost instantly.

Key elements in crafting these interactive moments include:

MicroStimuli

In a world increasingly reliant on AI for personalized experiences, brands can stand out by understanding the subtle cues that influence customer decisions, known as MicroStimuli.

Digital moments that matter

By identifying crucial touchpoints — moments when customers are most responsive — marketers can deliver targeted messages that resonate, driving conversions without relying on third-party cookies. Take, for instance, a popular snack brand that discovered people often crave snacks when their blood sugar dips, such as between 4 PM and 5 PM. Leveraging this insight, the brand revamped its digital advertising strategy to be more targeted, contextual, and personal. This transformation was powered solely by first-party data, like website interactions and purchase histories, tapping into previously unexplored insights about human behavior.

By analyzing first-party data alongside qualitative insights, marketers can pinpoint these pivotal moments and strategically deploy MicroStimuli. This means optimizing the timing of messages and tailoring content to match the customer's emotional state, ultimately leading to better results. Brands can truly differentiate themselves with this approach.

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How AI including Generative AI balances personalization with privacy

AI and GenAI are revolutionizing personalization while also enhancing privacy protection. A standout feature of GenAI is its ability to use synthetic data to create personalized experiences without exposing actual user data.

Additionally, there are several other AI techniques that prioritize privacy:

Synthetic data and Generative AI
Leveraging synthetic data powered by Generative AI enables the creation of realistic, anonymized datasets that mimic real user behavior. This approach has proven valuable in applications like recommendation engines. For example, in sectors like healthcare marketing, Generative AI can produce synthetic profiles that emulate patterns found in real patient data. This allows companies to effectively target ads without accessing or compromising sensitive personal information.

Differential privacy
This method adds "noise" to data to protect individual user identities while still providing valuable insights. By implementing differential privacy techniques, such as the Laplace mechanism, it is possible to analyze and utilize data without compromising user confidentiality. For example, online stores can identify general purchasing patterns by slightly altering the data, making it difficult to trace individual buying behavior back to specific users. This added "noise" ensures that customer privacy is safeguarded while enabling smarter marketing strategies based on the data.

Federated learning
This approach enables machine learning models to be trained on decentralized data sources, preserving user privacy. Federated learning supports contextual targeting without centralizing sensitive user information, ensuring compliance with privacy regulations. For instance, a shopping app can personalize recommendations by analyzing browsing activity directly on the user's device. Instead of sending raw data to a central server, the app updates its understanding of individual preferences locally. Periodically, only these updates—rather than the raw data—are shared with a central system to improve overall recommendations. This ensures that private information remains secure on the user's device.

Challenges and considerations

Balancing privacy and personalization:
- Adding noise to data can decrease the accuracy of predictions
- It is essential to find the right balance to ensure these methods remain effective

Model explainability:
- Ensuring transparency about how AI models, particularly those utilizing GenAI, make their recommendations
- Vital for building and sustaining user trust

> GenAI equips brands to balance personalization and privacy in a cookieless world. By harnessing innovative privacy-preserving techniques, brands can uphold high data privacy standards while delivering personalized experiences, building trust, and ensuring compliance.

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Conclusion: Innovating for long-term success in a cookieless era

The phase-out of third-party cookies represents a significant shift in digital advertising, compelling marketers to rethink their strategies and embrace new technologies. To thrive in this evolving landscape, brands must prioritize data-driven approaches, leverage AI, and strengthen privacy practices. Those that adapt quickly will mitigate the impact and also gain a competitive edge.

Key strategic imperatives:

| Invest in data strategies	Leverage AI	Enhance privacy practices
Build robust first-party data ecosystems to fuel personalization and drive customer engagement	Utilize AI to unlock deeper insights, optimize targeting, and deliver personalized experiences at scale	Implement advanced privacy techniques to ensure compliance and build consumer trust

Innovating with data strategies, AI and privacy techniques is not just a response to the loss of third-party cookies — it is essential for long-term success in the digital age.

