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Online Identification at Criteo

May 2020

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criteo.

Safe harbor statement

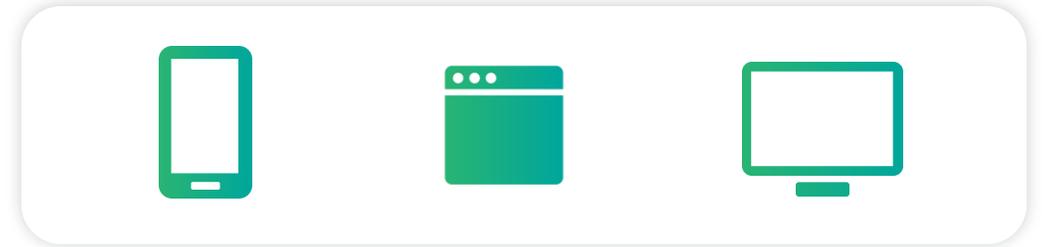
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This presentation includes certain non-GAAP financial measures as defined by SEC rules. As required by Regulation G, we have provided a reconciliation of those measures to the most directly comparable GAAP measures, which is available in the Appendix slides.

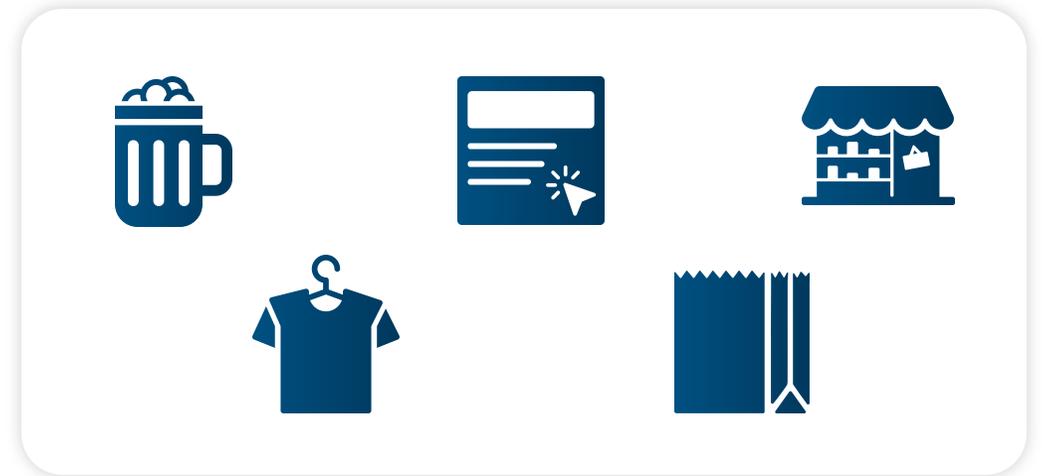
Identification is at the core of the online user experience

A users' Internet experience can be **fragmented** between different websites, devices, platforms, merchants, mobile apps ...



Identification enables a **seamless** and **personalized** user experience

- Access **relevant publisher content**
- Enjoy enhanced **shopping journey** (recommended products, persistent shopping basket, payment...)
- See **personalized, relevant ads**



Simply put, to enjoy the Internet users need to pass on some form of identifiers.

Identification supports the entire online ecosystem

The online ecosystem is based on three **business models** – All three rely on user identification:
Digital advertising, Paywalls and Ecommerce

Advertising funds all the free content, information, services and apps on the Internet

