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Master Program in Information Management

Programmatic Advertising in a Cookieless World

Gaining insights from industry experts to improve
Unified ID 2.0

Niklas Frerk Kollat

Project Work presented as partial requirement for obtaining
the Master's degree in Information Management

NOVA Information Management School
Instituto Superior de Estatística e Gestão de Informação
Universidade Nova de Lisboa

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PROGRAMMATIC ADVERTISING IN A COOKIELESS WORLD

by

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Project Work presented as a partial requirement for obtaining the Master's degree in Information Management, with a specialization in Marketing Intelligence

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DEDICATION

I dedicate my work project to my family, friends, and colleagues. A special feeling of gratitude to my loving parents, Anja and Karsten Kollat, whose effortless support and sacrifice throughout my life are unmatched. I am forever grateful for your love and support. Lastly, all my companions that have invested their time helping me devise this project that I can be proud of.

ABSTRACT

In March 2021, Chrome announced its plans to terminate third-party cookies at the end of 2022, confronting a whole industry with the question: how are we going to track users in the open web? During this project, Google decided to postpone it to 2023, which doesn't mitigate the importance. The termination is going to create a seismic shift in digital advertising and will lead to a massive transformation for every industry entity that is not equipped with a data-driven solution. One field that is certainly dependent on data is programmatic advertising. The Trade Desk is the world's largest independent DSP in the field of programmatic advertising and devised a cookie surrogate, called Unified ID 2.0. Like other solutions, Unified ID 2.0 is at a nascent stage in Europe. To improve proliferation, both users and industry stakeholders need to embrace this solution. The objective of the project is twofold. It aims to explain a cutting-edge topic to the academic world while delivering valuable insights to The Trade Desk to improve UID 2.0. Two stakeholder groups are vital for success: users and industry experts. This project provides insights from 13 qualitative in-depth interviews with high-level industry experts across the programmatic ecosystem. Complementary, this project includes a user survey encompassing the opinions of over 7,000 users from five different countries on cookieless solutions and the future of digital advertising, contributing to the rising debate on the future of programmatic advertising in a cookieless future. Beyond UID 2.0, major learnings are players who have successfully integrated a first-party data strategy endowed with data aggregation tools are going to succeed in a cookieless world, tech firms and publishers will drive innovation, generic alternatives will accelerate in the future, and the next level of privacy is dawning.

KEYWORDS

Data-Driven Advertising; Programmatic Advertising; Cookies; Tracking; Qualitative Research

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LIST OF ABBREVIATIONS AND ACRONYMS

AAID	Android Advertising ID
AI	Artificial Intelligence
Als	Ad Impressions
ATV	Addressable Television
ATT	App Tracking Transparency
CAPI	Conversion Application Programming Interface
CCPA	California Consumer Privacy Act
CDP	Customer Data Platform
CEO	Chief Executive Officer
CMA	Competition & Markets Authority
CMP	Customer Management Platform
COO	Chief Operations Officer
CPM	Cost per Mile
CRM	Customer Relationship Management
CTV	Connected Television
DACH Region	Germany, Austria, Switzerland
DOOH	Digital Out Of Home
DMP	Data Management Platform
DSP	Demand-Side Platform
ETP	Enhanced Tracking Protection
EU	European Union
FLoC	Federated Cohort of Learning
GDPR	General Data Protection Regulation
HTTP	Hypertext Transfer Protocol
IAB	Interactive Advertising Bureau
IAS	Integral Ad Science
ID	Identification
iOS	iPhone Operating System
OMP	Open Marketplace
PMP	Private Marketplace
PII	Personal Identifiable Information
PR	Public Relation
RTB	Real-Time Bidding
SDK	Software Development Kit
SSO	Single Sign-On
SSP	Supply-Side Platform
TCF 2.0	Transparency and Consent Framework 2.0
TTD	The Trade Desk
TV	Television
UID 2.0	Unified Identification 2.0

1. INTRODUCTION

Since the inception of the advertising-based internet, third-party cookies have been the lifeblood for tracking and targeting user behavior. By the end of 2023, this lifeblood will be extinct. Google reaffirmed its plans to turn off third-party cookies in 2022 for its Google Chrome browser in March 2021 (Temkin, 2021) before deferring the closure to 2023 (Goel, 2021). Chrome will join Safari and Firefox as the last major browser to terminate cookies, creating a massive hazard for the entire advertising industry, since there is no coequal solution to third-party cookies, right now.

Multiple factors certainly influence the cookie apocalypse. The world's leading media auditor Ebiquity identified four important areas that support the deprecation of third-party cookies. Firstly, consumer pressure for better data privacy has increased massively after numerous data breaches of the past years (Sobo & Vigh, 2021). The concerns of users have increasing importance for tech firms. Secondly, because of increasing customer concerns, the industry tries to self-regulate. As stated above, all major browsers including Apple's Safari, Firefox, and Edge are already blocking third-party cookies which cover roughly 50% of the market (Sobo & Vigh, 2021). Thirdly, the growing surge of legislation on the matter is leading to the deprecation. In 2018, the EU became the bellwether on data privacy rights with the introduction of the General Data Protection Regulation (GDPR) (Sobo & Vigh, 2021). Lastly, Google's decision to kill cookies is at least partly motivated to remain ahead of the curve on legislation and competition. Google's solution called privacy sandbox will be ready once cookies get terminated by them (Sobo & Vigh, 2021).

Apart from walled gardens, the open internet has evolved to a preferred channel for billions around the globe, in every facet of life. This includes communication, purchase, transaction, or information collection (Palos-Sanchez et al., 2019). Hence, digital advertising has become an indispensable strategic component for numerous firms, often endowed with data, reflecting the values and preferences of users (Jung et al., 2017). One major field of digital advertising is programmatic advertising. The IAB defines programmatic as "the buying and selling process bringing operational and pricing efficiency by digitally connecting the buyer and seller, enabling the programmatic purchase of ad placements via trading platforms" (IAB Europe, 2018). Programmatic is used on a wide range of digital channels and devices, such as search, social media, out-of-home, display, and mobile (Rask, 2021).

Programmatic allows for an increasingly comprehensive understanding of consumers and establishes one-to-one communication. This consumer-centric approach grants advertisers to reach consumers at the right time, in the right context, at the right location based on digital touchpoints collected through cookies and other tracking solutions (Gertz & McGlashan, 2014, pp. 55–58). Programmatic has become the preferred instrument for many industry players due to its efficiency. In 2020, programmatic accounted for 84.5% of all digital display ad spending in the United States, which in total is over \$65 billion (Perrin, 2021). In the United Kingdom, programmatic accounted for 92% of all display ad spending, which totals 6.79 billion pounds (Fisher, 2021).

Currently, the market offers various premature alternatives, none of which have reached significant traction. A solution that has a chance to become a surrogate is Unified ID 2.0, invented by The Trade Desk. The firm stresses the importance of a fair value exchange between users and content providers. This value exchange is defined as users enjoy the free content on digital devices for seeing relevant adverts. To solidify this value exchange the firm is building an open-source ID framework, called Unified ID 2.0. The objective of this project is to improve Unified ID 2.0 by gaining insights from industry experts on their view of the programmatic future without cookies. From an academic perspective, there are two main gaps. Firstly, the need for more current work in the field of data-driven advertising, especially on new technological solutions, is barely existent. Secondly, the perspective of decision-makers and

users on these new surrogates is minuscule. The missing perspective of decision-makers needs to be accentuated since they are key drivers in the deployment of these new solutions.

Founded in 2009, The Trade Desk (TTD) is an American advertising technology firm. It operates the biggest independent programmatic media buying platform, looking at 12 million ad opportunities per second (Sluis, 2021). The company operates around the globe, with over 25 offices in North America, Europe, and the Asia-Pacific region. The Trade Desk is listed at the Nasdaq (The Trade Desk).

The deprecation of third-party cookies is not just a technological challenge, it is an economic issue that will negatively affect every market participant, except for a few monopolistic players that aim to proliferate their strong position such as Google and Facebook, often referred to as walled gardens. An eMarketer (Schomer, 2021) study states that 49% of American digital media professionals identify third-party cookie deprecation as the primary challenge for their profession. From a digital marketing perspective, we face a seismic shift in this over \$300 billion industry (Cramer-Flood, 2020). This seismic shift will also impact The Trade Desk. Third-party data enables a significant volume of transactions through The Trade Desk platform. Hence, the deprecation of third-party cookies without a valid surrogate directly alters the economic success of the organization.

Secondly, this topic influences everyone who uses the internet. From a macro perspective, one can propose that the open internet is at risk. Publishers need advertising money to provide high-quality content to people for free. A study by the Competition & Markets Authority and Google implies that publishers that can't leverage third-party data are earning 70% less revenue than publishers who can leverage such data, indicating how a future without alternatives could end for publishers (Mayhew, 2021). Without a valid surrogate for cookies, this implicit agreement is at risk and threatens the existence of many publishers. According to a study from McKinsey (Brodherson et al., 2021), publishers will need to replace \$10 billion through paywalls and a mix of surrogate solutions to make up for the loss created by cookie deprecation. Therefore, this hazardous cycle has the potential to change our internet consumption and access to quality journalism at a grand level.

2. LITERATURE REVIEW

Before analyzing the current literature, it is important to define essential terms. Sections 2.1 – 2.4 serve as an explanation for programmatic advertising and the examination of the most significant third-party cookie alternatives mentioned in this research. I briefly explain email-based identity solutions, walled garden solutions, and others.

2.1 PROGRAMMATIC ADVERTISING

According to the IAB, programmatic advertising describes “the automated process of buying and selling digital ad inventory; connecting advertisers to publishers to deliver ads to the right person, at the right time, in the right place” (2018). The advantages of programmatic advertising are copious. It offers data-driven profiling, including concise geolocation targeting, segmentation based on demographic and behavioral preferences, and retargeting mechanisms, while being cost-efficient for marketers (Aslam & Karjaluto, 2017).

Programmatic advertising utilizes real-time data, allowing accurate and timely dissemination of adverts, increasing the chance to drive purchases or clicks (Huang, 2017). This technology functions across platforms, such as social networks, mobile, online audio, internet-connected televisions as well as digital out-of-home placements. User data, accompanied by AI-based predictive models, enables organizations to calculate the likeliness of user actions, allowing an increased receptiveness (Palos-Sanchez et al., 2019). At this point, user consideration of programmatic becomes important. Li and Huang (2016) imply in their research that programmatic advertising is seen as a positive if the displayed advert offers useful information or services. If the opposite is the case, then programmatic advertising is seen as a distraction. According to Tucker (2013) occasionally users are aware that their personal, as well as geographical data, is leveraged to provide personalized adverts. Over the years, users have become gradually more aware and concerned about how their data is used (Palos-Sanchez et al., 2019).

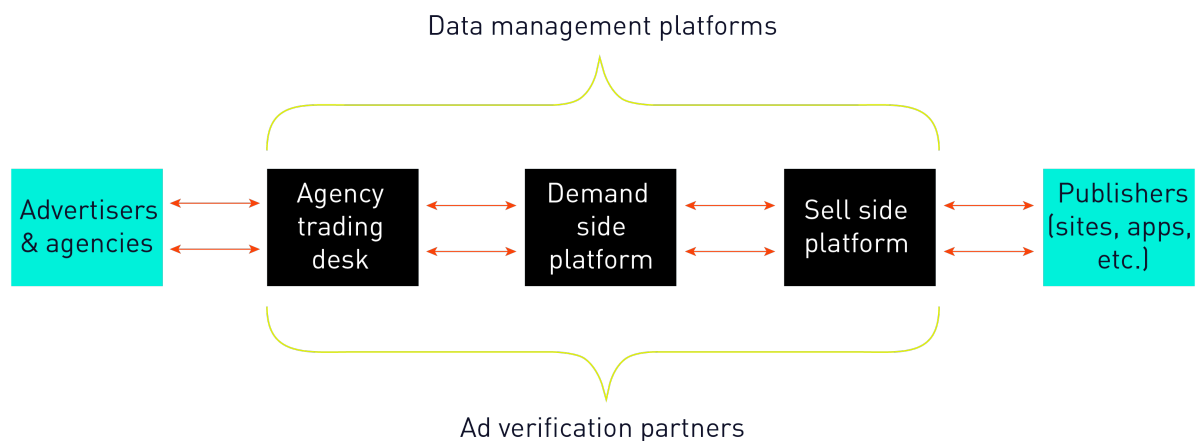


Figure 1.1 - Programmatic Supply Chain

As figure 1.1 indicates, the programmatic supply chain involves numerous market participants. The ecosystem includes advertisers and agencies that invest media budget via trading desks, represented by demand-side platforms. The buy-side often leverages either first or third-party data via data management platforms. Ad verification partners support the analysis of ad placements in terms of brand safety, viewability, and potential ad fraud. The sell-side is represented by supply-side platforms that provide a digital marketplace for inventory from publishers, websites, and apps.

2.2 E-MAIL-BASED IDENTITY SOLUTIONS

Identity solutions provide a sophisticated alternative to cookies and cookie syncing, hence allowing the open web to prosper. Broadly speaking, identity solutions function through the following process: users identify once with a publisher, when visiting their website by signing in via e-mail. The email address is then going to get hashed and encrypted via an identity solution provider that transforms into a user ID and deletes the email address. The user ID will then be shared with members of the ad tech realm. In the past, this solution occasionally got criticized by marketers due to a perceived lack of scale, as mentioned before (Page, 2020). Numerous deals that the Trade Desk independently agreed on with large publishers nurture the hopes of the industry (Lim, 2021). Besides The Trade Desk, other market participants like Adform and netID are currently devising and testing their solutions in the European market.

2.2.1 Unified ID 2.0

The Trade Desk's CEO Jeff Green continues to stress the importance of a fair value exchange between users and content providers. This value exchange is defined as users enjoy the free content on digital devices for seeing relevant adverts. To solidify this value exchange, the firm devised an open-source ID framework, called Unified ID 2.0. The objective of UID 2.0 is to provide a deterministic identity solution for the advertising ecosystem while providing more transparency and control to users than they had before.

