BinnacleData

Reference Manual

Introduction

Binnacle Data is a comprehensive business analytics solution for agencies and companies that integrates, and cross-references, in one place, the main sources of information of a digital business (user behavior, sales, marketing, inventory, catalog and logistics).) and makes them accessible and usable for all teams safely.

Binnacle Data is your engineer and dedicated data scientist. It is responsible for automatically capturing, cleaning and integrating all the data of a business, and trains and executes data-driven classification and segmentation models based on the analysis of their behavior, which enrich the profile of each customer with new information that facilitates date-driven decisions.

The goal of Binnacle Data is to provide relevant insights into what is happening with the business and its multiple facets, as well as to respond, quickly and accurately, to all types of questions and analysis about it, in a way that serves to drive operations, business and marketing strategies and data-based decision making.

Each Entity (a digital property of a client) in Binnacle Data has its own fully managed data warehouse in the cloud. We call this data warehouse the DataHub, and it stores and integrates data from all sources of each entity.

The different Binnacle Data tools access the DataHub to obtain the data they need, both the dashboards and the segmentation or attribution tools.
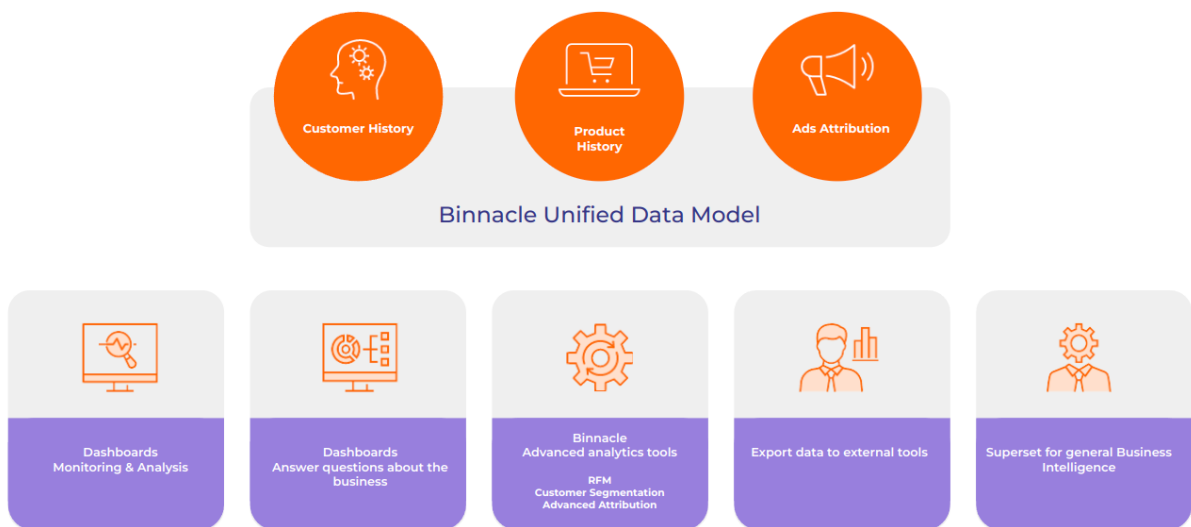

Figure 1. Binnacle Data stores the data of each Entity in a DataHub (a self-managed data warehouse for each client). The different tools access the DataHub to exploit the data

This document provides a functional Binnacle Data reference manual, describing the main functionalities and capabilities of Binnacle Data, including the creation of custom dashboards.

BinnacleData
Powered by Redegal

Checking Daily

This is the initial screen of Binnacle Data. As its name suggests, it offers a very agile daily monitoring solution of what is happening in a digital business (in terms of Binnacle Data, an Entity) during the last days and weeks.