Personalized advertising benefits all



Users get free access to relevant content and services



Advertisers see higher return on ad spend



Publishers generate better monetization

Brands and advertisers are able to



Deliver **personalized ads**

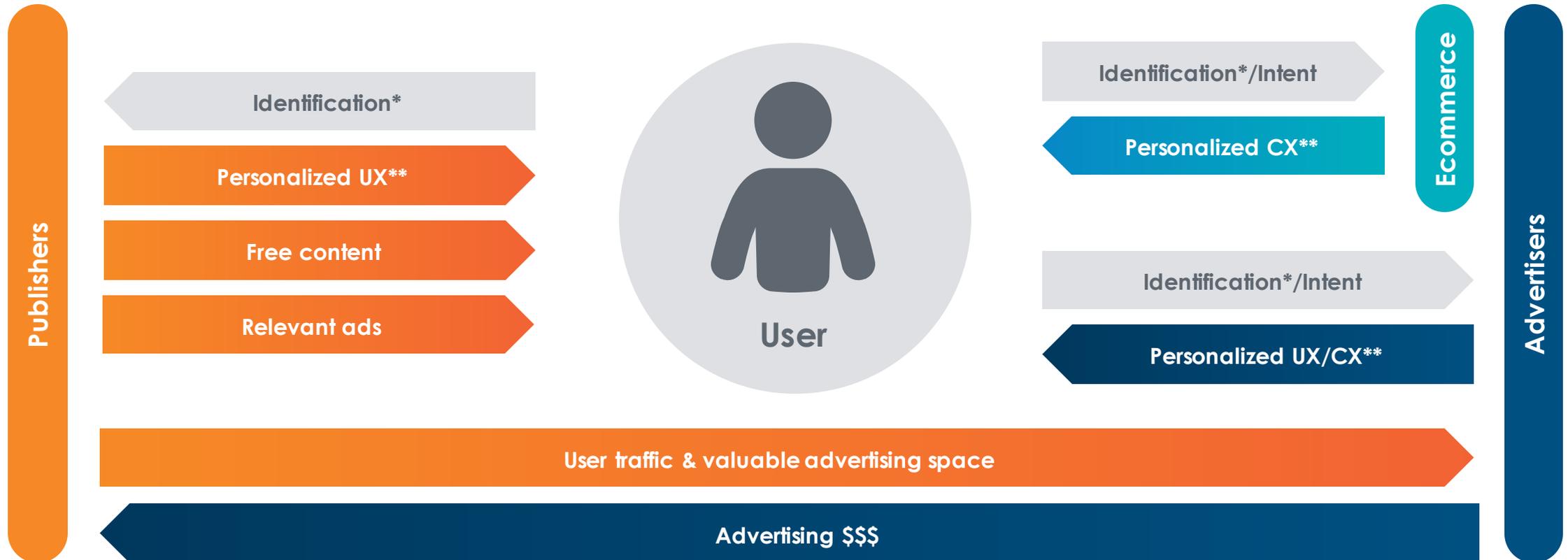


Measure advertising **performance** and **attribution**



Track **purchase conversion**

In short, identification enables value exchanges on the Internet



* Does not need to be Personal Identifiable Information (PII)

** UX: User Experience, CX: Consumer Experience

Online identification relies on multiple mechanisms

Today, **three main mechanisms** are being used to personalize the online user and shopper experiences



In the web, cookies allow advertisers to combine different signals to improve the browsing experience and relevance of product recommendations and personalized ads

- Do not store personally identifiable data (PII)
- Limited shelf-life
- First-party cookie is set by the website a user visits
- Third-party cookie is set by a website other than the one visited by the user



In apps, device identifiers (IDs) allow for user identification

- Device-specific ID
- Work across apps
- May or may not contain PII



In logged-in environments, users **sign on** to news or ecommerce websites, social networks or apps

- ID may be an email address
- Persistent ID
- Generates PII for enhanced UX/CX

Online identification in the web is evolving

Third-party cookies are becoming **less accessible** as browsers progressively move away from this technology



In Sep 2017, **Safari** released Intelligent Tracking Prevention (ITP), blocking cross-site tracking by default



In Sep 2019, **Firefox** started blocking third-party cookies by default



In Jan 2020, **Microsoft Edge** started blocking third-party cookies by default



Chrome plans to end support for third-party cookies by 2022

**The industry is long overdue in replacing cookies
as the technique used for personalized advertising on the web**

Online identification is getting increasingly regulated

Regulators closely look at the way users' data is being **collected, stored and monetized** by all players in the ecosystem



In Europe

The **General Data Protection Regulation (GDPR)** requires all Internet publishers to collect user consent in an informed and transparent way before their data can be used for several purposes, including advertising.



In the U.S

The **California Consumer Privacy Act (CCPA)** imposes users to agree on the usage of their personal data by third-party partners of a website.

