



# Identity Resolution & Criteo Shopper Graph



**Investor Presentation**

December 2019

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# Identity resolution at Criteo



# User-centric advertising in a fragmented customer journey

Identity resolution is key for advertisers to successfully target relevant audiences at the individual level



**Hundreds of touchpoints** before a conversion...

- Across **multiple devices**
  - 50% of customers use **4 devices** or more
- Over **dozens of websites and apps**
  - Customers **visit an average of 38 websites** before a travel purchase
- Both **online and offline**
  - **Researching online before buying offline** is systematic for 21% of users, occasional for 37%



# Identity resolution with Criteo Shopper Graph



- 3 data collectives: **Identity**, **Interest**, and **Measurement**
- **Links multiple identifiers and data points** to a **persistent identifier**
- Allows advertisers to recognize the customer **across all channels**
- Expands **the number of customers our clients are able to reach**

## Benefits



**Shopper  
experience**



**Performance  
tracking**



**Accuracy**



**Privacy**

# Building the identity graph

What data is collected and where it comes from



**Contributed by clients**

~75% clients participating



**Provided by data partners**

*LiveRamp, Oracle, publishers*

**Collected by Criteo from clients' and publishers' websites and apps**

**Predicted by Criteo**

# Building the identity graph

Identify web and app users across their online devices and offline



## Universal User Identifiers (“UUIDs”)

Criteo cookie  
IDFA  
AAID  
Hashed email  
CRM ID

→ A match of UUIDs is called a **Criteo ID**

- Algorithms link UUIDs together when the graph knows they belong to the same user, in which case a Criteo ID is created
- The links are scored, based on recency, redundancy, etc., and algorithms determine which links are kept or cut off

 *A single UUID is not considered a Criteo ID*

# Persistent identity at scale



# Our Shopper Graph is one of the most powerful in the industry



**Large**



**High-quality**



**Persistent**

# Large: a huge network



## Identity Resolution

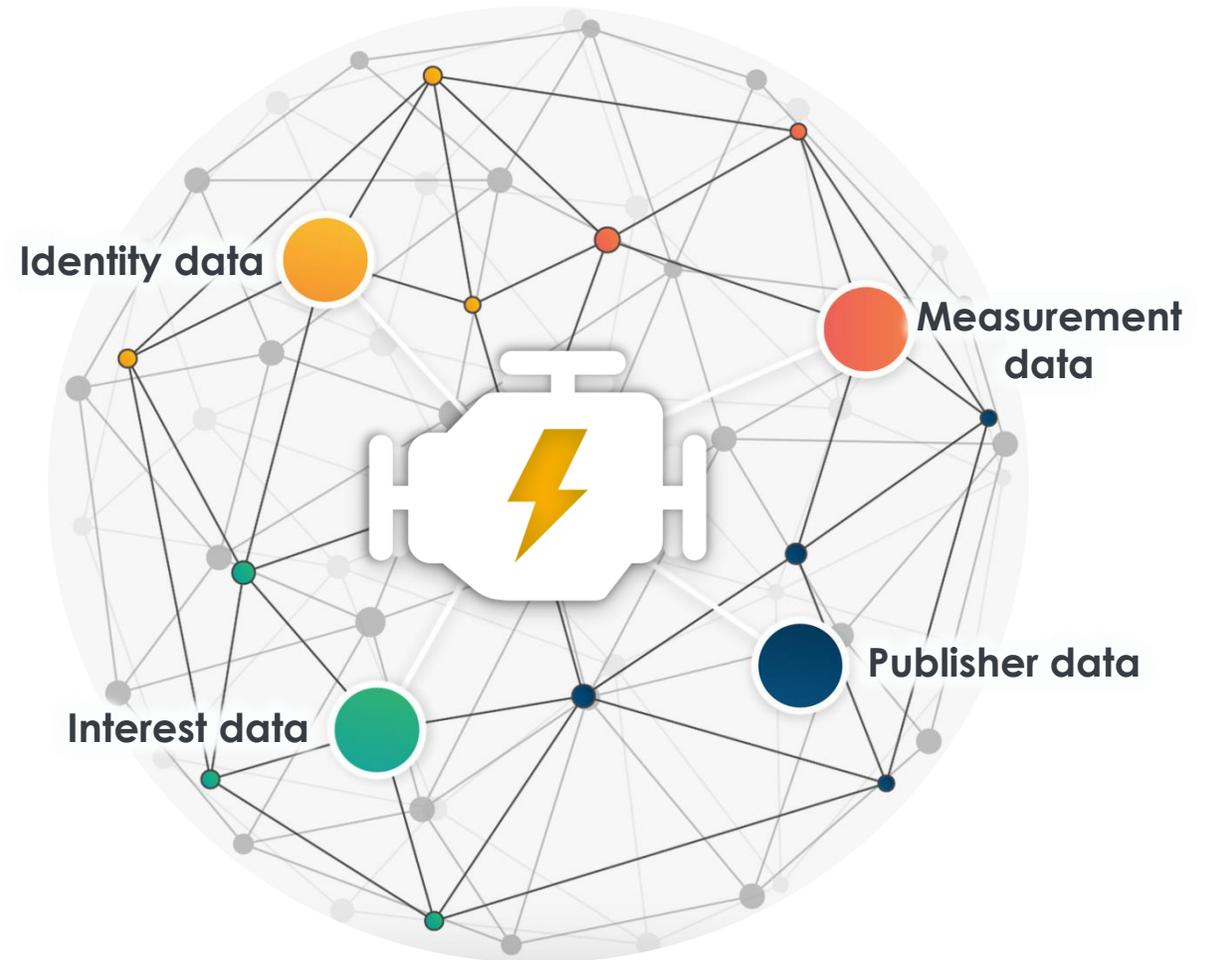
- 2B Criteo IDs
- All profiles active in the last 90 days
- Privacy-compliant data collection