The objective of this screen is to facilitate the quick review of the main KPIs of a digital business, with the possibility of also very quickly changing the client or digital property, thanks to the entity selector (Figure 2), to review a large number of clients in a very quick an agile way.
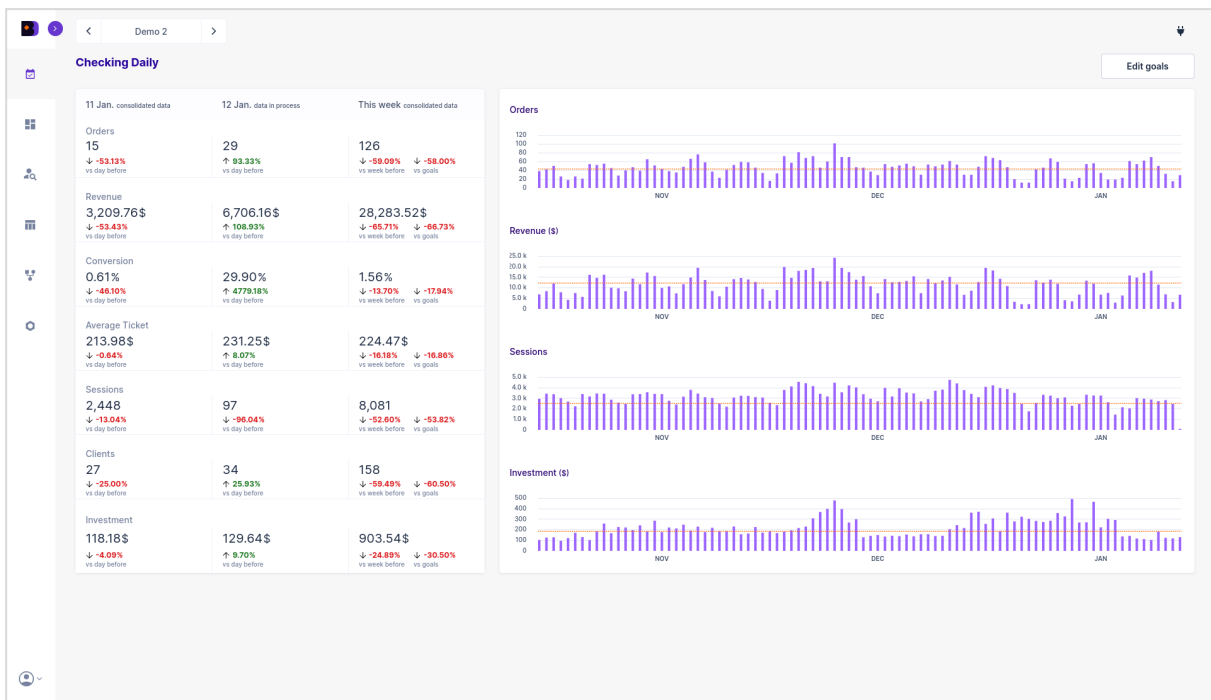

Figure 1. Checking Daily screen. It is the initial screen and entry point to Binnacle Data. It provides a very quick summary of what is happening with our business in the last few days and weeks with respect to the main KPIs. Combine multiple data sources in a single visualization.
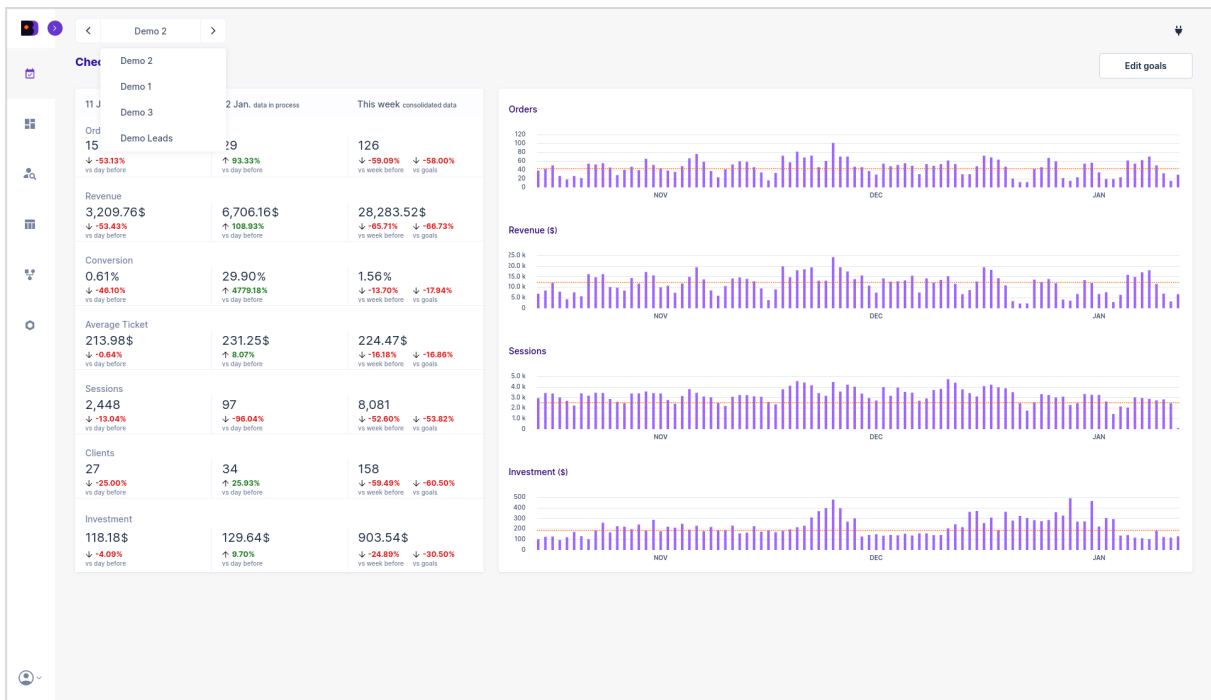
Figure 2. The entity selector, present throughout the entire platform, allows the user to change business or client very quickly, so that, for example, in Checking Daily, it is possible to quickly change from one client to another to review your state.