- ❑ These regulatory frameworks are in the process of **being implemented** by Internet players and may continue to evolve.
- ❑ **Other regulations** (e-Privacy regulation in Europe, new pending law in Brazil, ...) are also in the works.
- ❑ Consequences on the ecosystem are **not yet fully apprehended**.

What is the likely impact to the ecosystem?

Consumer sentiment is evolving, with differing individual preferences on the balance between convenience/relevance and more control over the use of data

While still early, **recent changes** to browser settings and online privacy regulations ...



Effectively create a **compartmentalized internet**, offering seamless experiences inside each walled-garden but little privacy



May lead to **lower revenue for publishers** in the open Internet



Are likely to have **long-term impacts** on consumers, free content producers, and anyone doing business on the Internet

A green square graphic with a white border, positioned on the left side of the slide.

OUR MISSION

To power the world's

MARKETERS

with trusted and
impactful advertising

Criteo has a clear and strong position on online identification

Since inception, we've had **strong convictions** on identification and privacy, about what's right for the user and where we think the industry should be heading.

- 1 Users' control over their ad experience creates **trust**
- 2 User-personalized ads provide multiple benefits **when it's done right**
- 3 Browsers and devices should not control user data portability - **users should.**

The data we collect is non sensitive and shopper centric

Criteo Engine uses hundreds of variables, based on **signals** collected when users navigate online

Data we collect

- ✓ **Shopping interactions/User engagement**
events (home page, products listing, product page, basket, check-out), timestamp, frequency...
- ✓ **Product catalog data**
Product category, vertical, price,...
- ✓ **User fatigue**
Number of displays seen, clicks
- ✓ **Inventory quality**
publisher, size of ads...

Sensitive data we don't collect

- ✗ Financial information (bank account, credit card)
- ✗ Racial or ethnic origin
- ✗ Political opinion
- ✗ Religious or philosophical beliefs
- ✗ Genetic or biometric data, health data
- ✗ Sex life or sexual orientation

Collected signals are **associated with user identifiers** to create audiences, make product recommendations, for *Dynamic Creative Optimization+* and for predictive bidding

Criteo's trusted and impactful advertising builds on five key assets for online identification

1

Privacy by design approach

2

Large first-party footprint

3

Unrivaled Identity Graph

4

Exposure to cookie-less environments

5

World-class technology & R&D

Our *Privacy by Design* approach creates user and advertiser trust

We develop all our products and features with **privacy-first** in mind.

This drives users to **trust us with their identity** and advertisers to **trust us with their data**.



Privacy by Design ensures industry-level of safety for marketers and consumers alike:

- **Power of information** Consumers feel confident when understanding what we do
- **User choices** We make every effort to enhance the shopping experience and respect that some consumers would rather opt out. We make it easy for them to do so with a single click (Ad Choices)
- **Security & Access** Data is securely collected and retained using state-of-the-art pseudonymization techniques considered best-practice under GDPR
- **Privacy counsel** Our privacy experts constantly assess risk, provide company-wide privacy training, and help build even better products

We always

- Collect only the data that is required to deliver our service
- Store SHA256 hash of MD5 hash of emails*
- Minimize data retention
- Ensure data security
- Provide a user-friendly opt-out tool

We never

- Record directly identifying information
- Store any original files containing emails
- Use or store a client's audience data for any other purpose
- Impact a client's intellectual property with respect to customer data
- Use any 3rd-party owned or managed data centers

* A hash of an email creates a series of characters that doesn't permit individual identification. For example, a hash of name@mail.com would be 98307a5ba02fa1072b8792f743bd8b5151360556b8e5a6120fa9a04ae02c88c0. User identifiers (IDFA, AAID, Criteo Cookie ID) are randomly generated IDs that are not linked to or derived from any directly identifying information, and therefore don't need to be hashed. Both hashed emails and user identifiers are considered "pseudonymous data", a subcategory of personal data that does not allow the direct identification of the data subject.