## User Intent

- 4.5B+ products in our catalog
- 21B monthly product interactions

## Measurement

- \$800B+ ecommerce sales
- Anonymized data



# High-quality: continuous refinement of our algorithms



Over 30 A/B tests per year

Regular competition benchmark

Ground-truth check

# Persistent: low dependency on cookie



~95%

Criteo IDs include **long-term identifiers** such as hashed emails, CRM IDs or app identifiers



~5%

Criteo IDs rely on **cookies** only

# Privacy compliance & guiding principles



# Privacy: a key element of the identity graph



- Criteo's fundamental **Privacy by Design** approach protects and safeguards customer data across all standards, processes, and protocols
- Consumers can easily access our **Privacy Policy** and **opt-out** using **Ad Choices**
- **Data-hashing algorithms** ensure that no directly identifying information\* (name, email address) is stored in plain form

## ✓ WE DO

- Collect only the data that is required to deliver our service
- Automatically complete hashing process, independent of how we receive email lists
- Only store SHA256 hash of MD5 hash of emails\*
- Minimize data retention
- Keep only the last 90 days of data in the graph

## ✗ WE DON'T

- Record any sensitive information
- Record directly identifying information
- Store any original files containing emails
- Use or store client's audience data for any other purpose
- Use any 3rd-party owned or managed servers

\* 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.

# Identity resolution and Shopper Graph guiding principles



Central to our approach of the open Internet, and different from what clients may experience with walled-gardens, 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

