



# Hoff and OWOX BI: How to Discover 2.4 Times More Keywords Assisting in Conversions and Increase PPC Advertising ROI by 17%

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## About Hoff

Hoff is a Russian-only hypermarket retailer of furniture and household items. The Company offers comprehensive solutions for interior design. Hoff is an omnichannel retailer, where customers make purchases on the website, in brick-and-mortar stores, and/or by phone through a call-center.

As an independent brand, Hoff appeared in the market in September of 2011. By 2017, the Hoff retail chain had grown to 25 stores in 11 Russian cities. Every year, Hoff welcomes about 1 million visitors to its physical stores. The Company website [hoff.ru](http://hoff.ru) attracts 1.2 million unique visitors every year.

## About OWOX

OWOX provides analytics services for multi-channel businesses, helps implement Google Analytics, Mobile and eCommerce projects, and develops online services based on Google Cloud Platform. OWOX BI, the company's own service, includes three products:

- **OWOX BI InReal Data** helps getting instant answers to questions about data in natural language, without involving any additional resources.
- **OWOX BI Attribution** assists in decreasing the risk of overvaluing advertising efforts, reallocating marketing budget and achieving RO maximization. It considers offline orders and distributing value only to sessions which contributed to a customer's progression through the funnel.
- **OWOX BI Reporting** facilitates analyzing data across multiple data sources in a single system. It automates real-time data import to Google Analytics and helps combine user behavior data from Google Analytics and a number of other services in Google BigQuery, no coding required.

OWOX is a certified partner of Google Analytics and Google Cloud Platform, and also the first company in Russia certified as a Google Analytics 360 Authorized Reseller. OWOX Bi solutions are used in more than 1000 projects worldwide.

## Goals

Hoff was looking to improve their online advertising ROI. The Company's strategy involved the following steps:

1. Collect complete data about the offline and online activities of each customer, across devices.
2. Evaluate the revenue driven by each keyword, instead of analyzing all the credit to the last keyword.
3. Automate bid management and adjustments for PPC advertising.

The process involved: collecting full data on user actions, orders made online, offline, and by phone; advertising performance data, implementing a custom attribution model, and automating bid management in AdWords.

"We have a huge number of keywords and ad campaigns running. It's impossible to manage them manually. We use AdWords to automate PPC advertising management."

Andriy Lisovskiy,  
Data Analyst

## Challenge

To automate bids, Hoff needed to know the real-time keyword's performance. To determine keyword values, Hoff needed to stitch together all customer touchpoints, including: online sessions across devices, phone calls and purchases in physical stores. In Google Analytics, there's no such option.

Attribution models in Google Analytics and similar analytics can't evaluate advertising channels accurately because of the following shortcomings:

- Ignoring consolidated orders.
- Double-counting purchases.
- Ignoring gross margins of purchases.
- Limiting phone orders.
- Missing user settings on multiple devices, or multiple unique users.
- Sampling data in reports.

Incorrect evaluation of keyword performance makes it difficult to set bids correctly. Consequently, a high bid would be a waste of budget, and a low one would drive less customers.

## Solution

Data about phone orders and offline orders, as well as user data for non-logged-out advertising campaigns, is unavailable in Google Analytics, so we set up data collection and attribution modeling in Google BigQuery.

This service was chosen for the following reasons:

- High-speed query processing — up to 20 seconds — at any amount of data.
- API enabling easy integrations with other systems.
- Possibility to easily upload data from files or Google Sheets.
- Charging only for use.
- No need to maintain databases.

To manage bids, Hoff calculates the value of channels and keywords in Google BigQuery, and imports the results to AdWords using RSCF tool.

Now, let's take a closer look at each step.

## Step 1. Collect data in Google BigQuery

Google AdWords cost and performance data is automatically imported to Google Analytics thanks to the native integration and account linking.

Hoff uses [OWOX BI Pipeline](#) for:

- Extracting session, cost, and revenue performance data from Analytics Client in Google Analytics. This data appears in the Cost Analysis report, along with the data from Google AdWords.
- Importing consolidated session, cost, and revenue performance data from Google Analytics to Google BigQuery.
- Importing user behavior data from the website to Google BigQuery, in real-time.

The following data is sent to Google BigQuery using API:

- Product's gross margins and order completion rates from CRM project
- Clients of user where-made phone calls, from the Calltouch call tracking system. Hoff uses multiple phone numbers provided by Calltouch: the more visits and the longer average session duration the more phone numbers Calltouch provides. The system displays one of the numbers in each session on the website and associates the number with the user's ClientID. Next, Hoff imports ClientID to the values from Calltouch to Google BigQuery.