Our very large first-party footprint puts us in a privileged position

First-party data is collected **directly by websites** from their audiences - it never relies on third-party cookies

Criteo Marketing Solutions

On the **demand side**, we are **integrated** in the workflow of **all advertisers** we work with

- All data collected on our 20,000+ clients' websites and apps is **first party**

On the **supply side**, Criteo Direct Bidder is connected to **4,600+** web and app publishers, giving us access to **first-party identifiers** (email, log-ins) on **premium inventory**

Criteo Retail Media

Criteo Retail Media **mostly uses first-party data**

- Relies on **direct relationships** with retailers
- Our solutions use a **combination of first-party data** (increasingly tied to deterministic identity) and **contextual data** to target, optimize and measure campaigns

Our unrivalled Identity Graph is highly differentiated

The **size, quality, persistence and focus** of our graph make it a highly differentiated asset for identification

Large

2B+ users,
size comparable
to Facebook's

High-Quality

Largely deterministic
(matching 4 sources of
identifier data with high
level of certainty)

Persistent

96% identities contain
one or several persistent
identifiers (hashed
emails, logins, app IDs)

Focused

Focus on
linking users to
shopping data, unique
outside Amazon

Our broad app footprint provides large cookie-less supply

Identification in apps is **cookie-less by design**, based on mobile device identifiers



Device identifiers are, by nature, **cross-app and persistent**



Over **35%** of our business is generated on **app supply**



We access inventory on **22,600 apps***

Including **over 430 apps** connected to **Criteo Direct Bidder**



Our Identity Graph makes us **resilient to potential changes** to mobile device identifiers

We have world-class technology to adapt to identification evolution

Our engineers have a **track record** of adapting to evolving technology and regulation

About **700 engineers**
in R&D and Product

Over **14-year** expertise
in AI technology

Criteo operates in environments
where **third-party cookies are not available**

2009
First ad tech
company to include
opt-out button on ads

2012
Solutions for
Apple users

2017
Solutions for
Apple Safari

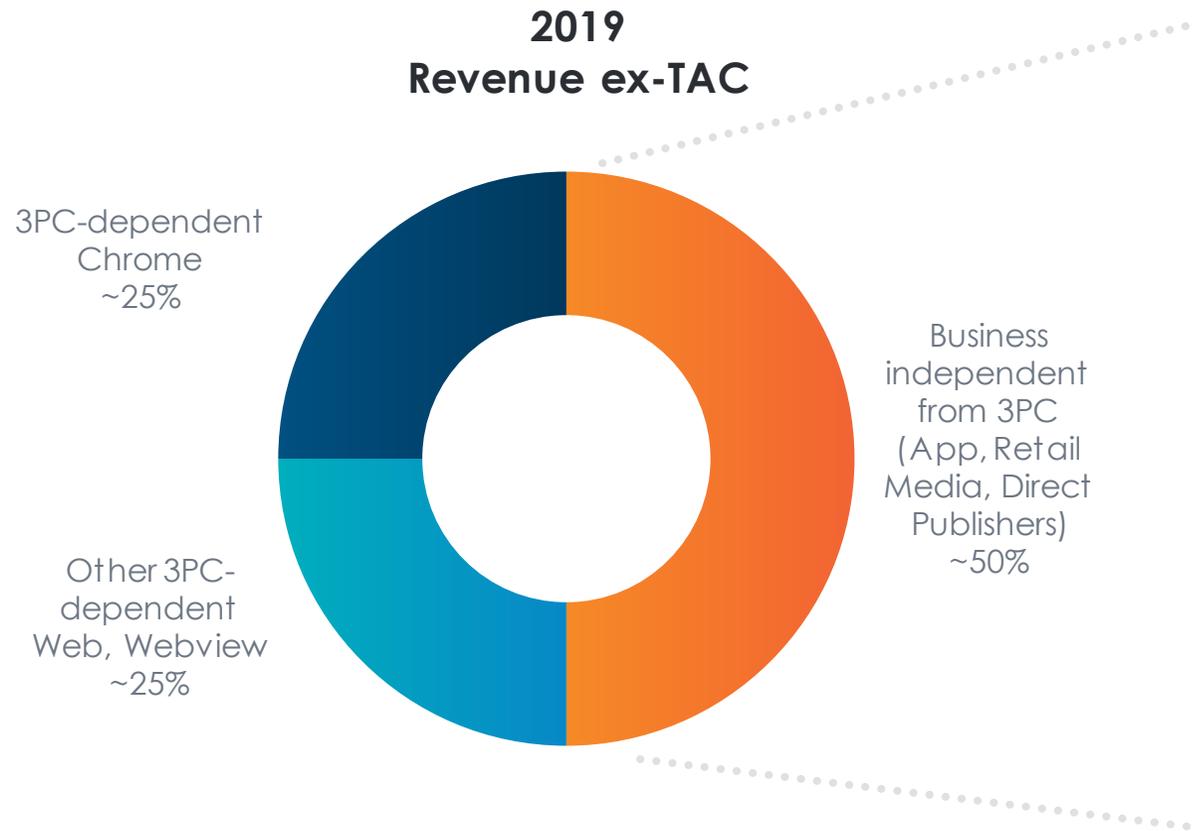
2018
GDPR-compliant solutions
GDPR becomes global
privacy standard