Unified ID 2.0 is a deterministic and persistent identifier based on personal identifiable information. With the usage of UID 2.0, users can participate in logged-in experiences encompassing websites, mobile apps, and connected TV apps monetized via programmatic procedures (The Trade Desk, 2020).

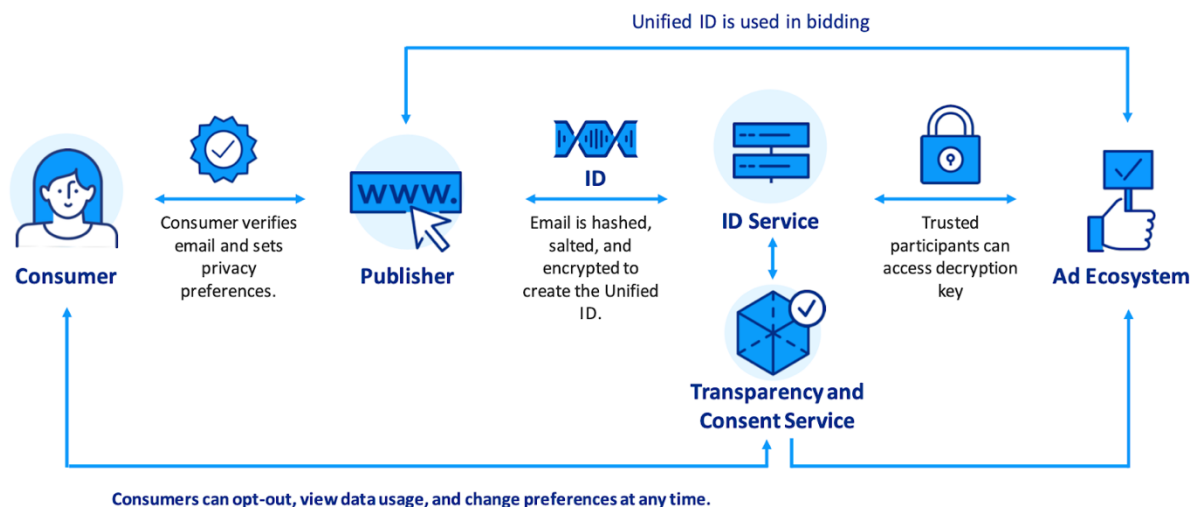


Figure 2.1 - UID Technical Workflow

Users benefit from multiple layers of privacy operations including hashing, salting, and encryption of the email to create a user unified ID. Encryption refers to a two-way function that allows the transformation of data that can only be read with a key, after alteration. Hashing refers to drawing data of different sizes into a fixed length. Salting refers to adding a string of either numbers or letters to a hashed string to improve safety (Nohe, 2021).

The raw UIDs are then encrypted and formed into tokens that are then going to be used in the bid stream, enabling market participants to work with user data. Every time the token enters the bid stream, it does so with an alphanumeric constellation to prevent fraudulent behavior.

2.3 WALLED GARDENS

Both Google and Facebook have revolutionized not only the way we communicate but also the digital media landscape. A term that is often synonymously used for these two is walled garden. The term describes a locked ecosystem in which the owner of the ecosystem oversees operations (Poulpique, 2018). The main competitive advantage lies in the vast deterministic tracking possibilities that both platforms have. In comparison, to less accurate options like probabilistic (e.g., via third-party cookies) advertising, this allows for imperative personalized ads, measurement, frequency capping, and attribution (Competition & Markets Authority, 2020b, para(s). 103). According to eMarketer, Google and Facebook hold more than 50% of the digital ad revenue share (Hake, 2021).

2.3.1 Google Privacy Sandbox

As mentioned before, Google's actions to phase out third-party cookies have multiple reasons. The deprecation of third-party cookies will not be executed by Google without an alternative in place. The Privacy Sandbox is a web technology initiative by Google that aims to devise new tracking solutions and protect user data. It contains multiple solutions that aim to reassure the usage of data for market participants without third-party cookies (The Privacy Sandbox, 2020).

At the heart of the Google Privacy Sandbox lies the Federated Cohort of Learning (FLoC). Other than UID 2.0, FLoC aims to terminate one-on-one advertisement by grouping users into interest-based cohorts. Google's senior product manager for user trust and privacy Bindra stated: "...we are moving away from one-to-one identity; the shift toward aggregation and cohorts will serve as the foundation for privacy-preserving APIs that allow for interest-based advertising while preventing cross-site tracking. Cohorts 'is where the future is headed, at some level, in terms of targeting'" (Schiff, 2020b). The Google algorithm decides which user is included in which cohort. As with other solutions, each cohort is assigned an alphanumeric string. Groups that are too small are recalculated until they have accumulated at least several thousand users. Advertisers only get to see the cohort ID, according to Google. Numerous questions like the usage of identified Google users (e.g., people using Gmail) are not yet solved (Nield, 2021). Google states all Privacy Sandbox solutions are currently in development, so changes or another adjournment past 2023 are not impossible (Reichert, 2021). After the accumulation of data from expert stakeholders, Google announced a FLoC successor called *Topics*. This solution determines a user's top interests on a weekly basis, based on the browser history of the last three weeks. Sensitive categories are excluded and can be altered by the user (Goel, 2022).

2.3.2 Facebook ID

Once you sign up for a Facebook service like Facebook or Instagram, your profile illustrates a deterministic ID, that allows Facebook to distribute very accurate advertising to you on the platform. Every action a user is taking complements the digital profile to show more relevant ads. Additional information is collected by tracking outside platform behavior of users via pixels. Since 2020, Facebook allows via Facebook Conversion API (CAPI) firms to send their first-party data (website, offline, CRM) in real-time to Facebook to target users on the platform, without the use of third-party cookies (*Facebook Conversion API (CAPI) Overview*, 2020).

Conversions API safeguards data-driven marketing

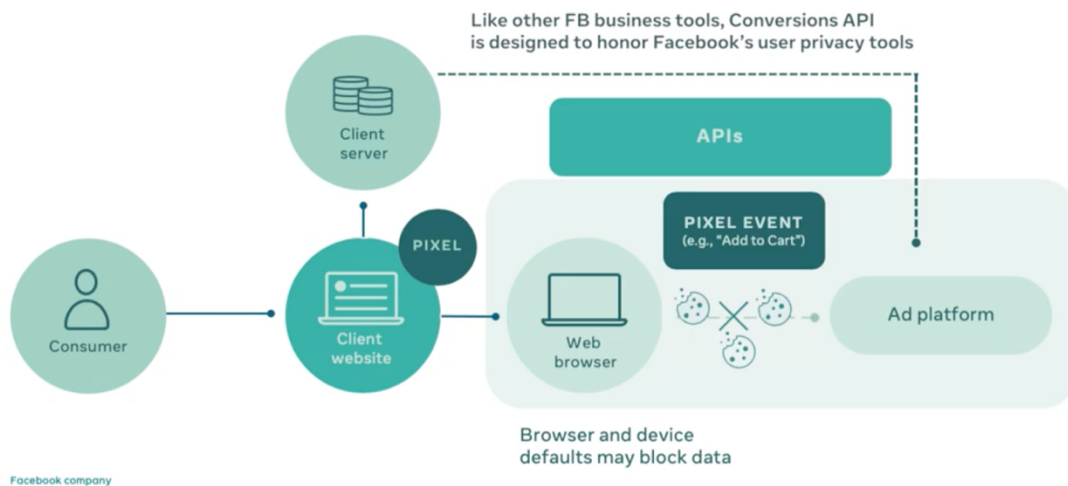


Figure 3.1 - Facebook CAPI Overview

The strength of the Facebook ID is certainly influenced by the number of users who opt-in to track. As mentioned before, an analysis by data firm Flurry, indicated that opt-in rates are rather low, with 5% in the US and approximately 13% worldwide (Reichert, 2021).

2.4 GENERIC ALTERNATIVES

This section serves as an explanation and examination of the generic advertising alternatives mentioned in this research. I briefly explain contextual advertising, fingerprinting, first-party data, and so-called clean rooms.

2.4.1 Contextual Advertising

A solution that has played a significant role before data-driven advertising and still does to some extent is contextual advertising. In this case, targeting is based on the context of the website (e.g., football kit ad on a sports website), often based on keywords. According to the Competition & Markets Authority (2020, para(s). 326), it is “widely anticipated that advertisers will return to spending larger proportions of their budget on contextual advertising”.

Irrespective of the interview results, there is a multitude of opinions on the future role that contextual advertising is going to occupy. Publishers like Washington Post and tech companies like Gum Gum are investing in contextual technologies, while attribution firms like Neustar question the measurement and frequency capping possibilities. Regarding CPM cost, behaviorally targeted ads range between \$2-\$3 while contextual ads are currently around \$0.50, according to Peer39 COO, Alex White (Schiff, 2019).

2.4.2 First-party data

Leveraging first-party data is certainly interesting, both for larger publishers and for advertisers. The Competition & Markets Authority describes first-party data as “obtained from users when they sign in or subscribe to the publisher services and of browsing data from users’ interaction with the publisher website or app” (2020b, para(s). 300). First-party data includes sources like website data, customer relationship data, surveys, subscriptions, or offline data. The clear advantage of leveraging first-party data is based on the loose legislative restrictions.

Large publishers, and even more so walled gardens accumulate massive amounts of first-party data that enables continuous leverage of high-quality data, while small- and medium market participants are very likely to have trouble aggregating and monetizing valuable data if they don't partake in a large-scaling solution or invest properly in technology.

In addition to first-party data, clients and agencies also leverage third-party data. Third-party data contains behavioral or demographic data and is disseminated by data aggregators that specialize in such a service. These entities don't have a direct relationship with users (Paulina, 2017).

2.5 LITERATURE REVIEW

As displayed in figure 4.1, the primary objective of this work project is to improve UID 2.0 by gaining insights from industry experts on their view of the programmatic future without cookies. The importance of surrogates for market participants is undoubted, and therefore is at the heart of this project. Beyond that, the aim of this project is to contribute managerial implications, by depicting a post cookie world. To grasp a better understanding, both expert and user perspectives are essential.

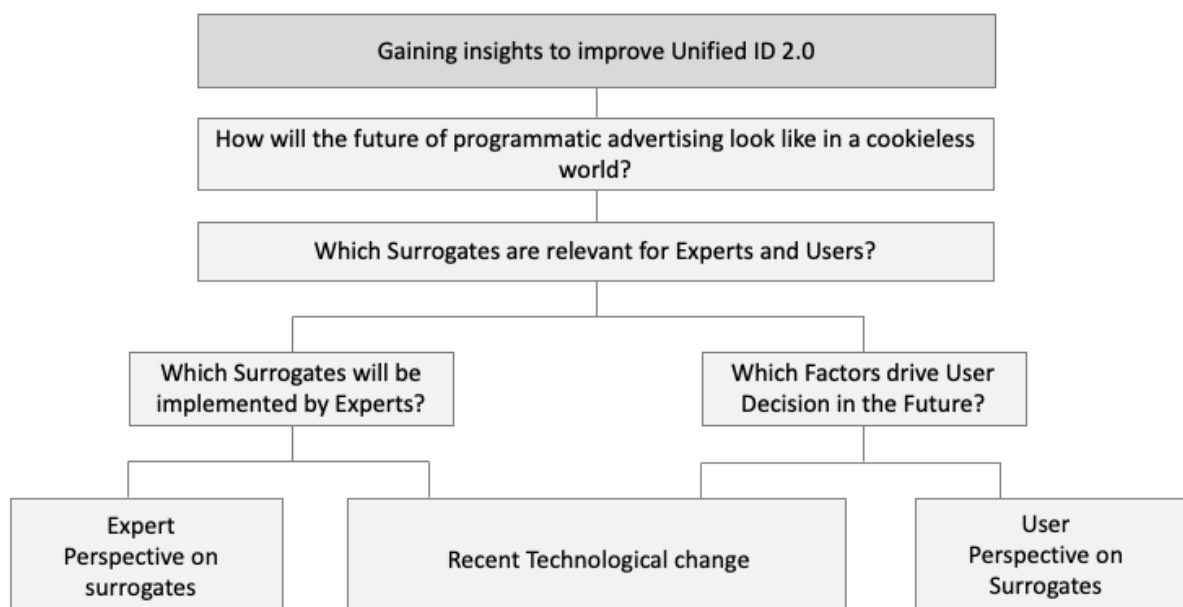


Figure 4.1 - Research Objective Structure

The devise of third-party cookie alternatives is a current and ongoing process, which explains the comprehensible number of academic research, in comparison to other topics. Nonetheless, the below-mentioned research provides valuable information on numerous topics, that are overly relevant for this project. Table 1.1. demonstrates literature encompassing inter alia regulation, data, cookies, and the programmatic advertising industry. Additional literature is implemented to affirm, question, or refute the conclusions of authors.

Author(s)	Research
Andrew (2019)	Examining how the programmatic ecosystem changes the audience economy by placing user identification at the center of digital advertising.
Zhang et al. (2019)	Understanding the interplay between data quality decisions by brokers and the firm's judgment on ads distribution and pricing using a proprietary analytical model.
Marotta (2019)	Understanding the importance of targeted ads for publishers via a probability weighting, using a vast data set from a media company.
Al-Fannah et al. (2019)	Understanding and examining the collection and sharing of user data via fingerprinting through the utilization of a crawler analysis.
Palos-Sanchez et al. (2019)	A longitudinal study examining circa 15,000 participants on their concerns perceived on the usefulness of programmatic advertising.
Geradin et al. (2020)	Understanding and evaluating Google's Privacy Sandbox from multiple perspectives, as well as nominating alternatives to Google's solution.
Rosenthal et al. (2020)	Drawing connection between user privacy literature and trust in platforms like Facebook, via cross-national study with 4,684 participants.
Shehu et al. (2020)	Understanding the influence of premium and non-premium websites on branding and performance campaigns.
Papadogiannakis et al. (2021)	Understanding and examining the collection and sharing of user data via ID-sharing and fingerprinting through the utilization of a crawler analysis.
Nottingham (2021)	Understanding and evaluating Google's Privacy Sandbox from multiple perspectives, including regulatory and the advertising industry.