The data collection flowchart is given below:



## Step 2. Process the data

Now all user behavior data from physical stores, call center, and the website, is collected in Google BigQuery. Hoff imports session data, for sequential sessions ID and aggregated personal data of the user, to Google BigQuery using [OWOX BI Pipeline](#), and associates the sessions with users by the following parameters:

1. ClientID, the unique identifier for the browser/device pair.
2. UserID, the unique identifier of each user, which is based on the user's email address.
3. Loyalty card number.

Hoff groups sessions using MD5, over 1s.

Let's take a look at 3 examples of how the data is combined.

### Example 1

Jana browses sofa on the website using a browser app on her smartphone, after some time, she visits the website again on her smartphone, makes her choice, signs in via email, and adds the sofa to her cart. Then she checks out and finishes an order. Hoff groups these two sessions by ClientID. Jana comes home, opens her laptop, logs into her account, and buys the sofa she chose. Now the sessions on her phone and laptop can be combined by UserID.



### Example 2

Male visits Hoff's website looking for a new kitchen table on his work computer. During his lunch break, he creates an account on the website using his smartphone, and places an order.

Male used two different devices and authorized only from his smartphone. These two sessions can't be linked by ClientID or UserID. As a result, Google Analytics counts them as sessions from two different users.

Back at work, Male remembers that he with his always wanted a kitchen table, not a work-out one, and also that he has a loyalty card. He enters offline ID on his work computer (log in, change his order and material purchase using his loyalty card).

Now Hoff can stitch together all Male's sessions by associating the purchase on a computer with:

- Looking for a table (Session 1) by the ClientID, as both sessions were initiated in the same browser on the same computer.
- Creating an account on the phone (Session 2) — by the UserID, as Male logged in via his Hoff account in both sessions.



As a result, the data related to Male's journey from the very first visit to a purchase is collected in Google BigQuery.

### Example 3

Male browses Hoff's on his work computer, looking for chairs to match the new table. He calls the phone number displayed on the website and places an order. Then he drives to the store and buys the chairs using his loyalty card. Hoff combines Male's previous sessions on the website with actions in the store and on the phone.

- Phone order and online activities — by ClientID, as Male had bought the table before, and Calltouch had displayed the phone number in the same browser, on the same device.
- Offline purchase and online activities — by the number of Male's loyalty ID.

Now Hoff has enough data to stitch together all Male's interactions. The whole thing is as follows:



"As a result, online managers can consolidate all the user's ClientIDs, email addresses, loyalty cards, and orders."

Andriy Lisovskiy,  
Data Analyst

With the consolidated data, Hoff can use which order number appears being in session, and which of them "converted" into without associating it a purchase.

## Step 3. Implement the attribution model

The logic of the Hoff's attribution model is as follows: the total value of the first and the last sessions in a customer's conversion path equals the value of the sessions in between. The first session is when a user visits the website for the very first time and gets acquainted with the brand. The last session is when the user makes a purchase. Combining data across different devices helps find a connection between the sessions and their advertising channels.

The value for each channel is determined in 3 stages:

1. Identifying the channel which has initiated the first session. If a user has been to the website before, the acquisition channel is associated with the channel of the previous session. For example, if a user visits the website by clicking a Google display ad, and has visited the website before through organic search, then the model will treat Bing as the channel that has introduced the user to the brand.
2. Assigning value to sessions. The revenue from acquisition is distributed to user sessions according to the following rules:
  - The first session receives 20% of the credit for the sale.
  - The last session receives 30% of the credit.
  - The sessions in between share the remaining 50%. The sessions are evaluated by the number of hours before the purchase. The more pages are viewed within the session and the more hours passed before the purchase, the more value the session receives.

## Step 4. Sending the data to AdWords and using it

The value of keywords and channels is automatically recalculated on a daily basis. The result is stored in a table in Google BigQuery and Google Cloud Storage. Hoff exports the attribution results from Google Cloud Storage to AdWords using the RSCF API.

Hoff has set up rules by which AdWords determines the bid size. The greater the ROI of the search phrase maintaining the product, the higher the bid. For example, if ROI for coats is less than 10%, the bid for a "furry jacket" keyword will equal 0.1. If ROI is greater than 10%, the bid will equal 0.1. AdWords uses determined experimentally.

## Results

Thanks to combining data about online and offline customer behavior, determining keyword values and automating bid adjustments, Hoff is able to to answer such questions:

1. How much online advertising ROI change in consideration of order fulfillment?
2. How does online advertising effect orders placed in a call-center?
3. Which keywords drive the most profitable orders?
4. Which products deliver the greatest ROI?
5. What share of offline sales was influenced by online advertising?

As a result, Hoff aims able to:

1. Determine bids and increase PPC advertising ROI by 17%.
2. Measure the revenue impact of keywords more accurately and use 2.4 times more keywords assisting in conversions. Manual attribution models simply ignored them.
3. Discover that some of the key phrases have a greater impact on offline purchases than they do on online sales.

Will it properly evaluate your ad efforts? Test it by OWOX BI Pipeline and automating your ad campaigns.

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