2019
Solutions for
Firefox & Edge

2020
Solutions for
CCPA

Half of our business does not rely on third-party cookies

Our goal is to become **100% independent**



- Advertising in app uses **app identifiers**, not cookies
 - “App” includes “Web-to-App”, which uses **web demand**, i.e. shopping intent captured on advertisers’ websites (where we access **1P cookies**) to buy **app inventory**
- Retail Media only uses **1P cookies** and contextual data
- Criteo Direct Bidder gives us direct access to supply, i.e. **first-party inventory**

Our online identification strategy has four complementary layers



**First-party
footprint**



**Consumer data
& ID Graph**



**Product
portfolio**



**Industry
leadership**

First-party footprint



As a **trusted partner**, we are integrated into all our advertisers' and direct publishers' websites

We have a **privileged position** to embed ourselves into their workflow

This means that large amounts of our data are **first party** and provide us the means to create identification solutions for our clients, including for user-personalized advertising

We grow our first-party data footprint through

- More **direct publisher integrations** on both web and app
- Onboarding **first-party identifiers** (like hashed emails) from our advertisers and publishers



Daily **Mail**.com



The Telegraph

Voodoo

Consumer data & Identity Graph



Criteo Shopper Graph contains more than **2 billion+ users** matched across multiple identifiers

96% of identities include **non-cookie identifiers**

We enrich the Criteo Shopper Graph to ensure it becomes even less cookie-dependent over time, through

- Additional **persistent identifiers**
- New identification capabilities through trusted **partnerships**



Product Portfolio



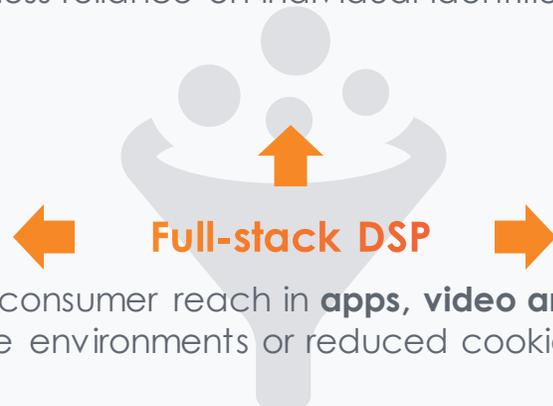
We have **diversified** our solutions over the past years

We operate using multiple **cookie-less solutions** to personalize ads in Criteo's App and Retail Media businesses

Our **full-stack DSP** product strategy reduces our cookie exposure along two dimensions

- Going **upper-funnel**
- Broadening **consumer reach** across multiple non-cookie channels

Going "**upper- funnel**" means less reliance on individual identifiers



Broadening consumer reach in **apps, video and CTV** means either non-cookie environments or reduced cookie exposure overall

What this mean for our product roadmap

- Grow **audience-based targeting** (e.g. with our Consideration solutions)
- Expand **contextual** advertising capabilities
- Adapt **measurement** to non-cookie environments

Industry leadership



Criteo is **the largest independent ad tech** company in the world

We are in a strong position to partner with other players, trade associations, and regulators to help define **new industry standards** for privacy-first, personalized advertising

Criteo subscribes to W3C influence groups

- Privacy Community Group
- Improving Web Advertising Business Group



With a focus on driving **privacy, control and transparency**, we continue to make sure digital advertising funds the open Internet, keeping services free to users and empowering them to choose their browsing experience