Table 1.1 - Literature Review Overview

2.5.2 Expert Literature

The surrogate that receives the most attention, both academically and in the business realm, is Google's Federated Cohort of Learning (FLoC). Geradin et al. (2020) and Nottingham (2021) evaluated the Privacy Sandbox (overarching framework for FLoC) from a regulatory perspective, which includes the competitive equilibrium and examines other third-party cookie alternatives.

As mentioned before, critics state that Google's actions are driven by the quest for a monopolistic position (Geradin et al., 2020; Srinivasan, 2020). Zhang et al. (2019) stressed that future research should address the disutility of consumer data due to the changing legislative landscape (GDPR). While this affects publishers and ad tech vendors first and foremost, advertisers need to devise their data accumulation strategy. Since the release of this article, the restrictions enforced by Google via the

upcoming cookie deprecation have increased the complexity. Geradin et al. (2020) address the repercussions for publishers and ad tech vendors. Regarding publishers, they note that Google is in a vertical (providing tech solutions to publishers) as well as a horizontal relationship (competing with their inventory) with publishers. Since 2004, the allocation of ad revenues between Google's proprietary ad inventory and the publisher's ad inventory has been widening, in favor of Google (Srinivasan, 2020). While publishers can't endow their first-party data with third-party cookies, Google remains to collect deterministic data via logins and aggregates browsing data across all publishing platforms. Thus, Google would be able to offer more precise data and cater cross-site tracking to marketers, creating a competitive advantage that can't be replicated.

Geradin et al. (2020) observe a similar power dynamic in the ad tech environment. The previously mentioned first-party data, collected via Chrome, allows Google's DSP to better train their machine learning model, under the self-proposed restrictions, leading to a weakening of the competition. The authors note that a weaker competitive environment could eventually increase prices for customers, while decelerating innovation in the field. Recently published information from the Department of Justice, in Texas, imply illegal behavior by Google, superficially raising prices for advertisers (Schiff, 2022). The authors propose to separate Chrome from the ad tech business, either functional (separate operation) or structural (unload Chrome) to improve the competitive balance and prevent further market concentration. Nottingham (2021) disagrees and argues that Google's regulatory changes, resulting in the devise of the Privacy Sandbox, are not an abuse of power. He claims that Google is acting within the guidelines, that legislative regulators provide. One segment refers to the power of Chrome and the possibility to devise settings that benefit only Google and its solutions. Google is not a gatekeeper for Nottingham, but rather an independent entity, providing an architectural framework for market participants, like advertisers. Geradin et al. (2021) provide important arguments, that indicates the power of Google and the obligation for advertisers to accumulate first-party data. The potential price raises as well as the debatable legislative foundation of Google's action should motivate advertisers to aggregate proprietary data pools. Nottingham underestimates the importance of scalability that solutions need to reach to be valid alternatives in comparison to walled gardens. Brodherson et al. (2021) found that some executives plan to shift budgets to social media platforms exactly because of their scale. This can't be a compelling option for advertisers. Data aggregation should be obligatory for the majority.

There is little evidence that indicates a small impact from a cookieless advertising system for publishers. The study from Marotta et al. (2019) is an exception. They found that publisher revenue only increased by 4% if an ad was endowed with data via cookies. Utilizing a logarithmic transformation of the variables, the research team used a comprehensive data set from a sizeable media organization to come to their conclusion. Thus, leading to a different conclusion than the CMA estimation, which found that UK publishers would earn up to 70% less not utilizing cookies than publishers who would (Competition & Markets Authority 2020, p. 15). The widely contrasting academic perspective, pertaining to the future of publishers without the utilization of third-party cookies and the integration of alternatives, indicates a lack of robust research and needs to be addressed. This economic pressure is greatly fathomed by SSPs, which serve as the technological bridge for publishers to communicate auction demands from the buy-side. Stakeholder viewpoints from ad tech firms such as SSPs are vital to better understand the forthcoming termination but have yet to be included in academic work.

In addition to the specific surrogates that will endow many market participants with a technological alternative, generic alternatives such as contextual advertising remain valid. Andrew (2019) examined the audience economy based on marketplace theories. He argues that programmatic trading is the future of audience economics, based on the astute tracking possibilities cookies offer. Two consequences of the sophisticated targeting offers are the increasing irrelevance of content and mass marketing concepts. His inference shows the dynamic changes in the programmatic data field. Two years ago, contextual advertising seemed to become irrelevant and is now considered an en vogue

solution to circumvent cookie loss for publishers and marketers. Shehu et al. (2020) support this notion based on their study on website quality for premium and non-premium brands. They conducted two randomized studies for branding and performance campaigns in cooperation with a globally operating advertising platform. The research suggested that website quality is an important tool not only for branding purposes for premium advertisers but also for premium and non-premium brands when conducting performance campaigns. Hence, the suggestion is that contextual advertising is going to play an increasingly significant role in the future of digital advertising and programmatic. Contextual advertising has a great chance to gain market share. Current academia lacks the input of decision-makers from brands, agencies, and publishers on the matter to quantify or receive a notion of the development in this segment.

2.5.2 User Literature

Palos-Sanchez et al. (2019) analyzed in a longitudinal study, participants on their concerns perceived the usefulness of programmatic advertising. They note that users are aware of privacy contraventions, but their concern increases once they realize how programmatic advertising works. Users understand, to a degree, that this could be based on incorrect use of personal data. Nevertheless, users perceive tailor-made advertising and overall digital advertising as positive and more interesting. The authors are convinced that the misuse of data won't be tolerated by users, based on the carry-over effects of their study. This effect is not true for perceived usefulness, just for privacy concerns. This leads Palos-Sanchez et al. to the conclusion that privacy will become an imperative component of digital advertising. The implication of Palos-Sanchez et al. (2019) that people are aware of tracking and see utilization purposes is not solely reflective of programmatic advertising. Rosenthal et al. (2020) found this to be true for Facebook as well. Their cross-sectional study across six countries found that people who have higher privacy literacy are more concerned, while people with lower literacy are less concerned. The trust increases when people see value in personalization effects. This study underpins the importance of paramount communication and technology to explain to users why their data is being collected and show better adverts to them. Nonetheless, both studies indicate that user concerns grow faster than acceptance through utility, under the current circumstances. While both provide valuable insights on the pros and cons of programmatic advertising and social media, in this case, Facebook, both don't provide further insights on the upcoming changes in cookie termination and the subsequent implementation of surrogates, due to the release timing.

The before mentioned trust issues of users are justified. Al-Fannah et al. (2019) crawled the 10,000 most popular websites to examine the data sharing activities of websites. They found that circa 69% of the inspected websites were potentially involved in fingerprinting. Their research implies the large scale of unauthorized tracking as well as the need for more transparency. Fingerprinting is a highly criticized tracking mechanism. Browsers like Firefox are working on a ban (Mozilla, 2021). Consent management platforms (CMP) have become an essential component of the current tracking environment. Since the implementation of the GDPR, these consent frameworks are essential to offer users the possibility to opt out before consuming the content on a website. However, Papadogiannakis et al. (2021) found through the implementation of a crawler that numerous websites don't comply with the legislative framework. They rather do the following: they implement persistent trackers (fingerprinting or ID synchronization) and share collected data with external parties. The implementation and distribution of user data occur not only if users consent but also if they choose to opt-out. Furthermore, their results indicate that 75% of tracking activities occurred before the consent decision of the user. Degeling et al.'s (2019) longitudinal study support the findings of Papadogiannakis. Their research included an analysis of consent notices for 6,000 websites, indicating that most of the consent libraries don't comply with GDPR conditions. The research of both parties implies that the current state of tracking and execution is flawed and not transparent enough. This is supported by the research from Sanchez-Rola et al. (2021). They analyzed over 6 million websites, via

a proprietary crawler and found a convoluted network sharing user data, without user knowledge. User concerns are imperative for the programmatic advertising industry and will gain more focus.

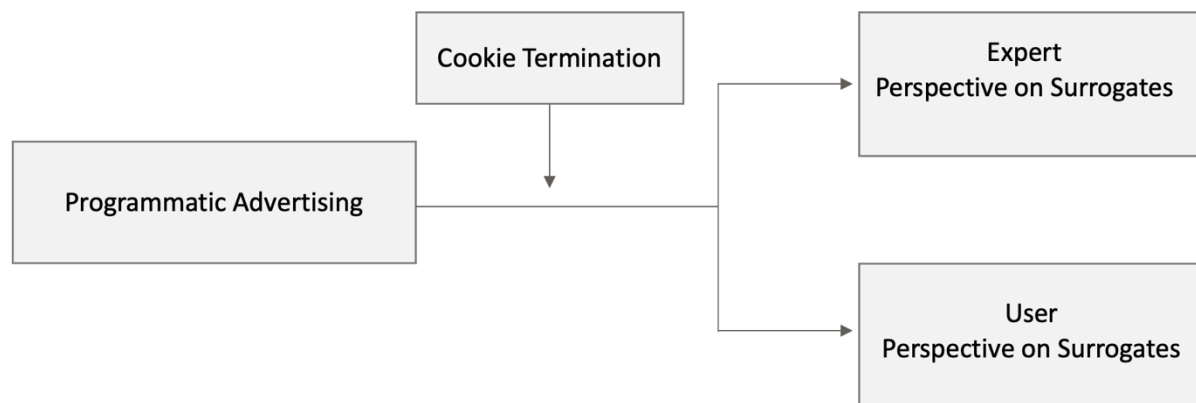


Figure 5.1 - Conceptual Model

Multiple assumptions have been voiced in previous research projects. These can be divided into expert-focused statements and user statements. Expert-focused statements include proclamations from Marotta et al. (2021) that publishers won't be much affected economically, since cookies have a minor influence on economic performance. This is tested, as is the statement from Andrew (2019), who stated that content and mass marketing will become increasingly irrelevant. On the user side, Palos-Sanchez et al. (2019) and Rosenthal (2020) both define a growing privacy literature as catalysts for concern regarding digital tracking mechanisms, both valid for social media platforms and programmatic advertising.

The cookie termination will change the programmatic advertising industry profoundly, including fields like tracking and measurement, privacy, advertising, and the economic set up. This change will impact both users and experts. Based on the foreseeable impact this change will have, I postulate four assumptions:

- A 1: First-party data aggregation will be one of the main objectives for advertisers.
- A 2: The termination of cookies will be anticipated as a significant economic influence for publishers.
- A 3: Generic alternatives, like contextual advertising, will gain more traction in a post cookie world.
- A 4: User Privacy will become the central theme in a consent-focused post cookie world.

Past and recent academic studies in this area indicate a gap. Table 1.1 shows that tracking and user privacy have received a lot of attention, always on the foundation of third-party cookies, which will be terminated. The dynamic technological changes leading to the termination of cookies create an entirely new playing field and subsequently to new outcomes on legislation, consent, tracking, and so forth, which demands a more contemporary and progressive perspective on the matter. Besides users, the most important stakeholder group are industry experts. Past research has not included the perspective of industry experts on the matter of third-party cookie surrogates in a comprehensive manner. The missing perspective of decision-makers needs to be accentuated since they are key drivers in the deployment of these new solutions. This project fills exactly this void, by interviewing key stakeholder entities that forge the future of the programmatic advertising market, sustainably. To complement the mosaic of future data-driven advertising, this project includes a study on user perception conducted by The Trade Desk and the British market research firm YouGov from Q4, 2020.

3 METHODOLOGY

The objective of this project is to find communicative and technical cues to improve Unified ID 2.0 by gaining insights from industry experts on their view of a programmatic future without cookies. In-depth interviews provide proper insights on a complex subject that concerns the digital advertisement industry and its stakeholders. The interview design pertains both open and closed questions, to allow both quantitative depictions and qualitative in-depth representation of statements. Comprehending what experts are planning to do and understanding their opinion on surrogates provides an essential perspective for The Trade Desk and on the future of programmatic. The surrogates that receive primary focus are UID 2.0, Google FLoC, Facebook's CAPI, Adform Fusion, and netID. Google's DV360 alone holds a 30%-40% market share, which allows making fundamental assumptions on the future of programmatic advertising (European Commission, 2021). While this research project is at its core of exploratory nature, the four assumptions stated above will permeate the interview design. The design rationale provides a solid foundation, in conjunction with the user survey, to determine if the four assumptions made above are appropriate.

The interview survey is compartmentalized into three sections. The first section aims to understand the existing state of affairs of the stakeholders regarding programmatic advertising and their most important digital challenges. The second section aims to comprehend the perspective of the different stakeholders concerning cookie loss, including their actions, and their sentiment both on a macro and organizational level. The third section aims to understand the perspective of stakeholders on the specific cookie surrogates such as Unified ID 2.0 to extract the often mentioned communicative and technical improvements. It is critical to note that also the first and second sections provide vital information for The Trade Desk both on UID 2.0 and on the operative level. Both industry participants and users are highly influential in the success of cookie alternatives. Hence, both need to be included in this project, to provide a proper perspective for readers. In addition to expert interviews, this project provides vital insights on the perspective of users regarding privacy, advertising, and surrogates.

3.1 SAMPLE

The selection of experts was based on the before-mentioned stakeholder groups. Experts were contacted via LinkedIn or e-mail. The sampling method is best described as judgmental sampling. Each industry expert was part of a respective stakeholder group, held a mid-tier or higher management position, and provides comprehensive digital knowledge. No specific demographic background was considered for the selection process. After selection, experts received a customized note with a brief introduction of the topic and scope, as well as the questions to ensure transparency and allow preparation. All experts are located in the DACH region, even though some are responsible for pan-European or pan-continental markets. The total number of invitations accumulates to 40, leading to a total of 13 qualitative in-depth expert interviews. The number of interviews results from the restrictive time schedules, and level of in-depth knowledge of experts as well as my resources.

Complementary to my data accumulation, The Trade Desk provided user survey data on privacy and control that endows this paper. This study was conducted by The Trade Desk and the British market research firm YouGov at the end of 2020 and displays the perspective of 7666 respondents and was conducted in the United States (1314), United Kingdom (2203), France (1020), Germany (2065), and Spain (1064). The respondent age ranges from 18 to over 55. The gender share remained equal among all countries, with a consistent propensity towards females, with 49% versus 51% (Germany, United States) being the smallest and 46% versus 54% (United Kingdom) being the biggest spread. The data was collected between December 2020 and January 2021. The survey was conducted online and based on a Likert-scale, which requires participants to communicate a degree of agreement or disagreement with the presented statement. The objective of secondary data for this project is to complement the picture and create an overarching perspective on the topic.