It is important to highlight that this screen, which serves as an entry point to the platform, allows us to directly exploit one of the main value contributions of Binnacle Data: accessing information from multiple sources of business information in a single space, that area already validated and crossed between them.

The different KPIs and evolutions presented on this screen come from multiple data sources (Google Analytics, e-commerce backend and digital advertising platforms). And they are crossed with each other to obtain the most reliable possible view of each KPI.

For example, the conversion % is calculated by mixing traffic data from Google Analytics with real sales data from the backend, where canceled orders and returns have also already been discounted.
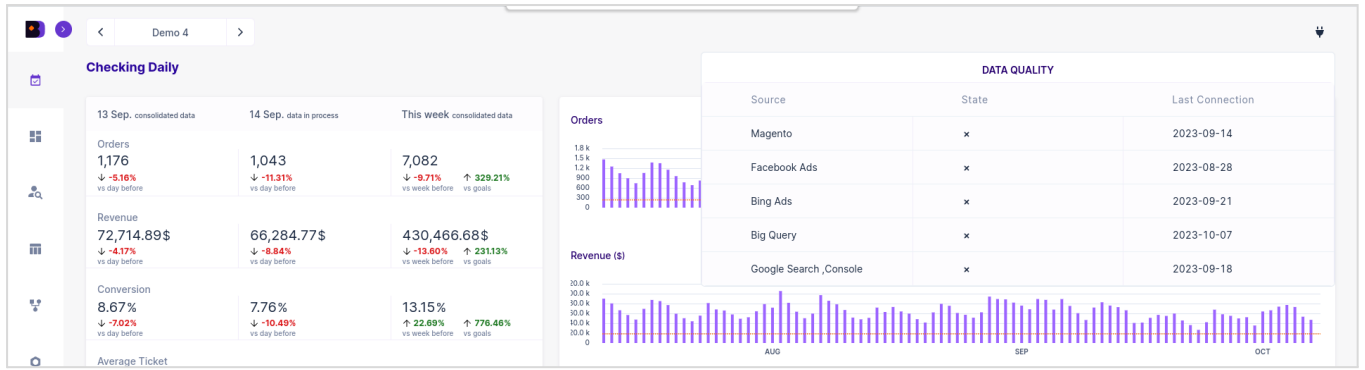
Figure 3. Data quality. From Checking Daily we can also access a summary of the connection status of the different data sources.

From the Checking Daily screen, as shown in Figure 3, it is also possible to check the connection status of Binnacle Data with the different sources of information of each Entity.

And finally it also allows us to establish weekly objectives for different monitored KPIs (Figure 4), thus offering us the possibility of checking, very quickly, how the business is performing in terms of weekly objectives.
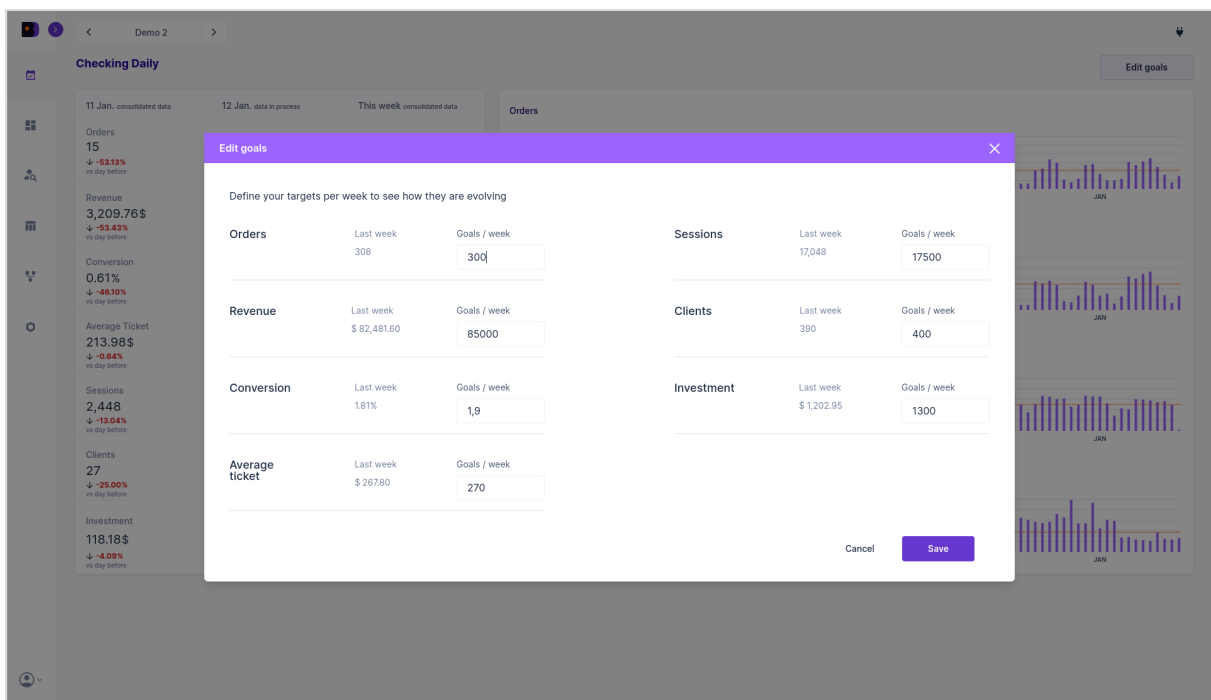