Industry Leadership: Investing in Best Practices

Criteo has an extensive number of certifications that are reviewed annually by governing and standards bodies, and supports initiatives that deliver greater transparency and control to users. We were early adopters of the following:





Appendix: Criteo Identity Graph

Criteo ID Graph is part of the Criteo Shopper Graph

A unique understanding of the customer journey

Exclusive Shopping Intent Data

Identity Graph

Stitches together device IDs across billions of user timelines

Well over 2B users in ID graph, matched cross-device and same device

Deterministic Foundation
60% match rate

criteo.
**Shopper
Graph**

Intent Map

Finds patterns of behavior & listens to signals of intent

13B+ advertiser & publisher events captured

120+ intent signals per shopper

Criteo Identity Graph

Stitches together device identifiers across billions of user timelines

Criteo's Advantages

~75% of clients participate
Well over 2B users in ID
Graph
Global Coverage

Open, transparent, secure, fair

Encrypted and double-hashed personal identifiable information (PII)

Access at no additional cost

Persistent

96% of Criteo IDs also contain long-term identifiers such as hashed emails or app identifiers besides cookies

Participation

Opt-in by sending hashed identifiers via OneTag or App Events SDK



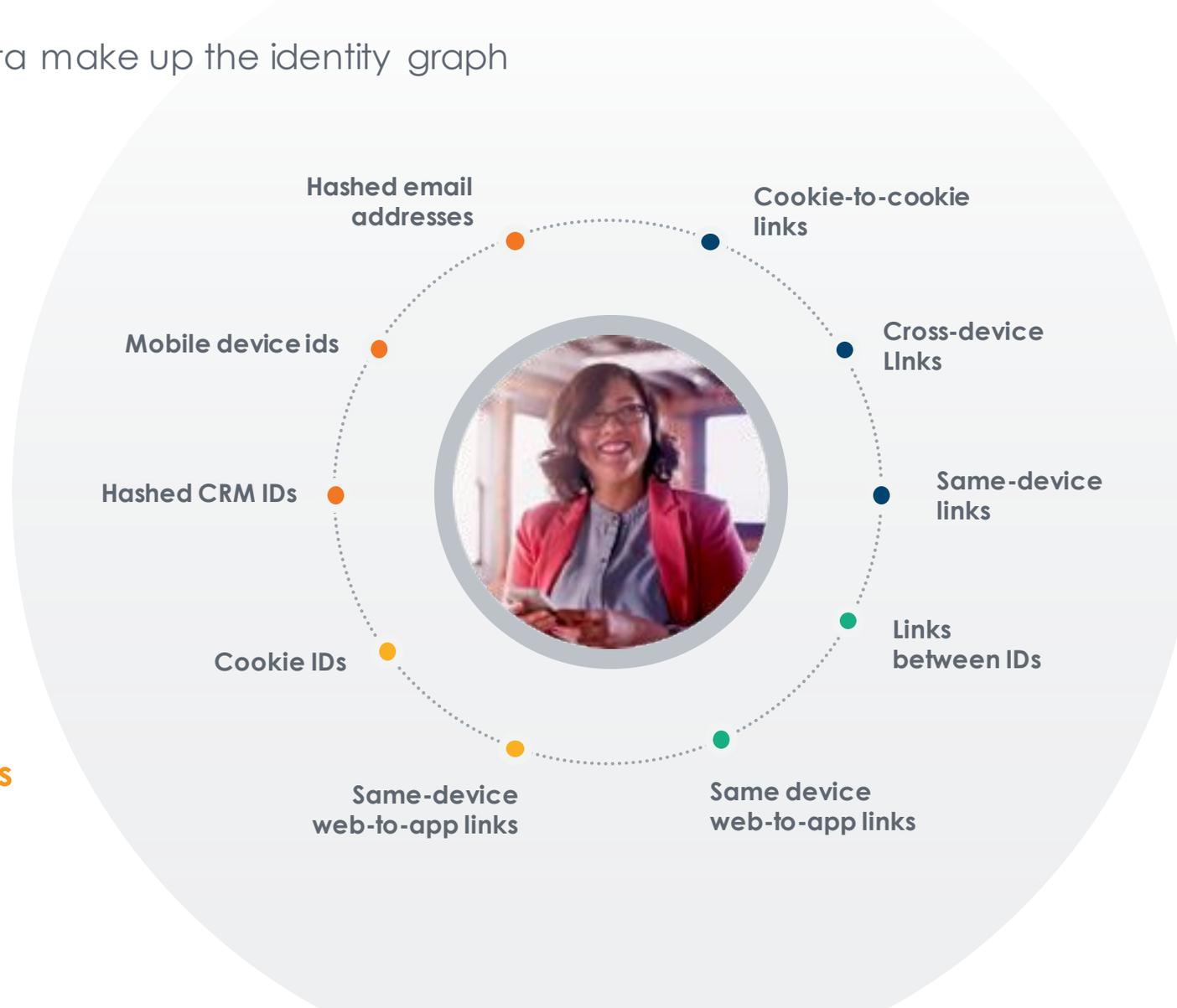
We build the identity graph from multiple data sources