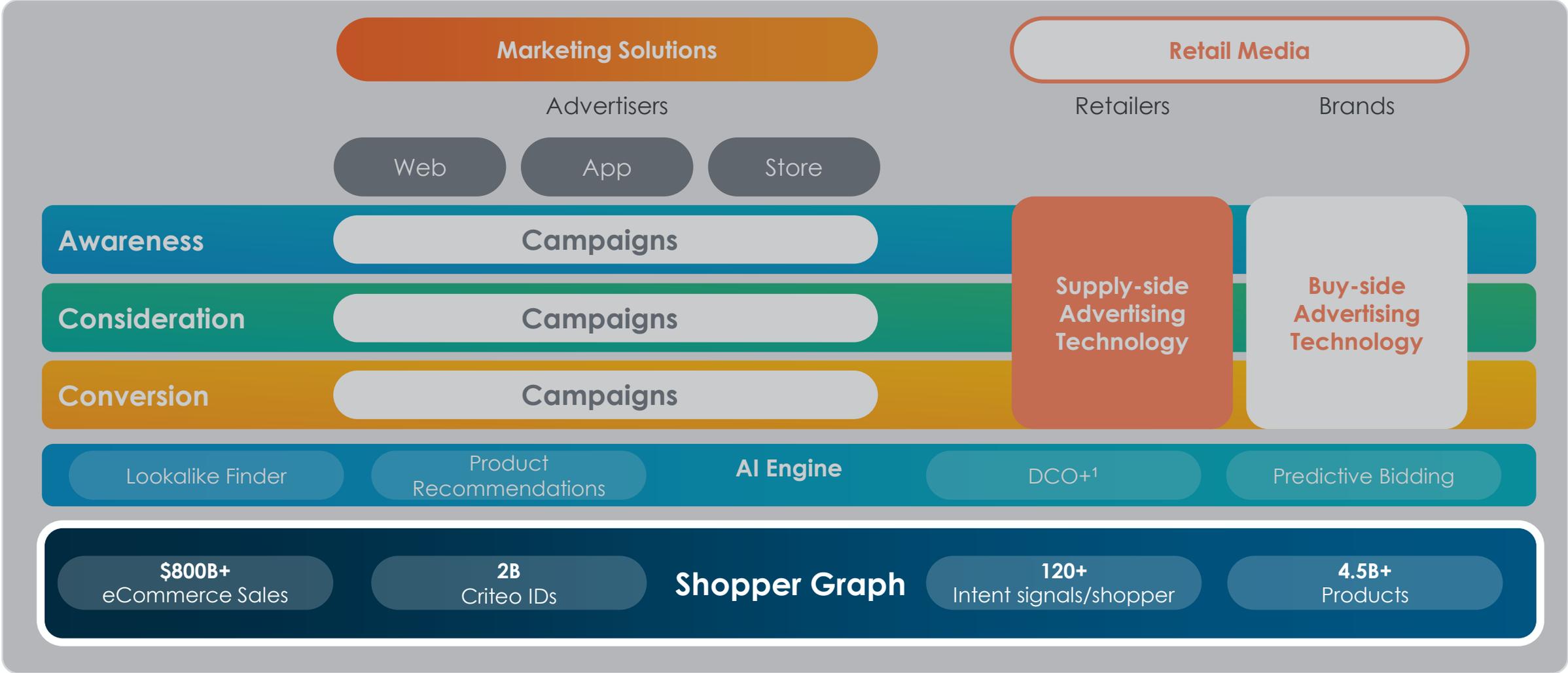
## Security

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

**A key asset  
supporting the Criteo platform**



# Criteo Shopper Graph powers the Criteo Platform



<sup>1</sup> Dynamic Creative Optimization+

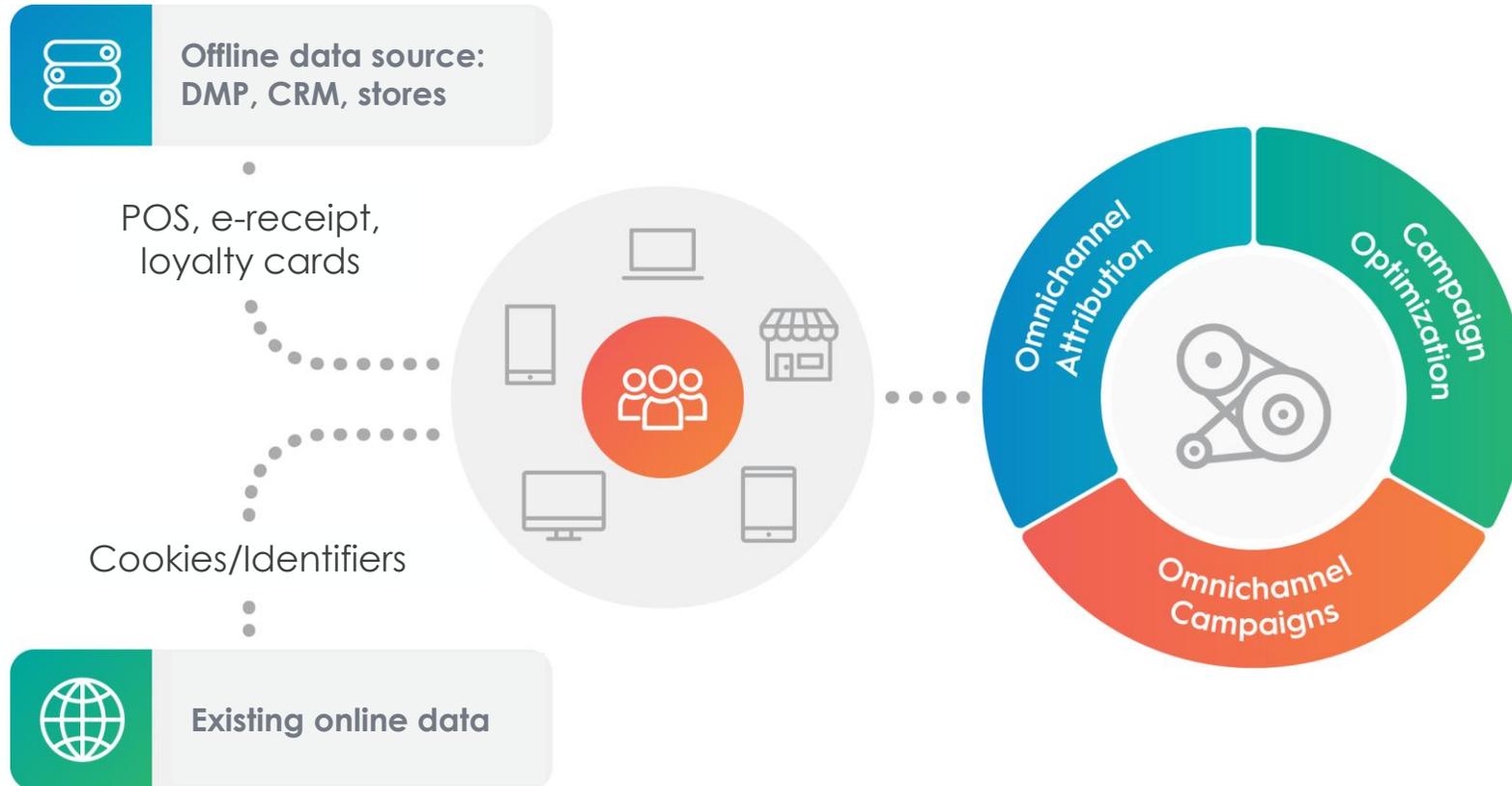
# Criteo audiences, fueled by the Shopper Graph



	Commerce Audiences	Similar Audiences	Custom Audiences
Audiences	140+ product interest categories within our Shopper Graph commerce data set	Profiles similar to advertisers' recent visitors using our <i>Lookalike Finder</i> AI technology	<ul style="list-style-type: none"><li>• Web visitors or app users</li><li>• Customer contact lists</li><li>• Offline buyers</li><li>• Platform audiences</li></ul>
Users	New Customers	New Customers	Visitors or Existing Customers
Marketing Goals	<ul style="list-style-type: none"><li>Awareness</li><li>Consideration</li></ul>	<ul style="list-style-type: none"><li>Awareness</li><li>Consideration</li><li>Conversion</li></ul>	<ul style="list-style-type: none"><li>Consideration</li><li>Conversion</li></ul>

# Custom Audiences – offline buyers

Connect online customer journeys with offline transactions



## Objectives

- Deliver a seamless customer experience
- Accurately measure the true impact of digital campaign investment
- Optimize the performance of existing digital campaigns
- Increase reach to addressable audience

# Shopper Graph: customer successes



*Thanks to Criteo's identity graph service, we are able to identify 4x more users on multiple devices.*

ouestfrancemultimédia

**+400%**

Website visitors identified



*Criteo's identity graph service enabled us to assess our mobile campaigns and inform campaign optimization.*

TRAVELREPUBLIC

**+42%**

Mobile touchpoints identified



*Switching to data-driven attribution gave us the opportunity to understand the holistic impact of our campaigns.*

s.Oliver®

**+13%**

Sales attributed to previously invisible touchpoints