Figure 4. Weekly objectives. Also from the Checking Daily screen the user can customize weekly objectives for the main KPIs. These will be the ones used for the comparisons shown in the weekly data column of Checking Daily, as well as in the evolutionary ones.

Dashboards

Binnacle Data incorporates, by default, a series of analysis dashboards that implement analysis tools for specific use cases.

The dashboards in Binnacle Data are not simply reports to present information, but they have multiple filters that allow you to drill-down on the information, analyze specific cases, obtain insights and go straight into details.

The default dashboards are organized into five areas or functional blocks (Figure 5).

It always starts with a first 'overview' dashboard, which provides a general and broad vision of a specific area of the business, such as Acquisition, Products, SEO or Customers.

And from there, a series of more specific dashboards implement particular use cases for each area.
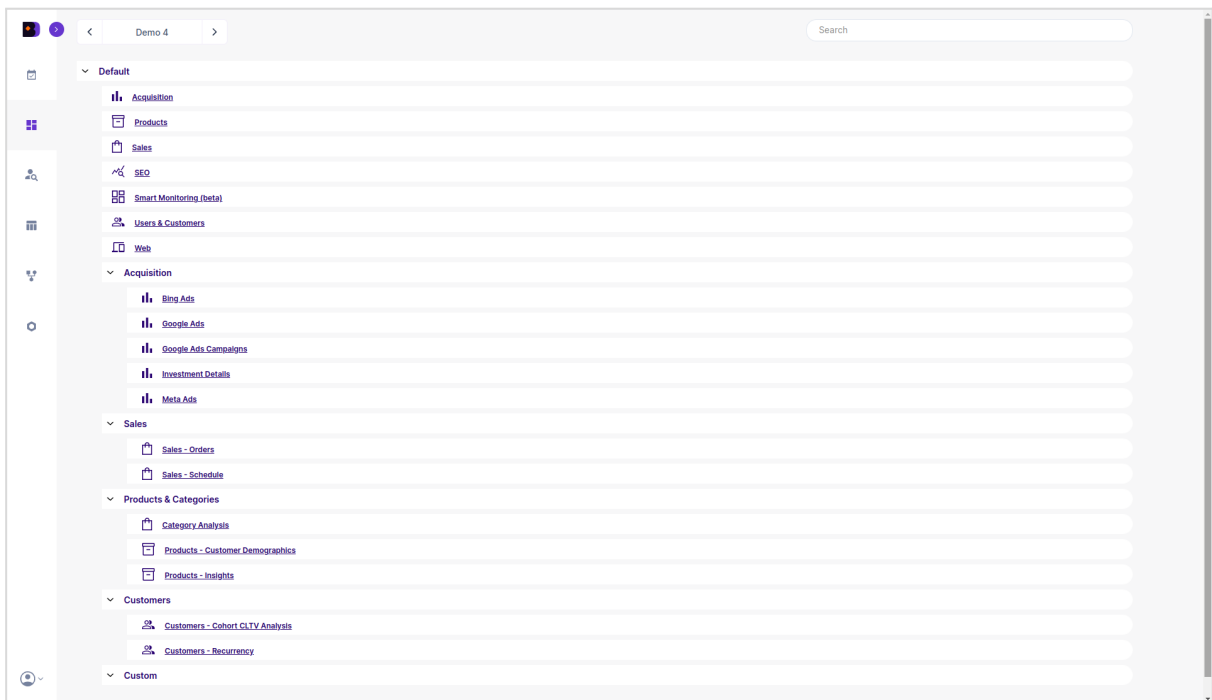

Figure 5. The Dashboards screen allows you to navigate between the different dashboards available for each entity. Binnacle Data, in its version for e-commerce, comes standard with a wide set of predefined, ready-to-use dashboards that cover a wide range of digital business analysis functionalities and e-commerce in particular.

BinnacleData
Powered by Redegal

Acquisition

A package of tools focused on analyzing traffic acquisition and investment in digital advertising.

From a general dashboard, which provides a global and integrated vision of the traffic, customer and order acquisition area, uniting the information from all supported digital advertising platforms.