Four sources of data make up the identity graph

1. Contributed by advertisers

~75% clients participating

2. Collected by Criteo from advertisers' and publishers' websites and apps



3. Provided by data partners

LiveRamp, Oracle, publishers

4. Predicted by Criteo through machine-learning

Criteo's machine learning enables unified user identification

Going from multiple identifiers to a **single, unified user identity**



*Universal User Identifiers ("UUIDs"):

3P cookie
1P cookie
Device ID: IDFA & AAID
Hashed email
Log-in
CRM ID

Criteo collects user identifiers, **with their consent**, along the customer's online journey

The Identity Graph **matches UUIDs***, creating clusters

- Algorithms link UUIDs together when the graph knows they **belong to the same user**
- Criteo's Identity Graph is largely **deterministic**, not probabilistic, and contains more than 2 billion clusters, i.e. **2B+ unique users**
- Links between identifiers are scored, based on recency, redundancy, etc.
- Algorithms determine which links are kept or cut off

96% of the Identity Graph clusters contain **persistent identifiers** on top of cookies

- Today, the third-party cookie is the most common identifier used by the ecosystem for online identification
- **Even when third-party cookies are not available** Criteo Identity Graph allows us to:
 - recognize a user (and thus answer a bid request) through other types of identifiers
 - continue to offer relevant advertising to the user

Strict principles guide our Identity resolution and Shopper Graph

The design and governance of the Shopper Graph is based on **strict and differentiated guiding principles**



Openness

All clients contributing data can in return benefit from the collective dataset, access Criteo IDs and relevant KPIs of their campaigns

Fairness

The value gained by participating clients largely exceeds their individual contribution to the graph

Transparency

Clients' contribution and sharing of data are based on a clear and permission-based usage by Criteo for the mutual benefits of all participants

Security

We apply the highest data security and user privacy standards to the Shopper Graph

s.Oliver sees 62% more shopper journey touch-points with Criteo's identity graph and Exactag