3.2 DATA COLLECTION

Primary data was collected from different experts, including advertisers, agencies, publishers, as well as advertising technology firms. Hence, the primary data collection encompasses at least one entity of each relevant stakeholder group that is part of the ecosystem, as seen in figure 1.1, except data management. Twelve interviews were conducted via Zoom, between August 2021 and November 2021. One interview was filed in written form.

The following overview illustrates the interview partners:

Stakeholder	Job Title	Organization
E-Commerce (Advertiser 1)	Head of Media Strategy	E-commerce platform with millions of users across 190 markets. The advertiser employs over 10,000 people and earned over \$10 billion in 2020.
TelCo (Advertiser 2)	Digital Media Manager	Leading global TelCo firms with a revenue of more than \$50 billion in 2020.
Retail (Advertiser 3)	Team Lead Programmatic	One of the leading online retailers for furniture with 1,500 employees and stores across six countries.
Insurance (Advertiser 4)	Senior Marketing Intelligence Manager	Insurtech firm with over 300 employees, active in over 40 markets.
FMCG (Advertiser 5)	Digital Media Manager	The leading FMCG organization in the world with over 250,000 employees and a revenue of over \$80 billion in 2020.
Agency 1	Managing Partner Programmatic & Digital Innovation	One of the leading media organizations with billings of over \$30 billion.
Agency 2	Managing Partner	Leading media investment firm with more than \$50 billion media investment, annually.
Agency 3	Director Programmatic	One of the leading media agencies, with over 7,000 employees, operating globally for world-renowned clients, across all branches.
Publisher 1	Senior Product Manager	Germany's biggest OOH and digital advertising vendor with over 50 million unique users, per month.
Publisher 2	Tech Operations Manager	One of Germany's biggest digital vendors operating many lifestyles, and finance-focused sites. In total publisher II reaches over 41 million unique users.
Publisher 3	Senior Manager Data & Analytics	One of Germany's biggest digital vendors encompassing numerous political, and finance platforms, reaching over 35 million unique users.

SSP	Senior Vice President Platform Solutions	One of the leading specialists for programmatic advertising inventory providers.
Attribution	Senior Vice President Customer Success	Marketing attribution technology firm providing a wide range of measurement services.

Table 2.1 - Interview Overview

3.3 DATA ANALYSIS

The options for qualitative data analysis are multifold. I decided to integrate statements, bar charts, and the statistical software package VOSviewer 1.6.17 to identify key statements and results from the interview process. Direct statements are crucial to display the viewpoints of the respective stakeholders and add more depth to the visual components. Visual representations are essential to display the answers in a comprehensible manner.

This is also applicable for VOSviewer, which allows recouping information from qualitative interviews (van Eck & Waltman, 2010). The mapping technique VOS exemplifies the visualization of similarities and displays the resemblance of terms based on text data. VOSviewer provides four normalization methods, of which I decided to implement 'Association Strength' to normalize the fortitude of relation among terms. The characteristics of this method ensure that terms are treated equal and not based on occurrence (van Eck & van den Berg, 2006). Minor alterations were performed to cleanse the data. Text documents were transformed into text files to be compatible with VOSviewer. Distinct and unnecessary terminologies were removed, including "and", "is", and "are". Text stemming was performed to remove plurals and verbal variations. The names of the participants and any other identifiable information was removed as well. Multiple tests were conducted to refine the model.

4 RESULTS AND DISCUSSION

This project aims to provide an answer to the question of how the future of programmatic advertising is going to look like in a cookieless world. The importance of surrogates for market participants is undoubted, and therefore at the heart of this project. The objective of the interviews has been to learn the perspectives & measures of stakeholders from different areas concerning cookie loss and Unified ID 2.0 and to derive communicative and technical improvements from this.

4.1 INDUSTRY EXPERTS

4.1.1 Status Quo

The first section aimed to provide context on the relevance of programmatic and the digital challenges that the different stakeholders are facing.

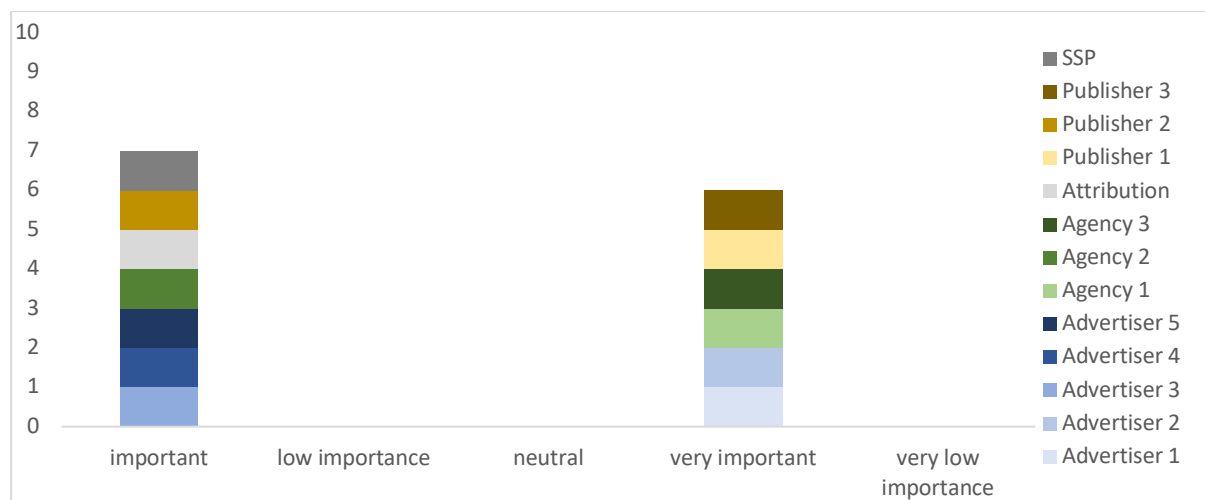


Figure 6.1 – Strategic Importance of Programmatic

Interview partners see programmatic as either strategically important or significant for their respective organizations. This underlines the relevance of programmatic and accentuates the influence a shift to a cookieless future would have on the digital strategy of participants. To provide a frame of reference for a cookieless future, I decided to ask the respective stakeholder to rank the most essential digital challenges for their company. The results demonstrate the different priorities and patterns of concern each stakeholder carries.

Stakeholder	Organization
E-Commerce (Advertiser 1)	1. Data Quality 2. Attribution 3. Educating Employees
TelCo (Advertiser 2)	1. Attribution 2. Brand Quality 3. Cookieless
Retail (Advertiser 3)	1. Attribution 2. Hiring 3. Digital Infrastructure
Insurance (Advertiser 4)	1. Attribution 2. Targeting 3. Cross-Device
FMCG (Advertiser 5)	1. First-Party Data Aggregation 2. Cookieless 3. Attribution
Agency 1	1. Attribution 2. Market Fragmentation 3. Cookieless
Agency 2	1. Hiring 2. Educating Employees 3. Cookieless

Agency 3	1. Market Fragmentation	2. Consent Acceptance	3. Cookieless
Publisher 1	1. Digital Infrastructure	2. Consent Acceptance	3. Cookieless
Publisher 2	1. Cookieless	2. Consent Acceptance	3. Digital Infrastructure
Publisher 3	1. Cookieless	2. Digital Infrastructure	3. Hiring
SSP	1. Digital Infrastructure	2. Cookieless	3. Educating employees
Attribution	1. Measurement Granularity	2. Quality Assessment	3. Insight Accumulation Speed

Table 3.1 - Key Digital Challenges

After analyzing the advertiser responses, one circumstance is clear, attribution is a key digital challenge for all of them, most often paramount. While cookieless is only mentioned twice, it is critical to note that attribution is strongly impacted by consent and tracking mechanisms, which will change drastically without cookies. So are terms like data quality, targeting, and cross-device targeting or attribution. Even though, only named once, first-party data aggregation will be an essential solution for advertisers (Sheerin & Cooper, 2021). Advertisers don't seem to fully comprehend the magnitude of third-party cookie loss.

Agencies display a higher level of concern for a cookieless future since the task is to find and assess solutions for their clients. Furthermore, market fragmentation, meaning the creation of silos that impede tracking and optimization, is seen as a challenge. Publishers overtly show the challenge that a new digital infrastructure generated by losing third-party cookies creates for them. Consent acceptance refers to the objection of users accepting tracking, indicating once more the importance of users in the ecosystem. SSPs which are technically linked to publishers, therefore, share the priority of challenges. Attribution organizations clearly are gaining importance in a world in which consent and tracking are becoming increasingly more complex. Hence, the depth, speed, and prowess of assessment has never been more important, than in a cookieless world.

As mentioned before, each survey was specifically designed for the respective stakeholder group. One question dealt with the importance of contextual advertising for publishers. Andrew (2019) stated the assumption that content and mass marketing will become increasingly irrelevant, implying that contextual targeting will not be of relevance. The deprecation of cookies rekindles the demand for contextual advertising. This renaissance of contextual targeting demand is supported by the publishers I spoke with. All three state a share of contextual makes around 10% of their budget media booking share, and it continues to grow, often as part of a so-called pre-targeted deal. Hence, publishers repudiate this notion through investments in solutions that support the proliferation, supported by the rising media bookings from advertisers and agencies that seek to shift media budgets and test generic alternatives.

Furthermore, all three publishers agree that contextual will be one of the main generic solutions that will gain market shares, once third-party cookies are extinct, definitively. When asked what kind of sectors these publishers are going to invest in, all of them stated that they are aiming to provide a form of paid content model. All publishers contemplate implementing a so-called 'PUR Model', a bundling offer that allows users to access all articles with one subscription (Hagiu & Wright, 2021). Users who decide that they don't want to pay would then be tracked and consume the content without paying. Sophisticated data is and will remain important, but the recurrence of contextual advertising is going to gain more traction. Even though collected at a small scale, this disproves the statement from

Andrew (2019). Content will be of even bigger importance. This turn of events, once again, indicates that this seismic shift in the field of advertising creates or even reinvigorates niches. Furthermore, the rise of contextual advertising supports assumption A3.

As previously mentioned, Marotta et al. assumed that the termination of cookies won't have an economic impact on publishers, since third-party cookies only make up 4% of the profit. The interview results show that the assumption from Marotta et al. (2021) can be questioned. Although I don't present quantitative results that support my perspective, the statements made in combination with the strategy and investments by publishers clearly indicate that substitute tracking solutions are vital to support economic stability. This underlines the opposite quantitative findings by the Competition and Market Authorities research (2020) which found that publishers who don't leverage third-party cookies lose up to 70% of income versus the ones who do. Furthermore, some publishers expand their e-commerce activities to increase their economic diversification. *Publisher 2* stated that their organization wants to expand the proprietary e-commerce business. "We would like to create a needs-oriented marketing, which ideally recognizes in advance what the user needs. Amazon is certainly a role model here." The investments done by publishers to prepare for a cookieless future as well as the aim to diversify the portfolio indicate that the economic impact of cookie loss is greater than described by Marotta et al. (2021), which supports assumption A2.

4.1.2 Perspective on Third-Party Cookie Loss

The second section aimed to accumulate a better understanding of the perspective of experts regarding the loss of third-party cookies and their actions.

One of the most significant questions was to understand the recognition of the change and the actions taken by experts. Besides users, advertisers are the most important stakeholder group, for the simple fact that advertisers fund the ecosystem. *Advertiser 1* is taking matters seriously but is not operatively active on the topic stating "at some point, one technology may replace the other, but as long as there's still something to be had, I'll be quite opportunistic and use the existing technology." *Advertisers 2, 3, and 5* all conduct different tests, focusing on generic alternatives like geosplitting (*advertiser 3*), contextual advertising (*Advertiser 2 & 5*), A/B testing (*Advertiser 2*), or pre-post analysis (*Advertiser 4*). All advertisers are in talks with AdTech providers to gain more knowledge on surrogates.

Often agencies are operatively supporting or primarily handling media budgets for advertisers. *Agency 1* is rather active, testing the first surrogates. "We are already testing some cookie surrogates and contextual solutions. We'd like to test more, but the German market is rather slow. What we always do is update ourselves on what is new on the market, how it works, how we can communicate that to our customers, and what questions customers might have. Another question is then how to check the whole thing with the ad verification providers, they have to do something now, but that will certainly happen in the next few months." *Agency 2* acknowledges the importance of the topic but realizes that other stakeholders need to be proactive forces. "The topic is crucial. Of course, it is our job to know the market, and we are aware of the relevance and implications that go hand in hand with such a transition. However, just like our customers, we are waiting for the market to respond appropriately to this situation and offer goal-oriented solutions. More important than testing various cookieless solutions, and this is something we recommend, again and again, is for the customer to focus on building a 1st party database to be able to act more independently of market solutions." The SSP connects the DSP and publishers and provides a vital technological infrastructure. *SSP 1* states, "we are prepared, and we deal with the topic. That means we are in exchange with publishers and talk about which IDs are relevant. We have the same challenges with the DSPs on the other side. We are always in between. That means that we are preparing to be able to process these IDs in the end, that we can see them but also clarify first which ID is relevant for whom. That's all we can do now to be fair. We support all tests that we can support." Publishers are a rather active stakeholder group, who are

heavily affected by the shift to a cookieless future. *Publisher 1* notes that they are implementing multiple cookieless solutions and are especially interested in first-party data sharing possibilities. *Publisher 1* stresses that they “need to push these kinds of testing proactively, advertisers, DSPs, and smaller publishers are rather tentative”. One reason for hesitancy is the missing technical expertise of smaller publishers to integrate solutions like Unified ID 2.0. *Publisher 1* is certain; a seamless technical integration model must be designed to proliferate.

Publisher 2 is investing numerous resources in a proprietary cookieless solutions. The respective sales departments are doing their first initial campaigns. “Contextual advertising is a massive topic for us, so we'll be dealing with it very strongly in the future as well - we already have a team of I think nine engineers. Among other things, keyword list tests are currently being implemented with customers.” Cookieless is a top priority for *Publisher 3*. “We have a special team assigned. A group with members from all relevant teams (programmatic, data, IT, publisher management). This team evaluates all possible aspects, from first-party data collection to ID solutions, the programmatic usage of ID traffic, and other options that will be used in the future.” A subsequent question focused on the expected influence on branding and performance campaigns.