Up to a series of dashboards that provide detailed and specific views of the different sub-areas and acquisition platforms.
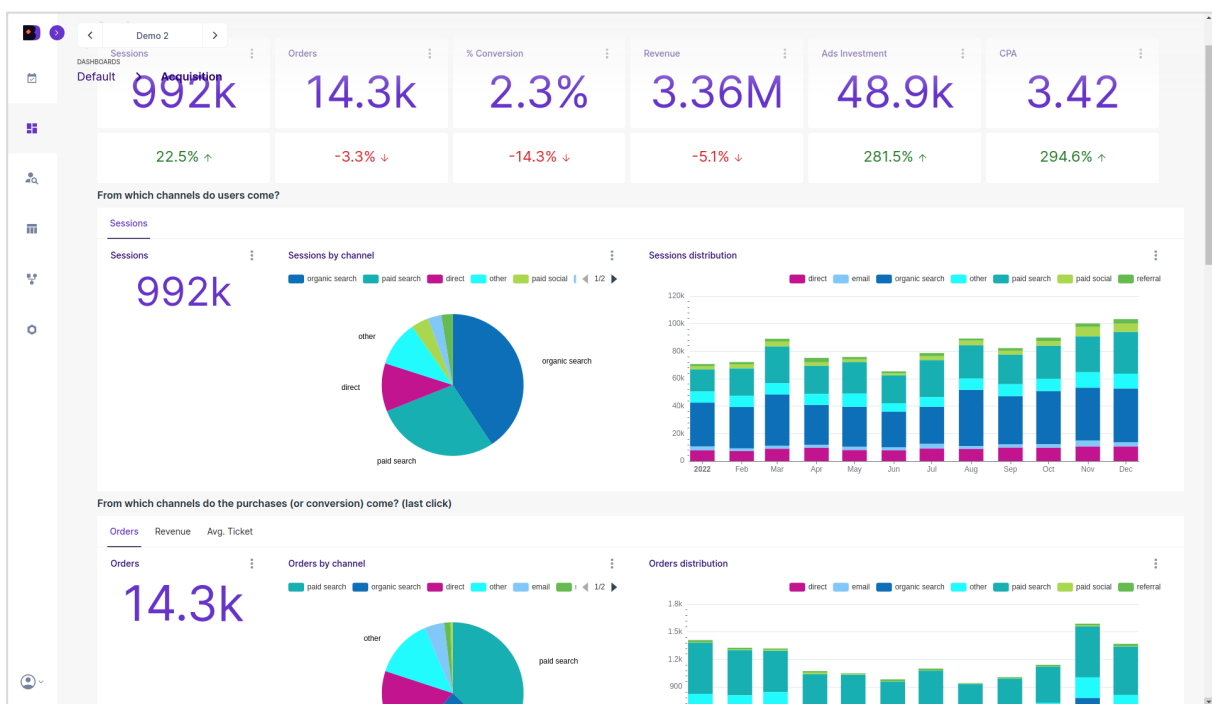

Figure 6. The main Acquisition dashboard allows us to evaluate and understand how the business is capturing traffic, through channels, and how these channels convert into purchases and billing. From this first information, it is possible to use the rest of the acquisition detail dashboards to obtain a deeper insight into the process.

BinnacleData
Powered by Redegal
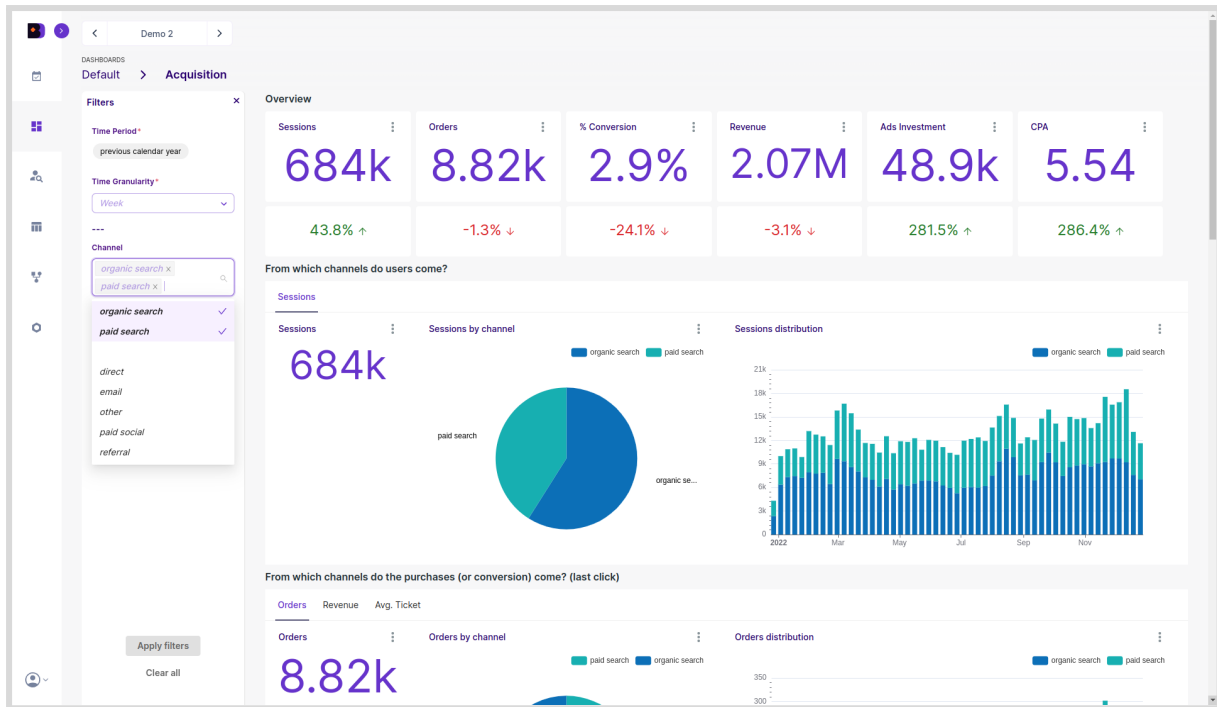
Figure 7. All Binnacle Data dashboards function as analysis tools and provide drill-down capabilities through a broad set of filters. In this example, traffic generated exclusively by search channels, both paid and organic, is being filtered.