Mission

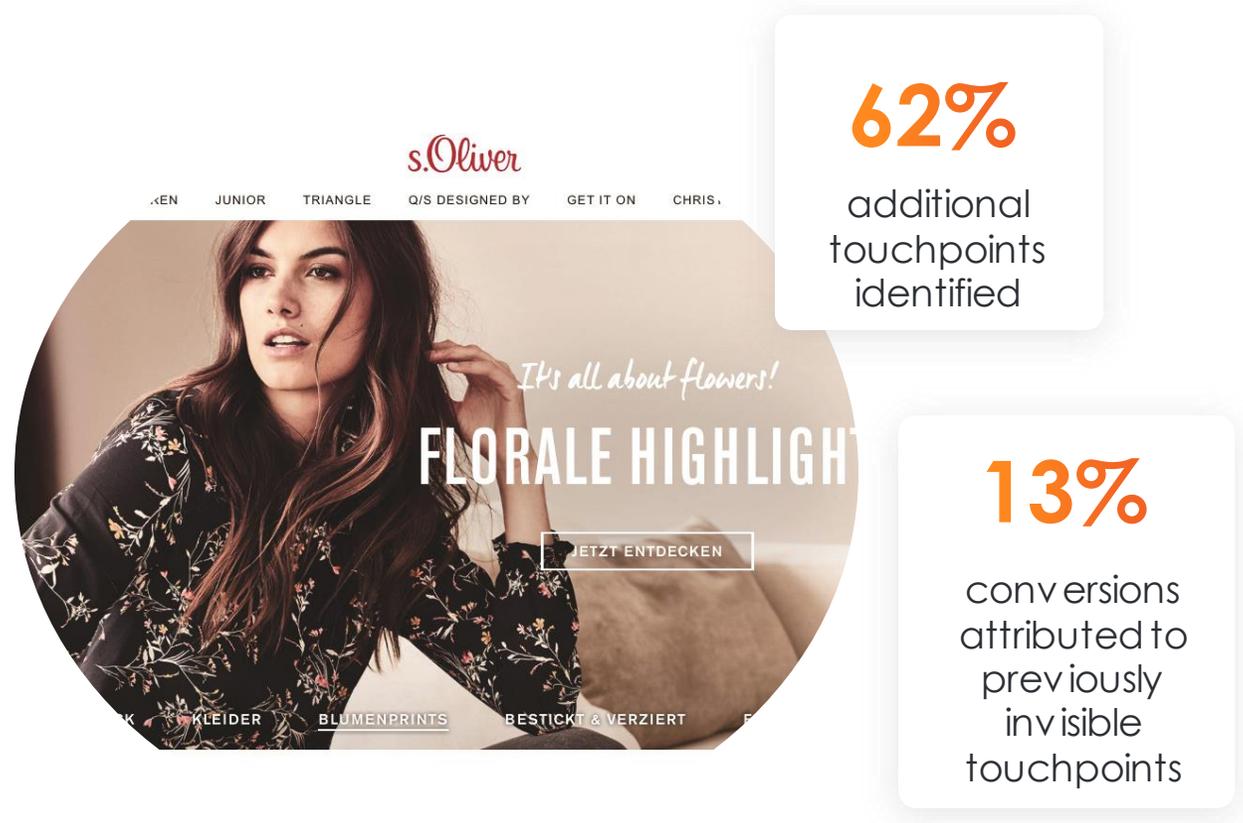
To better understand their customers' online shopping behavior across channels and devices

Approach

s.Oliver chose an attribution solution from Exactag enhanced with cross-device data provided by Criteo's identity graph service.

"Switching to data-driven, multi-touch attribution provided the opportunity to understand the holistic impact of our campaigns. By combining Criteo's identity graph service and Exactag, more user journeys can be linked together to provide us with a richer understanding of our customer's behavior".

Thomas Grieb
Team Leader, Online Marketing, s.Oliver



Travel Republic optimizes its marketing mix by improving attribution accuracy using the Criteo Shopper Graph

Mission

Travel Republic wanted to understand how much value each of its channels and individual marketing strategies was delivering.

Approach

They leveraged the Criteo Shopper Graph to add a cross-device perspective and maximize actionable insights from their new attribution model.

“Criteo’s identity graph service has enabled us to gain a more accurate view of our customer’s shopping journey. We’ve been able to better assess the impact of our mobile campaigns and access new insights to inform our campaign optimization strategy and overall marketing program.”

Wayne Williams
Senior Performance Marketing Manager, Travel Republic

TRAVELREPUBLIC



52%

Additional touchpoints identified

42%

Additional **mobile** touchpoints identified

Clarks Records +15% with Criteo and AgilOne Strategic Partnership

Mission

To engage more shoppers on ClarksUSA.com where they own the relationship with the customer and control how the brand is presented.

Approach

Clarks leveraged a new strategic partnership between their customer data platform, AgilOne, and Criteo to connect online and offline shoppers.

“Modern marketing requires identification. It is vital for our campaigns across multiple channels that we know who our customers are so we can tailor our messaging to them. By blending the data in our AgilOne Customer Data Platform with the Criteo Shopper Graph we can identify in-store consumers on the web and target them with relevant products. We couldn't begin to do that without Criteo and AgilOne.”

Kylie McCarthy,
Sr. Director, Digital Marketing and CRM, Clarks

Clarks



+15%
ROAS