The research by Shehu et al. (2020) on the importance of premium websites for branding and performance marketing, served as an inspiration to ask how branding and performance marketing will be influenced by a cookieless future. Overall, most experts were confident that branding will not change drastically. *Advertiser 2* believes that tracking and targeting alternatives will fill the void. “The market will find solutions to continue to target groups and not only have to resort to contextual or environment solutions.” *Advertiser 3* is confident that logic will guide many marketers in the upper funnel, leading to more premium inventory bookings. “...especially for programmatic and display moving away from any random website that gets a conversion because you're not going to be able to trust it as much going forward, or it's going to be at least a much smaller part of the internet tilting into more premium placements...” *Attribution 1* is also rather optimistic: “Branding often has a different objective than performance and has always been more creative when it comes to the various measurement methods. That's why I think branding is well positioned through the possibility, as you just said, of content or publisher partnerships (direct deals, premium inventory).” On the other side, performance is going to change drastically for some experts.

Attribution 1 already sees repercussions in the performance realm that lead to a stronger advertiser focus on accumulating first-party data to prepare for the cookieless future: “depending on how you define performance, you can already see a change, for example, when it comes to data that serves as a vehicle. We witness an incredible number of advertisers mobilizing CRM data, right now. This collection of first-party data is currently happening across industries. In addition, sorting is already taking place at an early stage (e.g., new or retaining customers). We also notice that clients are thinking in a much more customer-centric way to compensate for the impact of cookieless.” *Advertiser 5* underlines the importance of first-party data for future performance-driven activities “I believe that if you keep your basic data stock clean and can make it usable for such topics, you will actually find a solution for retargeting and thus as well for the performance area.” These statements support assumption A1, that first-party data aggregation is vital to be successful in a cookieless world.

Stakeholders that will not have aggregated first-party data will be dependent on walled gardens. SSP 1 is convinced that the depreciation of cookies will lead to a budget shift to walled gardens, at the beginning “I can imagine that especially in the first step a lot of the performance budget will go into the walled gardens because it will be a simple solution. I think that it will be the case that it is primarily the performance area that will benefit from walled gardens, but whether that will be the case in the long term I don't necessarily think so. In the long term, I can imagine a distribution that is relatively similar to the current situation.”

Besides changes in the upper and lower funnel, chances, and risks for each organization were discussed in the interviews and all stakeholders were rather optimistic for their organization, for different reasons. Interestingly, stakeholder shared their perspective beyond their organization. *Advertiser 1* was overtly critical of the German publisher market, “It depends on whether publishers can convince users. If the German publisher market doesn't even get its act together, it will be extremely difficult if everyone stays in their silo. From a user experience and that's why Facebook and Google are so successful, both have a UID that works everywhere, and you have a strong added value through it. Only with news and without any other added value it will be very difficult. I hope of course that it works, that would be better than any cookie.” *Advertiser 3* stressed its concerns regarding user privacy: “I am concerned that numerous third-party cookie replacements seem much worse from a privacy perspective than what third-party cookies were.” *Advertiser 5* provides a practical perspective, saying “I think we just have to accept this and adapt our actions, it can get better, although I still see the future as relatively uncertain. It may also be a chance to put the consumer back in the center and understand his needs for data privacy and added value. Just seeking an alternative for a cookie is not the right solution in the long run.” *Agency 1* is sure that consulting will be even more important in a cookieless future, “for us as an agency, I see an opportunity because the demand for consulting is increasing. The increasing complexity, among other things due to cookielessness, will strengthen us as an agency.” *Publishers 1* and *3* see potential to leverage more first-party data, while *Publisher 2* is projecting a positive tilt due to a more privacy-centered ecosystem. *Publisher 2* underlined the user-centered desire, stating: “In every change lies an opportunity. If the Google Sandbox will be released as planned, it's a great chance for users to get rid of tracking technologies that were never user-friendly, in the first place. If imposed, it's a great opportunity for the industry to build a user-friendly solution and improve matters. We've been interested in giving the user more control for some time.”

All agencies, *SSP 1*, and *Attribution 1* often act as servants for other stakeholders. The interview partners are confronted with questions from their clients, regarding the future of programmatic and tracking. *Attribution 1* states that questions around the topic's validity, measurement methods, or legal certainty are most frequently asked. *SSP 1* mentioned that monetary questions are of high relevance. A question that is not enough asked by advertisers, according to *Agency 3*, continuing “Of course, a lot is communicated in the press, which gives a false sense of security.” *Agency 2* supports the notion that many clients don't confront themselves enough with the cookieless future “To be honest, very few questions are asked. We have to tell the customer very clearly what questions he has to deal with, what questions he has to ask himself so that he is well positioned in the future, for example, building up his database I have the feeling that people are still hiding a bit from this topic, partly because Google has postponed the scheduling.” The seismic shift in the advertising field is accommodated by new tracking solutions that contend on the market. In addition, new technological solutions arise, in other areas as well. One example would be data aggregation since first-party data will be more instrumental new tools derive. This question aims to understand the level of innovation and investment prowess.

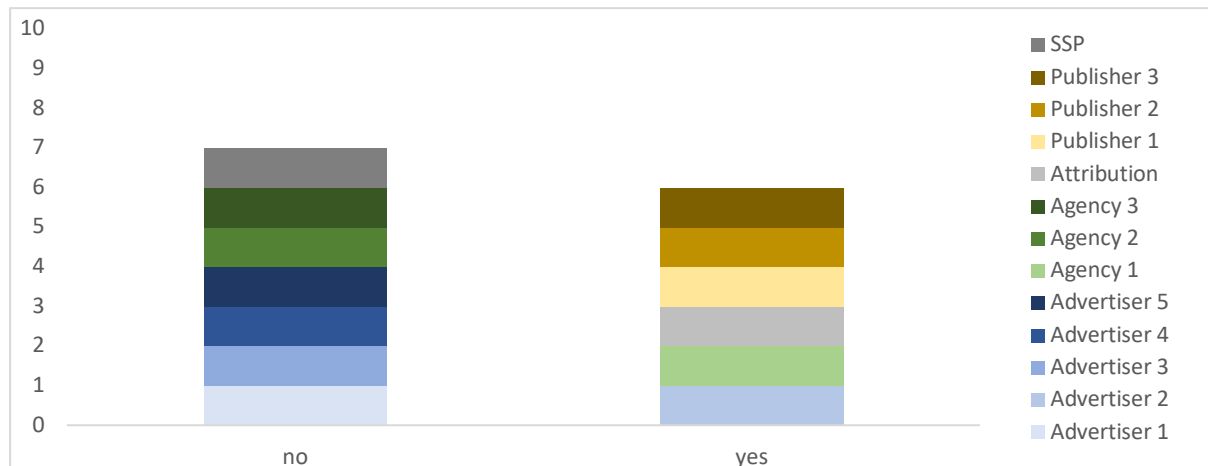


Figure 7.1 - Tool Investment

The result is relatively balanced. It is evident that most advertisers and agencies are not investing in new tools, while all publishers are investing. It is important to note, that this doesn't mean that participants won't do anything or won't refine components. *Advertiser 5* noted that tool integration decisions are often decided on a global level. Tool extensions like data clean rooms have been discussed but don't provide the necessary use cases, so far. Certainly, ramp-up time will take longer in such instances. *Advertiser 2* states, "We will certainly use our proprietary as well as external solutions. Certainly, not a standard solution, rather a customized solution. We also have numerous people working on it." Publishers focus on multiple solutions. *Publisher 2* states "In addition to our cookieless solution, we are working on many smaller solutions, such as a technological architecture that allows us to bundle and model all data, i.e., to build a first-party data management platform. We also find the topic of cohort solutions very exciting and can imagine creating our own solution." *Agency 1* already leverages their proprietary tool "we also use this tool technology in every campaign and are already working diligently on optimizing our campaigns and this will certainly be intensified."

Google's postponement to 2021 provides more ramp-up time for all stakeholders. Some see it as a positive sign, allowing them to refine solutions, while others seem to be disquieted, thinking that the adjournment will lead to un inventive solutions. This question aims to answer the innovative drive that stakeholders bear.

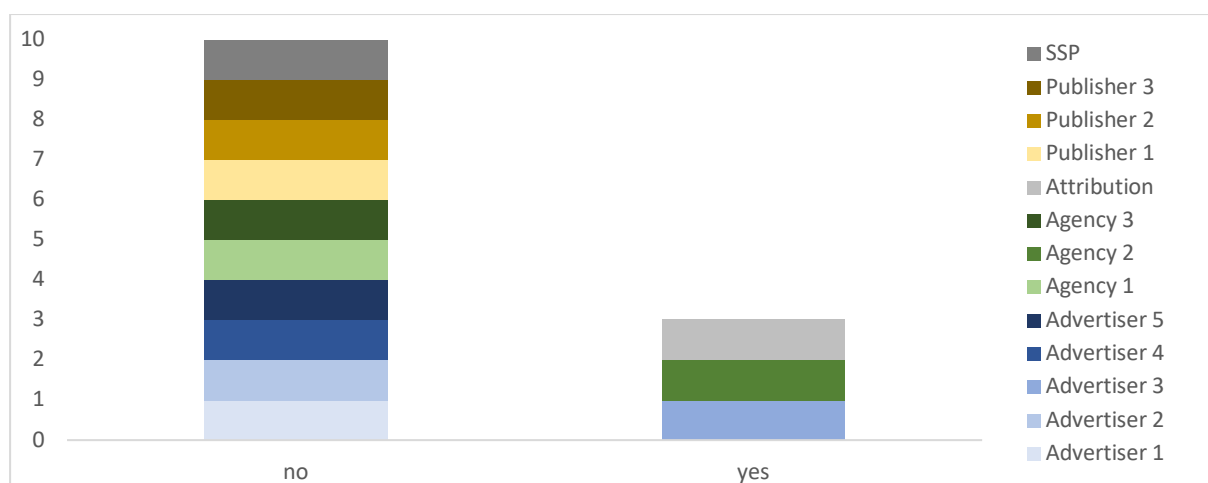


Figure 8.1 - Google Postponement

Some stakeholders admit that Google's postponement has led to a deceleration within the organization. *Advertiser 3* states "I think that it has decelerated the innovation within our organization

at least around attribution and to an extent media buying. I think it has made us all a little bit lazier.” Agency 2 supports this notion, seeing other stakeholders as important catalysts for their actions “I would have preferred to see it sooner rather than later, simply to test our proprietary solutions more quickly, on the one hand, and on the other hand, we are currently at a bit of a standstill because we are still waiting for others to move.”

Figure 8.1 indicates that stakeholders have not decelerated their innovation attempts. *Advertiser 2* states “The first Google announcement made us take the topic more seriously. The last announcement did not make us slow down, but we are still developing everything. The sooner we get the whole thing out, the better it is.” *Publisher 1* supports this notion, “No, we’ll continue at the same speed. Ultimately, the transition phase is already starting in Q4 2022, so there isn’t much more time. Google does not guarantee anything and says that cookies will no longer be usable from Q4 2022. We just have the mindset that we want to continue to work at the same speed as before. We believe that we are among the marketers who are quite far ahead when it comes to future solutions in this area.” *Publisher 1* notes that other market participants have decelerated the process of innovation, this includes advertisers, agencies, and DSPs. *Agency 1* has had unpleasant experiences with cumbersome behavior in the past. “We just move on as far as our strategy is concerned. We have had bad experiences with consent management, which then came at relatively short notice. In addition, customers are also asking for it, so we have to deal with it.”

4.1.3 Solutions

One of the most important objectives in this project was to better understand the perceived advantages and disadvantages of each solution. Due to the nascent stage of the surrogate market, including almost no testing possibilities in Europe, answers remained ambiguous. There was no interview partner who provided detailed feedback on each surrogate. Nonetheless, there were interesting statements on some solutions and systems like SSO and FLoC.



Figure 9.1 - Network Visualization Cookies

Figure 9.1 displays the network visualization of the feedback from stakeholders on the matter of surrogates. Leveraging VOSviewer supports visualizing the total link strength of terms. Proximity indicates the relational strength between terms (van Eck & Waltman, 2020). The blue cluster on the left side displays strong connection of UID 2.0 and FLoC with reach, which is a main contributor to success, according to experts. The green cluster comprises the contest of service and action that need to be conducted. The red cluster highlights the different ecosystems that accumulate large amounts of data, connecting an open system like SSO solution and closed systems consisting of Facebook and Google.

Since figure 9.1 lacks a comprehensive overview of terms, table 4.1 was implemented. Table 4.1 shows that VOSviewer compartmentalized 10 items into three interconnected clusters. Uninteresting terms and terms that provide no interconnection were manually removed.

Cluster 1 (red)	Cluster 2 (green)	Cluster 3 (blue)
Closed System	Significant Value Exchange	FLoC
Facebook	Sufficient Reach	UID
Google	User	Reach
SSO Solution		

Table 4.1 - VOSviewer Cluster Overview

At its core, cluster 1 features relevant responses concerning the different ecosystems. The statement of *Attribution 1* serves as the blueprint, “The biggest challenge of the two SSO solutions are of course Google and Facebook. Both have an incredible amount of data and their closed system“, indicating the fierce competition for SSO-solutions. Multiple stakeholders openly share their resentments towards Facebook and acknowledge the negative societal effects but see the ecosystem as an irreplaceable source for leveraging data. Furthermore, some acknowledge that Google and Facebook don’t provide premium ad environments that many brands are looking for. *Advertiser 1* states, “I think that quality journalism has many advantages over platforms like Google and YouTube, just because of the quality of the content. Google and YouTube offer inventories that don't exactly increase our brand quality.”