Other acquisition analysis dashboards

Bing Ads

Provides a more detailed and specific view of ad spend and engagement on the Microsoft/Bing Ads platform.

Meta Ads

Provides a more detailed and specific view of advertising investment and acquisition on the Meta/Facebook Ads platform.

Google Ads y Google Ads Campaigns

They provide a more detailed and specific view of advertising spend and acquisition on the Google Ads platform, including a detailed view at the campaign level and campaign type.

Investment Details

It provides a quick solution for detailed monitoring of performance and investment in each campaign, on each platform, on a daily basis.

BinnacleData
Powered by Redegal

Products

A package of tools focused on analyzing sales at the product and/or category level, as well as the behavior and characteristics of customers who buy them and/or interact with them.

From a general dashboard, which provides a global and integrated view of sales and interactions at the product and/or category level. Even a series of dashboards that allow you to obtain direct insights into which products are performing better or worse, which have greater growth potential if their exposure is increased, etc.
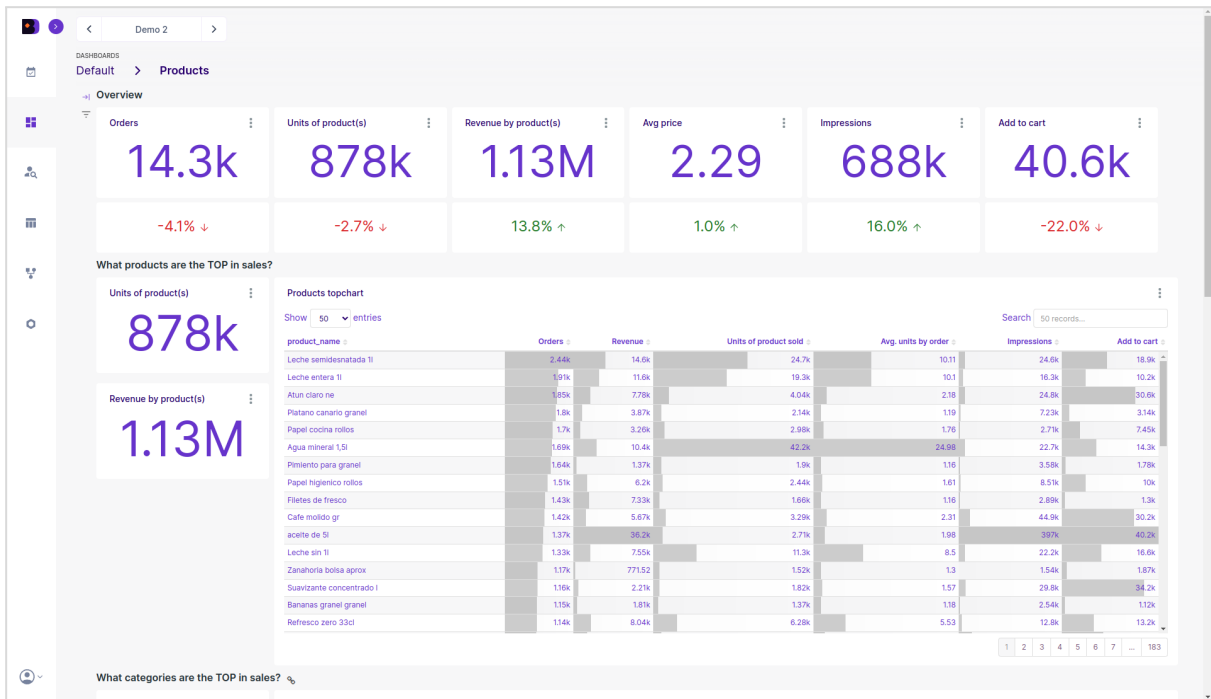
Figure 8. The main Products dashboard allows us to evaluate which products and categories are performing best. Here both the e-commerce backend and user behavior data regarding viewing product pages, adding to cart, etc. are integrated and crossed.