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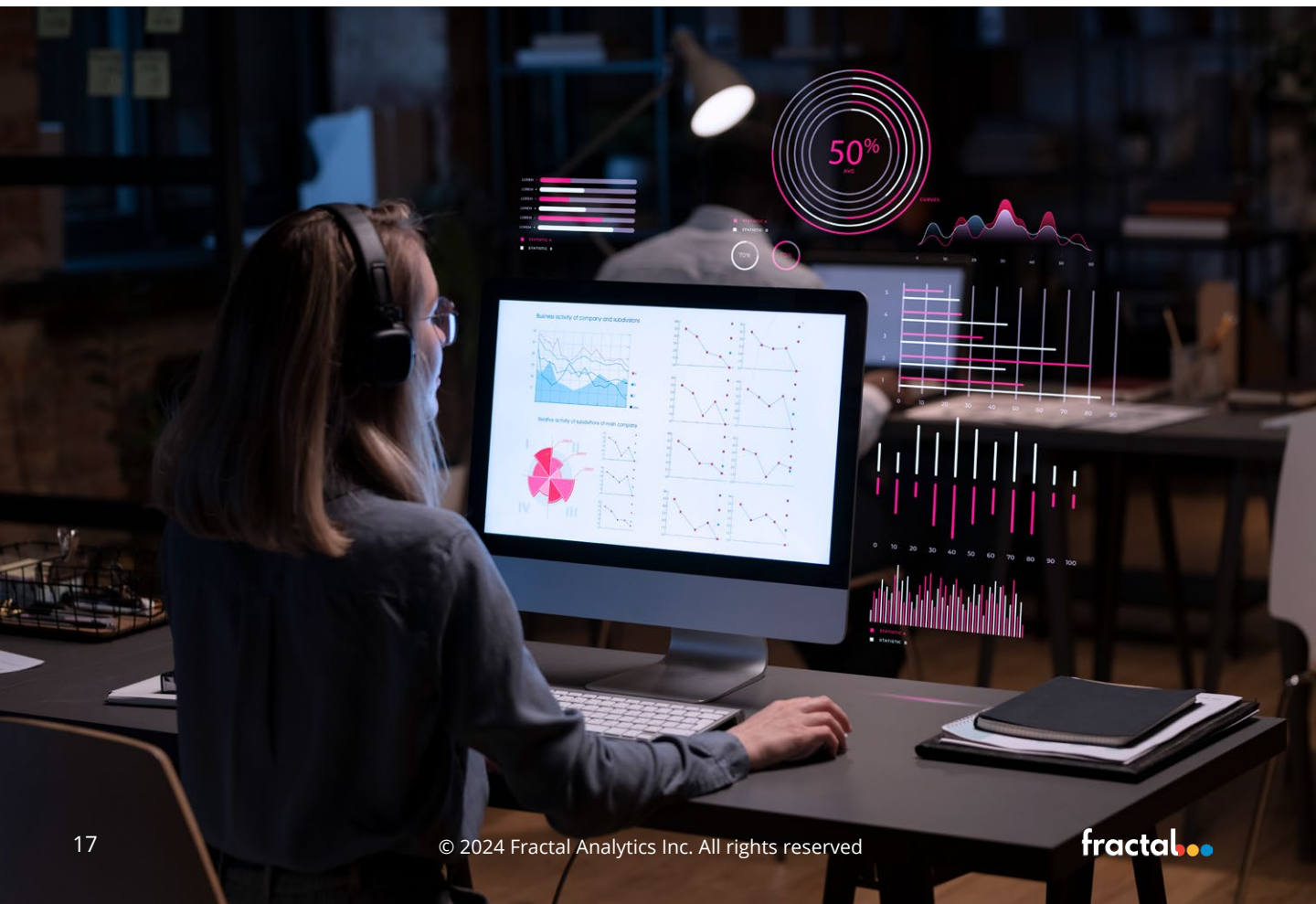
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Fractal is one of the most prominent providers of Artificial Intelligence to Fortune 500® companies. Fractal's vision is to power every human decision in the enterprise, and bring AI, engineering, and design to help the world's most admired companies.

Fractal's businesses include Asper.ai (AI for revenue growth management) & Flyfish (generative AI for Sales). Fractal incubated Qure.ai, a leading player in healthcare AI for detecting Tuberculosis, Lung cancer, heart failure and stroke.

Fractal currently has 4500+ employees across 17 global locations, including the United States, UK, Ukraine, India, Singapore, Middle East and Australia. Fractal has been recognized as 'Great Workplace' and 'India's Best Workplaces for Women' in the top 100 (large) category by The Great Place to Work® Institute; featured as a leader in Data Engineering services 2024 & Data Science Services 2024 by Information Services Group, Leader in AI and Analytics Services Specialists Peak Matrix Assessment 2021 by Everest Group, Leader in Customer Analytics Service Providers Wave™ 2023 by Forrester Research, Inc

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