Cluster 2 refers to the shift of a more customer-centric future in programmatic advertising. A significant value exchange needs to occur to convince user sign-up, leading to a proliferation that results in sufficient reach. Cluster 3 demonstrates an essential theme of discussion. There is controversy among stakeholders when the question is raised whether UID will gain significant reach. *Agency 1* sees walled garden solutions like FLoC as an essential blocker. *Agency 3* supports this notion and sees FLoC as a superior solution to UID. *Attribution 1* and *SSP 1*, accompanied by Advertiser 4 are convinced that the international set-up will facilitate reach for UID. It must be said that every participant had issues to provide comprehensive feedback on all solutions. Some experts had overall feedback on SSO-solutions or named advantages and disadvantages for UID 2.0 and FLoC. The lack of knowledge can certainly be attributed to the nascent stage of testing opportunities in Europe due to the rather restrictive data protection laws in Europe that lead to an opaque status quo.

Since a concise and differentiated perspective on each solution was not anticipated, the subsequent question aimed to accumulate attributes that an SSO solution should provide to be an attractive option for the respective interview partner.

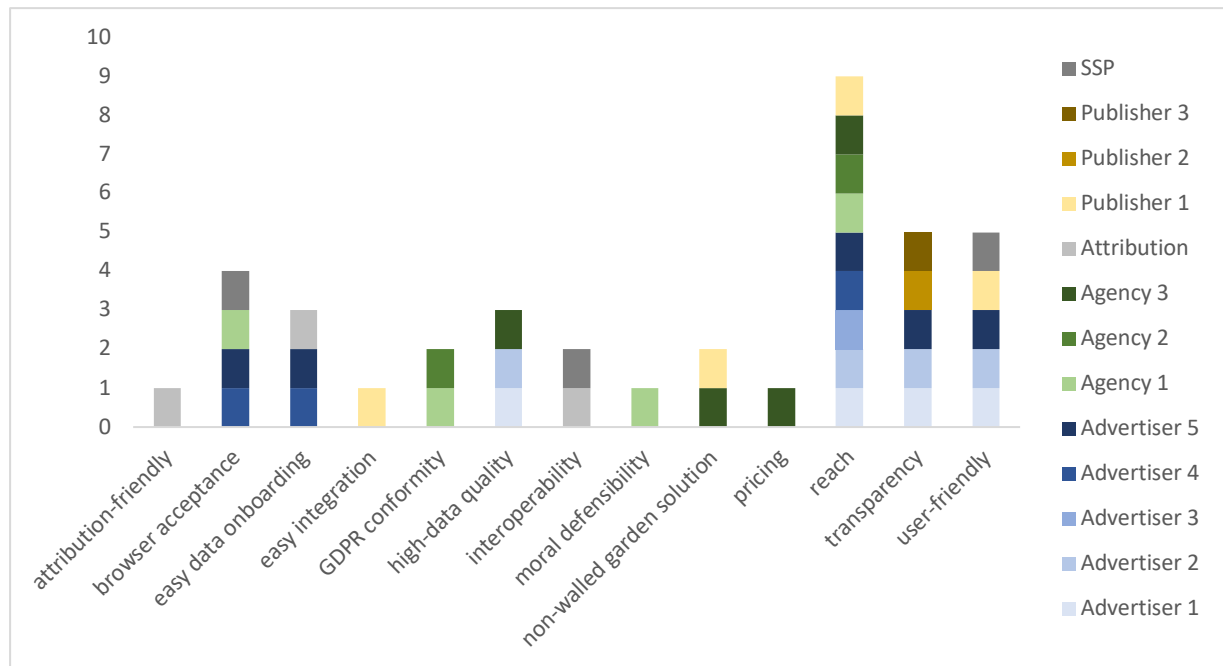


Figure 10.1 - Essential SSO Attributes

The buy-side consisting of advertisers and agencies made it abundantly clear that reach is an essential attribute for all of them. *Agency 2* is stating this in the most undeviating fashion, “I don't think about any technicalities because at the end of the day, reach is my most important metric. Scalability is imperative, everything else is secondary for our clients.” Furthermore, advertisers and publishers put the user in the center of attention, stating that transparency and user-friendliness are vital components, knowing that proliferation can only be attained when users are convinced. *Advertiser 2* stating “Transparency is by far the most important attribute in my opinion and also the simplicity, some solutions are just too complicated.” The importance of a user-centric solution for experts indicates that assumption A4 is likely to occur.

Browser acceptance indicates the fear of some players that some tech companies may ostracize surrogates for either privacy or strategic reasons, restricting reach. High-data quality supports the notion that stakeholder stresses the importance of a new solution, one that is constructed superior to a third-party cookie and not a simple substitute. *Advertiser 2* stated during the interview that price would be secondary if the data quality concerning precision and volume is better. Interoperability, easy integration, data onboarding, and attribution friendliness all clearly demonstrate the need for an encroaching solution, connecting multiple silos and augmenting the purpose of one. Lastly, even though only named by *Agency 3* and *Publisher 1*, multiple stakeholders mentioned their yearning for a more balanced competitor field, which would reduce the power of Google and Facebook.

I discussed the importance of user conviction earlier. This matter is vital for all surrogates, like UID 2.0. Therefore, I wanted to comprehend the perspectives of experts.

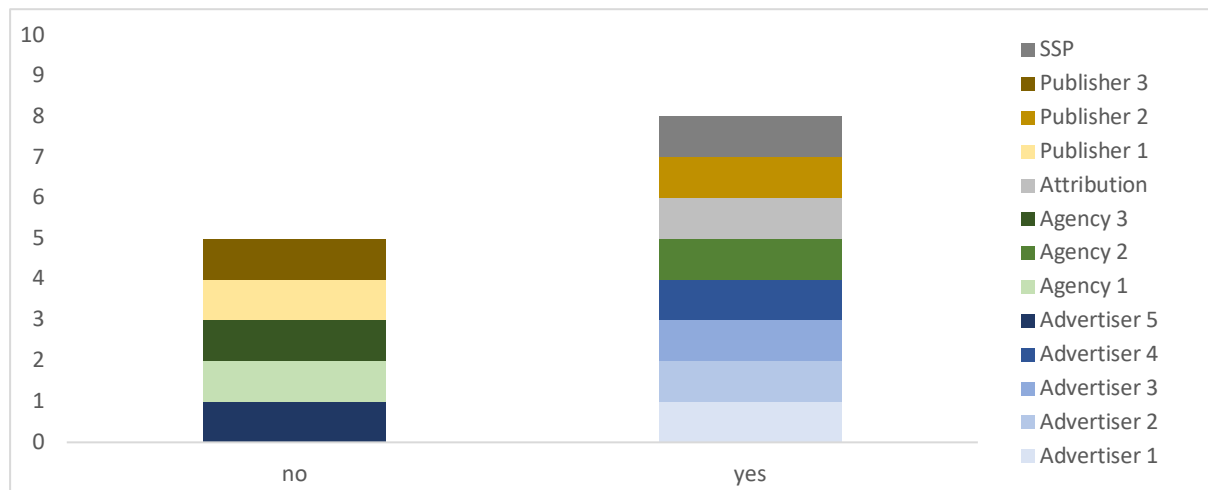


Figure 11.1 - SSO User Conviction Notion

Most experts are convinced that users will eventually support an SSO solution. Irrespective of the ultimate response experts gave on this question, all were convinced that a value exchange needs to take place to convince users. *Attribution 1* states “The internet is not free. That must be made clear to users. You pay with your data and get something great in return, this is almost a judicial matter. People have been made extremely afraid by this cookie issue and I think there will only be an adaptation in masses if you get away from this fear to an added value of these platforms and that is of course as a UID provider something extremely complex, to say how do I manage to convey to the end customer that he should give an opt-in.” *Advertiser 1* sees the responsibility, first and foremost with publishers, “if it is seamless and adds value then yes. Others have tried it before and failed. I hope that all publishers and market participants invest properly so that the whole thing is successful. The optimist in me says, “it will work out”, the realist is of a different opinion.” *Advertiser 4* identifies an SSO log-in as a potential source of trust for users. “Log-In solutions provide a form of validation and create trust. Consumers need to be educated. If our thought process would always be like ‘I only want to push products that consumers know’ then there will be no space for innovation.” Stakeholder that are rather pessimistic note the complexity and missing data literacy of average users as bottlenecks for proliferation. *Advertiser 5* states “If the added value would be clearer then yes. I think especially with the average consumer, it will be very difficult.” *Publisher 1* notes, “it has to provide benefits to the user (on a particular website). That solution must have high coverage in the target market to convince users to sign up for it. Users need to understand why they must log in. The user experience must be user-friendly, and the registration or log-in process must be quick”.

Solution acceptance is also vital on the publisher side. Hence, this question was asked to accumulate the perspective of stakeholders on this matter.

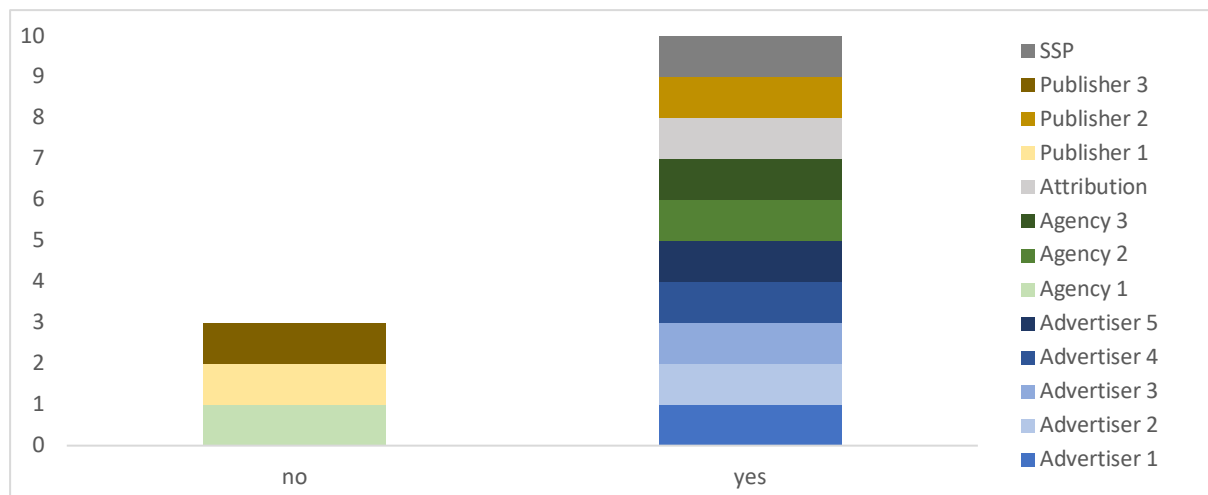


Figure 12.1 - SSO Publisher Conviction

Experts, especially on the buy-side, see the necessity for publishers to support SSO solutions. *Attribution 1* notes “Publishers will have to be fast and will, I think, act as a conglomerate, so I can't imagine that an Axel Springer would use only the netID or only the unified ID. They will try to do both, that's important technically, legally, services, and modeling-wise, I think. *Advertiser 1* supports this notion, “yes, the big ones have to do it. The only ones that might not have to are special-interest sites that can demand very high CPMs. Large publishers were well advised, as I doubt that contextual solutions satisfy the market.” The opposing view to the majority is summarized well by *Publisher 1* who states “Not really. The adoption will be much higher for websites that already operate SSOs for online shops, forums etc. For websites without recurring visitors that are typically only found via Google Search, the adoption will be much harder.”

4.2 USERS

As mentioned before, users are of essential importance when it comes to the implementation and development of surrogates. The collaborative study by The Trade Desk and the British market research firm YouGov resulted in the accumulation of quantitative results. The survey provides valuable insights on the user perspective on cookieless alternatives.

4.2.1 Results

The quantitative result section displays the most relevant findings regarding this project. The data provides first insights into user perception and motivation on SSO solutions. On a top-level, the findings suggest three major implications: users demand more transparency, a better user experience, and prefer a more trustworthy alternative than Facebook and Google. These results add new insights to the research of Palos-Sanchez et al. (2019) and Rosenthal et al. (2020).

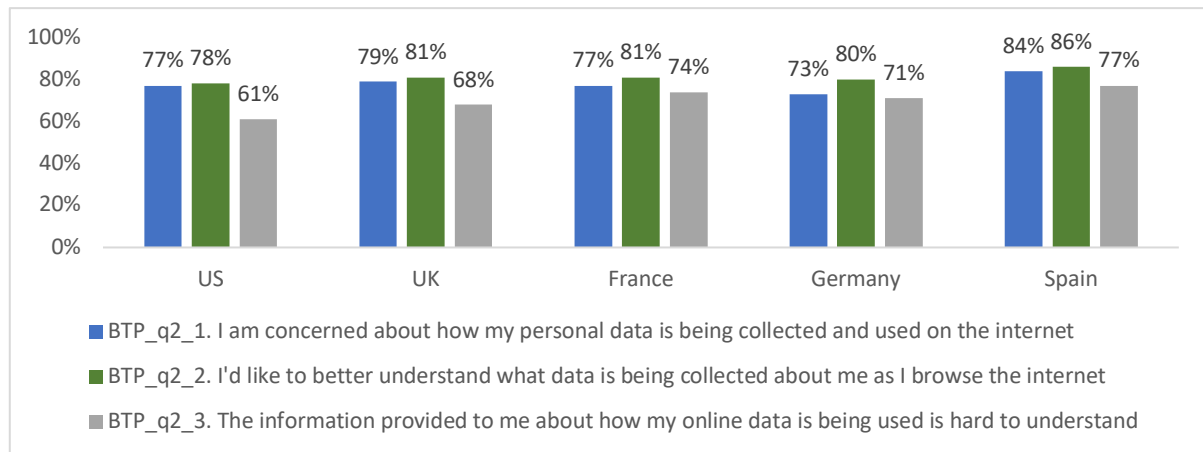


Figure 13.1 - Data Usage POV

The results of figure 13.1 support some findings of Palos-Sanchez et al. (2019) longitudinal study. As stated in the literature review, concerns among users are existent and exert a carry-over effect. This survey confirms that users are concerned with the fact that technology firms collect data, as seen in *BTP_q2_1*. According to Palos-Sanchez et al. (2019), privacy literacy leads to a stronger concern.