BinnacleData
Powered by Redegal
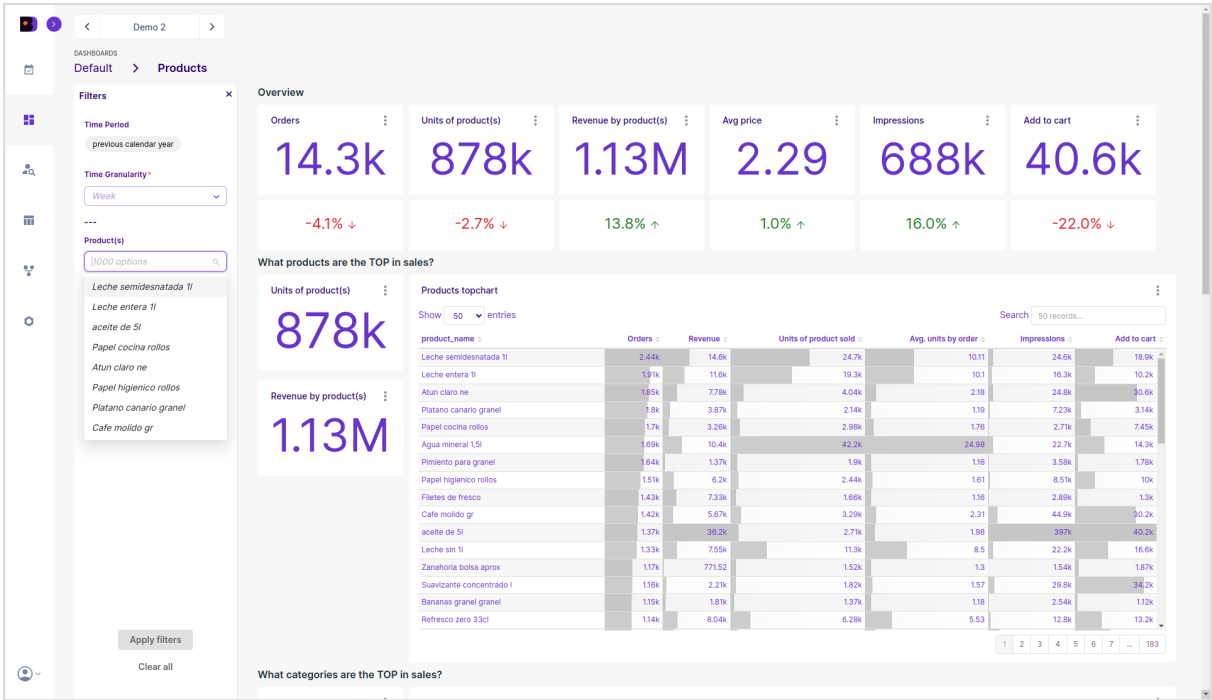
Figure 9. Binnacle also allows you to filter by multiple criteria and drill-down to analyze the performance of particular categories and/or sets of products.