This study can't confirm that, but *BTP_q2_2*, clearly indicates that users are interested in improving their understanding. Furthermore, Palos-Sanchez et al. (2019) predict that privacy will become even more important for users and define success for technology providers in the future to some extent. The survey conducted by The Trade Desk supports this notion. As can be seen in figure 16.1, question *BTP_q2_9* and figure 15.1. While the first indicates that trust on data usage is becoming an increasingly significant subscription factor, the results of figure 17.1 indicate that current technology platforms like Google and Facebook face a relevant amount of scepticism. Palos-Sanchez et al. (2019) conclude that users are not fully capable of understanding how data accumulation works and affects their privacy. The survey results support this notion.

Questions *BTP_q2_3* shows that most participants state that the provided information about online tracking is tough to comprehend. Besides privacy concerns, Palos-Sanchez et al. (2019) state that users appreciate the usefulness of targeted advertising. It strongly influences a user's perception and willingness to accept privacy risks. While targeting had no relevancy in this survey, there is an understanding among participants (62% overall agree) that there is a needed trade-off between free content access and advertising consumption. The implications of Palos-Sanchez et al. (2019) are not solely reflective of programmatic advertising. Rosenthal et al. (2020) found this to be true for Facebook as well. Their cross-sectional study across six countries found that people who have higher privacy literacy are more concerned, while people with lower literacy are less concerned.

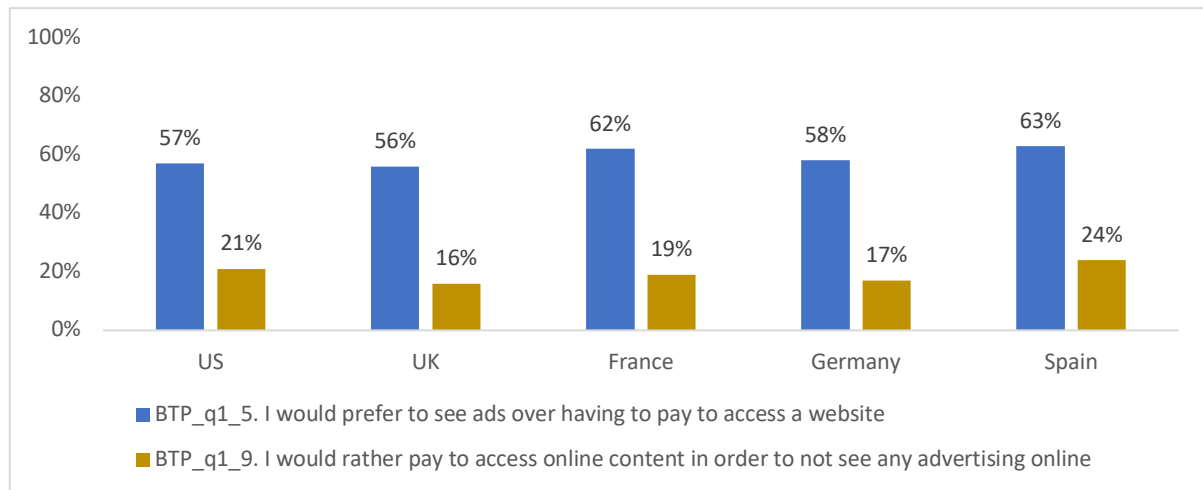


Figure 14.1 - User Preference - Payment

Figure 14.1 indicates that across all countries participants prefer the consumption of adverts rather than pay for content access. Furthermore, a more prudent analysis of the data shows that especially young users between the age of 18 – 24 are willing to see adverts to prevent payment (30% - 50% strongly agree). These results indicate the possibility that users will prefer to see ads in the future leading to the creation of an SSO account, rather than subscribing to a payment option.

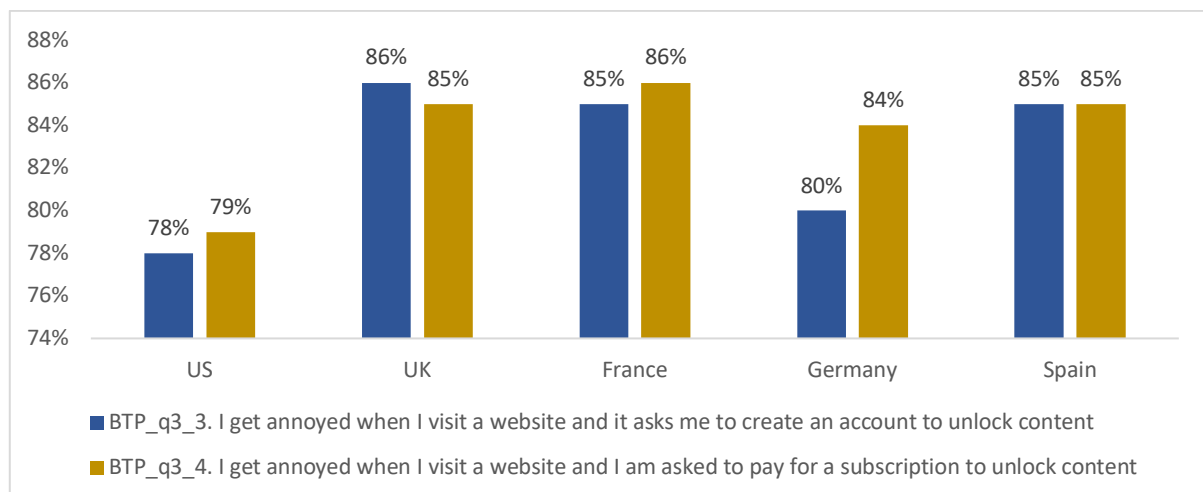


Figure 15.1 - Content Access

Figure 15.1 displays strong distress among users when account or payment processing is necessary to consume content. This result remains consistent among age groups. These results support the notion from above, that users are more likely to consume ads based on SSO or contextual solutions instead of subscribing to a paid method.

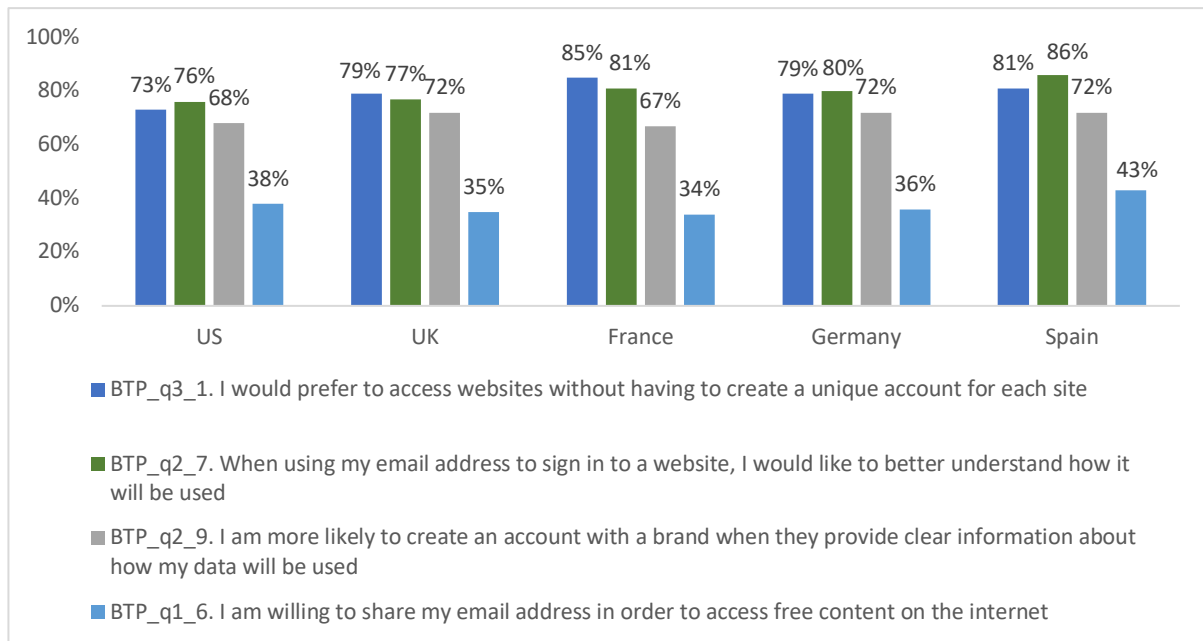


Figure 16.1 - SSO Account Creation

Figure 16.1 shows a plethora of data relating to SSO preferences. A clear majority of users would prefer not to share their email address with others to access a website. This is especially true for older participants (age 55+). The data displays that participants have a stark interest in a better understanding of personal data usage. Trust and transparency are important commodities, and therefore a majority of participants prefer to create an account with a brand that provides clear information on how personal data will be used. Subsequent to question *BTP_q3_1*, most users are not willing to share their email address to access free content. Figure 16.1, questions *BTP_q2_7* and *BTP_q2_9* show that most users prefer simple and transparent solutions if they must sign in. This survey displays that technology providers need to create a solution that is easy to understand and provides a simple one-time log-in process.

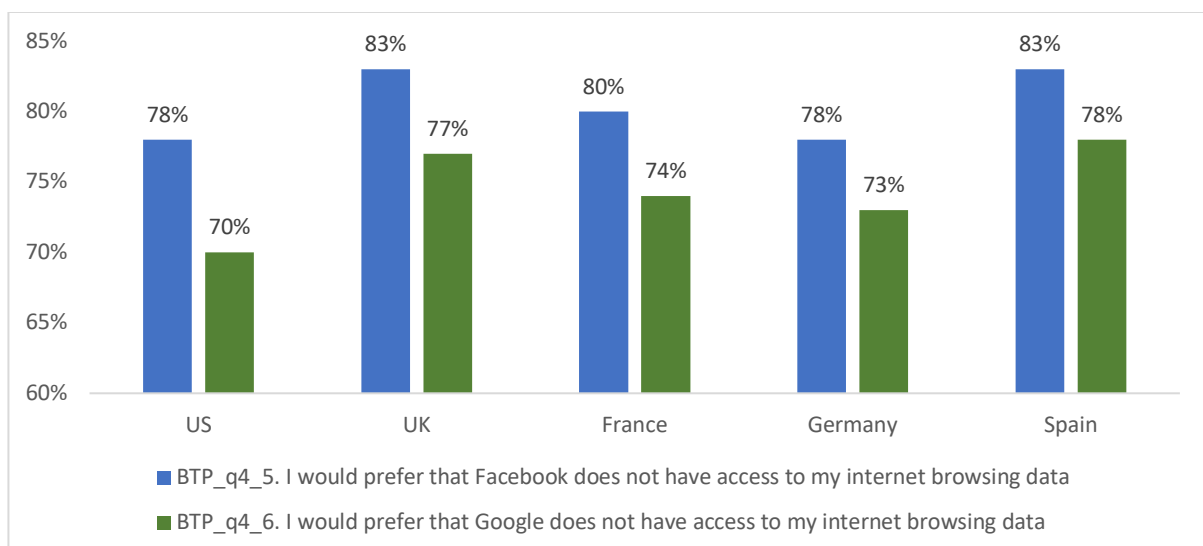


Figure 17.1 - User Scepticism towards Google

Figure 17.1 indicates that users seek a better alternative for an SSO solution. The results are high across all countries and age groups. Older participants (age 55+) tend to have the highest agreement scores. This is supported by the fact that 72% of all participants state that they would prefer to use a separate log-in solution for websites versus having their website browsing data linked to their Google or Facebook accounts. One participant stated, “It provides a middle ground, a compromise to using Google for everything and creating individual accounts for everything where I feel that may be too time-consuming for every single site I go to”. Across all ages, this trend is relatively stable, with a slightly higher percentage of sceptics in the older age bracket (age 55+). The survey results indicate that transparency and trust issues are existent, often kindled through missing privacy literacy that supports uncertainty. This input supports previous findings of researchers like Palos-Sanchez et al. (2019) and Rosenthal et al. (2020) and underlines the previously mentioned assumptions. When presented with the choice, users decide to consume adverts rather than to pay for content, which supports the notion that participants accept the quid pro quo of the internet. But there may be numerous other reasons, like missing exclusivity or the conviction that important news would reach users anyway (Buschow & Wellbrock, 2019). Most participants desire an easy and transparent sign-up process for SSO solutions that allows more control and transparency to improve literacy and build trust in these solutions. Platforms like Google and Facebook provide these solutions but have lost trust among participants and are not a preferred SSO option for the open web, clearly indicating a void that can be filled.

5 CONCLUSION

The starting point of this project was Google's announcement to terminate third-party cookies at the end of 2021, which has later been postponed to 2023. The objective of this work project was to find communicative and technical cues to improve UID 2.0. Interviewing experts and implementing a comprehensive user study supports creating an outlook of the future of programmatic advertising in a cookieless world.

5.1 MANAGERIAL IMPLICATIONS

The findings of this project provide profound insights which support The Trade Desk in further developing UID 2.0., both in terms of communication and technical improvements. The current state of cookieless solutions in Europe is nascent. This might be a reason, why many stakeholders are rather amenable with Google's adjournment. Nevertheless, numerous learnings can be extracted from the 13 interviews.

Firstly, The Trade Desk will need to invest continuously in training sessions to raise the literacy of advertisers, agencies, and publishers and communicate the unique advantages of UID 2.0. The ascent of the 'cookieless future' has reached the executive stage but detailed knowledge on essential surrogates is missing. The level of focus and urgency differs significantly, based on the level of literacy and economic dependency. The challenges for the buy-side primarily pertain to attribution, first-party data aggregation, followed by the cookieless future. Many marketers seem to isolate the challenges, while a new deterministic solution, such as UID 2.0, would appease all challenges to an extent. This mere fact indicates that there is still a lack of knowledge, which is understandable, based on the scarce testing possibilities. Offering testing possibilities in 2022 will be vital to teach the unique prowess of UID 2.0 and proliferate its usage in the ecosystem. Two reasons underline the importance of speed. Firstly, stakeholders from all sides are interested in conducting tests. Secondly, many stakeholders view Google's FLoC and Facebook as paramount solutions that can't be challenged. An accelerated proliferation could lead to a change of perception and power momentum.

Secondly, The Trade Desk will need to provide a sophisticated user acquisition strategy and communicate the value exchange to users. Besides reach, stakeholders see transparency and user-friendliness as the most important attributes for an SSO solution. Stakeholders understand the fact that we are heading into a 'permission era', in which tracking granularity is dependent on the level of consent given by the user. Providing a clear user acquisition strategy is vital to gain further conviction from stakeholders that UID is a real competitor. Users need to understand the quid-pro-quo of the open internet. The Trade Desk and others will need to communicate this value exchange.

Thirdly, The Trade Desk will need to provide a seamless integration solution for smaller publishers to scale and proliferate UID 2.0 and raise appeal for advertisers and agencies. One of the core strengths of The Trade Desk is its reach on the open internet, consisting of large, medium, and small publishers. While larger and even some medium publishers have backend teams that can implement a UID integration, smaller publishers lack employees as well as technical resources. To continuously leverage the strength of the open internet, an easy implementation process will need to be established.

Lastly, The Trade Desk shall provide a user privacy-friendly measurement approach. Attribution and marketing measurement are seen as the major challenge for advertisers. A cookieless world will kindle even stronger needs. Providing a proprietary, or even external solutions through measurement firms, would raise the inducement of UID 2.0. Google already caters a solution with its Ads Data Hub, which is seen as a major advantage by attribution and measurement experts.

Beyond Unified ID 2.0, the future of programmatic will change substantially. While there are different opinions on the vitality of programmatic in a cookieless world, there are some inferences that can be drawn for the industry overall, that underline the assumptions made in section 2.5.

Firstly, players that have successfully integrated a first-party data strategy endowed with data aggregation tools are going to succeed in a cookieless world faster. In a world that is driven by data, and fewer options to complement your actions with the data from others, data aggregation is vital. Multiple stakeholders, beginning with advertisers and publishers, are already aggregating more first-party data than ever before to endow themselves with high-quality information. This project serves as proof. A growing tool set, both from external providers and proprietary systems, will be essential for stakeholders to leverage big data. This could create new forms of income for advertising technology and attribution firms.

Secondly, continuous technical developments in a post cookie world will most likely come from tech firms and publishers. It is important to mention that publishers and tech firms show a level of technical maturity that others lack, so far. While ad tech firms innovate continuously, publishers confirmed that the cookie termination has accelerated their innovation process. This drive is due to the economic importance of online media, which serves higher margins with sophisticated tracking technology.

Thirdly, generic alternatives like contextual gain traction, publishers invest in more sophisticated contextual solutions and advertisers are interested in solutions that don't provide any legislative question marks, at least for branding campaigns. Depending on the proliferation process of deterministic alternatives like UID 2.0 and the potential budget shifts to walled gardens, contextual advertising may gain an even more considerable share.

Lastly, an essential learning is that the next level of privacy is dawning. Experts are certain that a more customer-centric approach is essential to success of digital advertisement. This is supported by the fact that users want to increase their literacy. Even if publishers demand some form of identification, it will not be sustainable without the consent of users. The user research results underline the need for an open internet solution that is not regulated by Google or Facebook. Users prefer advertising-funded solutions, but concessions in the form of transparency, user-friendly design, and choice are ineluctable. If these concessions are implemented, a sincere value exchange could be attained. We move to permission-focused tracking era. Research cases that indicate unlawful tracking are very likely to abate.

Significant reach can only be realized if users are convinced to participate. To further extend a flourishing programmatic ecosystem, users need to understand the quid-pro-quo of the internet. A true value exchange needs to be communicated, first and foremost, by SSO providers and publishers. Google and Facebook have been able to do so, in different ways, and seem to have a competitive advantage, for now. This challenge lies ahead for Unified ID 2.0 and others that operate on the open internet and will truly determine the future of programmatic advertising in a cookieless world.

5.2 RESEARCH CONTRIBUTIONS

While the managerial implications and suggestions for The Trade Desk serve as the primary contribution for this work project, there are academic research contributions. The foundation of the research contribution lies in the comprehensive display of information from both experts and users on third-party cookie surrogates.

The expert interview results shine a new light on previous research and refute previous work from Andrew (2019) and Marotta et al. (2019) In addition, it provides a unique perspective from experts on

a matter that will change the playing field for the advertising industry. This includes but is not limited to tool investments, testing, vital organizational challenges, and much more.

Research dealing with user tracking and data privacy literacy has been done numerous times before this project. This paper reconfirmed findings from Palos-Sanchez et al. (2019) and Rosenthal et al. (2020) but integrated new variables by accommodating advanced third-party cookie alternatives. The demand for more transparent solutions has been demanded extensively in the past. This project underlines the need for more transparency. Beyond that, this paper is one of the first that displays user sentiment on SSO solutions and the implications it has in online content consumption.

6 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE WORKS

6.1 LIMITATIONS

Due to the nascent stage of this topic, many interview participants have not had the chance to test all solutions comprehensively. This led to some interview responses that were based on theoretical knowledge, or even led to no definitive answer at all. A follow-up interview with some would therefore make sense once all solutions or at least some have been tested. Furthermore, most of these solutions will be implemented on a global stage, even though in different settings, depending on the legislative restriction. Nevertheless, a more global perspective on the matter would certainly yield interesting insights.

6.2 RECOMMENDATIONS FOR FUTURE WORKS

This was the first project of its kind and should be treated as such, the starting point for a research topic that yields a lot of potential for future research. The rationale of an exploratory research is based on the premise that this is a new and complex topic, in which nuances matter. Once comprehensive campaign data for multiple solutions is available, there are many possibilities researchers could provide intriguing insights on this topic in the future. While I covered multiple stakeholder groups in my project, I propose that future research focus should focus on advertisers, publishers, and users. The suggested future works should ideally be conducted in order.

Advertisers are providing massive monetary inflow and have major influence on the success of surrogates. Proliferation of any SSO solution will only be successful with advertisers. Comprehensive quantitative insights would provide great value. A research project, containing comprehensive A/B testing of surrogate supported campaigns versus cookie supported campaigns, could provide great insights, and accelerate proliferation.

While superior performance metrics could convince advertisers, publishers could be convinced by economic advantages. As mentioned, multiple times by others in this paper, publishers are seen as the stakeholder that most likely would face econometric hardship. It would be appealing to understand the economic implications on the implementation and non-implementation of SSO solutions. A research project which would proclaim major economic benefits (e.g., higher CPMs) for publishers that leverage SSO solutions could accelerate publisher adoption.

Lastly, users are at the core of any successful SSO integration. The results indicate that many business stakeholders share this opinion. A longitudinal study on the acceptance and perspective of SSO log-in solutions for users would be very fascinating for the industry and the academic field. Research could cover themes including user-privacy literacy, transparency, user-friendliness, and user preference between paid and free content solutions.

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8 APPENDIX

This section displays all questions that are included in the results section, for each stakeholder group:

Advertiser

1. Status Quo - Current Use of Programmatic & Data

- 1.1. How would you describe the strategic importance of programmatic?
 - Very important
 - Important
 - Neutral
 - Low
 - Very low
- 1.2. What are the three key digital challenges you're facing?
 - 1.
 - 2.
 - 3.

2. Perspective on third-party cookies

- 2.1. How much attention does the topic currently receive in your firm? What are you currently doing to prepare yourself for impact (e.g., testing cookie-free solutions)?
- 2.2. How do you think this will impact your branding and performance campaigns (e.g., budget shift to walled gardens; premium vs. non-premium)?
 - Branding
 - Performance
- 2.3. Do you see major upsides, concerning the loss of third-party cookies?
 - Yes, if so, which?
 - No
- 2.4. Do you plan to invest into new tools to circumvent the loss?
 - Yes, if so, which ones & why?
 - no, why not?

- 2.5. Has Google's adjournment led to a deceleration of the innovation process within your organization?

3. Solutions

- 3.1. What is your opinion on the following surrogates? (Have you heard of the following surrogates?)
 - NetID
 - UID 2.0
 - Google FLoC
 - Facebook ID
 - Adform ID Fusion
- 3.2. What do you expect from a log-in solution to be a viable solution for your firm?
- 3.3. Do you think an SSO log-in solution will persuade a critical number of users?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?
- 3.4. Do you think an SSO log-in solution will persuade a critical number of publishers?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?

Agency

1. STATUS QUO - CURRENT USE OF PROGRAMMATIC & DATA

- 1.1. How would you describe the strategic importance of programmatic?
 - Very important
 - Important
 - Neutral
 - Low
 - Very low
- 1.2. What are the three key digital challenges you're facing?
 - 1.
 - 2.
 - 3.

2. Perspective on third-party cookies

- 2.1. How much attention does the topic currently receive in your firm? What are you currently doing to prepare yourself for impact (e.g., testing cookie-free solutions)?

- 2.2. What are the questions you're confronted with from advertisers?
- 2.3. How do you think this will impact your branding and performance campaigns (e.g., budget shift to walled gardens; premium vs. non-premium)?
 - Branding
 - Performance (e.g., Retargeting)
- 2.4. Do you see major chances or risks, concerning the loss of third-party cookies?
 - Yes, which ones?
 - No
- 2.5. Are you working on tools to compensate for 3rd party loss?
 - yes, if so, what are you doing?
 - no, why not?
- 2.6. Has Google's adjournment led to a deceleration of the innovation process within your organization?

3. Solutions

- 3.1. What is your opinion on the following surrogates? (Have you heard of the following surrogates?)
 - NetID
 - UID 2.0
 - Google FLoC
 - Facebook ID
 - Adform ID Fusion
- 3.2. What do you expect from a log-in solution to be a viable solution for your firm?
- 3.3. Do you think an SSO log-in solution will persuade a critical number of users?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?
- 3.4. Do you think an SSO log-in solution will persuade a critical number of publishers?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?

ATTRIBUTION

1. Status Quo - Current Use of Programmatic & Data

- 1.1. How would you describe the strategic importance of programmatic?
 - Very important
 - Important

- Neutral
 - Low
 - Very low
- 1.2. What are the three key digital challenges you're facing?
 - 1.
 - 2.
 - 3.

2. Perspective on third-party cookies

- 2.1. How much attention does the topic currently receive in your firm?
- 2.2. What are the questions or concerns you're confronted with from clients?
- 2.3. How do you think this will impact your branding and performance campaigns?
 - Branding
 - Performance (e.g., Retargeting)
- 2.4. Do you see major chances for your firm, concerning the loss of third-party cookies?
- 2.5. Do you plan to invest into new tools or upgrades (e.g., econometric modeling)?
 - yes, if so, what are you doing?
 - no, why not?
- 2.6. Has Google's deference led to a deceleration of the innovation process?
 - Yes
 - No

3. Solutions

- 3.1. What is your opinion on the following surrogates? (Have you heard of the following surrogates?)
 - NetID
 - UID 2.0
 - Google FLoC
 - Facebook ID
 - Adform ID Fusion
- 3.2. What do you expect from a log-in solution to be a viable solution for your firm?
- 3.3. Do you think an SSO log-in solution will persuade a critical number of users?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?
- 3.4. Do you think an SSO log-in solution will persuade a critical number of publishers?

- Yes. Why?
- No. What do you think needs to be done to convince as many users as possible?

PUBLISHER

1. STATUS QUO - CURRENT USE OF PROGRAMMATIC & DATA

- 1.1. How would you describe the strategic importance of programmatic?
 - Very important
 - Important
 - Neutral
 - Low
 - Very low
- 1.2. What is the current share of behavioral vs. contextual advertising on your site? In %)?
- 1.4. What are the three key digital challenges you're facing?
 - 1.
 - 2.
 - 3.

2. Perspective on third-party cookies

- 2.1. According to the CMA & Google, publishers who can't leverage third-party data lose 70% of revenue vs. the ones who can. How much attention does the topic currently receive in your firm? What are you currently doing to prepare yourself for impact (e.g., testing cookie-free solutions)?
- 2.2. Publishers are often seen as the ones who will suffer the most from this change. Do you see major chances for your firm, concerning the loss of Third-Party Cookies?
 - Yes, if so, which?
 - No
- 2.3. How do you think this will impact your branding and performance campaigns?
 - Branding
 - Performance (e.g., Retargeting)
- 2.4. Are you working on tools to compensate for 3rd party loss?
 - yes, if so, what are you doing?
 - no, why not?
- 2.5. Has Google's deference led to a deceleration of the innovation process?
 - Yes

- No
- 2.6. Do you plan to create or push other sectors of revenue? If so, which ones (e.g., pushing paid articles, subscriptions, advertorials)?

3. Solutions

- 3.1. What is your opinion on the following surrogates? (Have you heard of the following surrogates?)
 - NetID
 - UID 2.0
 - Google FLoC
 - Facebook ID
 - Adform ID Fusion
- 3.2. What do you expect from a log-in solution to be a viable solution for your firm?
- 3.3. Do you think an SSO log-in solution will persuade a critical number of users?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?
- 3.4. Do you think an SSO log-in solution will persuade a critical number of publishers?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?

SSP

1. Status Quo - Current Use of Programmatic & Data

- 1.1. How would you describe the strategic importance of programmatic?
 - Very important
 - Important
 - Neutral
 - Low
 - Very low
- 1.2. What are the three key digital challenges you're facing?
 - 1.
 - 2.
 - 3.

2. Perspective on third-party cookies

- 2.1. How much attention does the topic currently receive in your firm? What are you currently doing to prepare yourself for impact?

- 2.2. What are the questions or concerns you're confronted with from clients?
- 2.3. How do you think this will impact your branding and performance campaigns?
 - Branding
 - Performance (e.g., Retargeting)
- 2.4. Do you see major chances or risks for your firm, concerning the loss of third-party cookies (e.g., lower CPMs)?
- 2.5. Do you plan to invest into new tools or upgrades?
 - Yes, if so, what are you doing?
 - No, why not?
- 2.6. Has Google's deference led to a deceleration of the innovation process?
 - Yes
 - No

3. Solutions

- 3.1. What is your opinion on the following surrogates? (Have you heard of the following surrogates?)
 - NetID
 - UID 2.0
 - Google FLoC
 - Facebook ID
 - Adform ID Fusion
- 3.2. What do you expect from a log-in solution to be a viable solution for your firm?
- 3.3. Do you think an SSO log-in solution will persuade a critical number of users?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?
- 3.4. Do you think an SSO log-in solution will persuade a critical number of publishers?
 - Yes. Why?
 - No. What do you think needs to be done to convince as many users as possible?