Other product analysis dashboards

Category Analysis
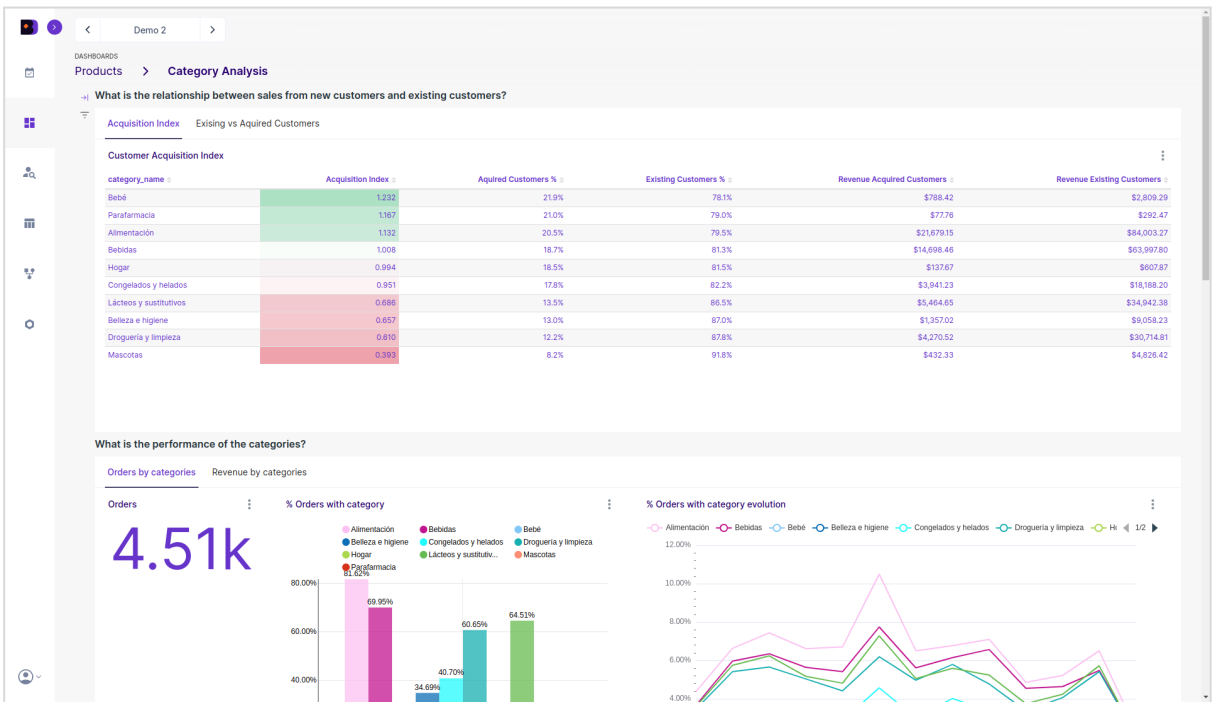
Figure 10. Binnacle automatically calculates a new customer acquisition rate by category. This index allows categories to be compared in terms of their ability to attract new customers over the last year, and to quickly detect which categories are attracting better or worse. In

addition, this dashboard allows you to analyze how products from different categories are associated, as well as the percentage of business generated by each category.

Customer Demographics
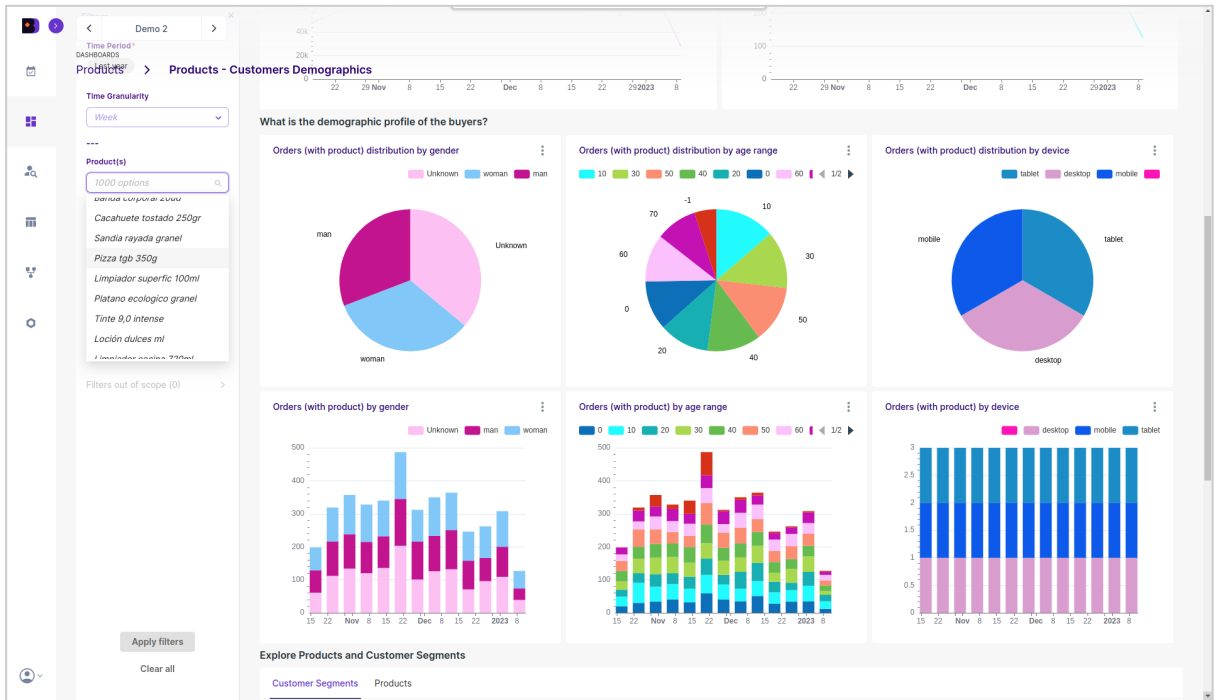
Figure 11. This dashboard offers a quick and direct view, with drill-down capacity, of what customers who buy different categories and/or sets of products are like sociodemographically.

Product Insights
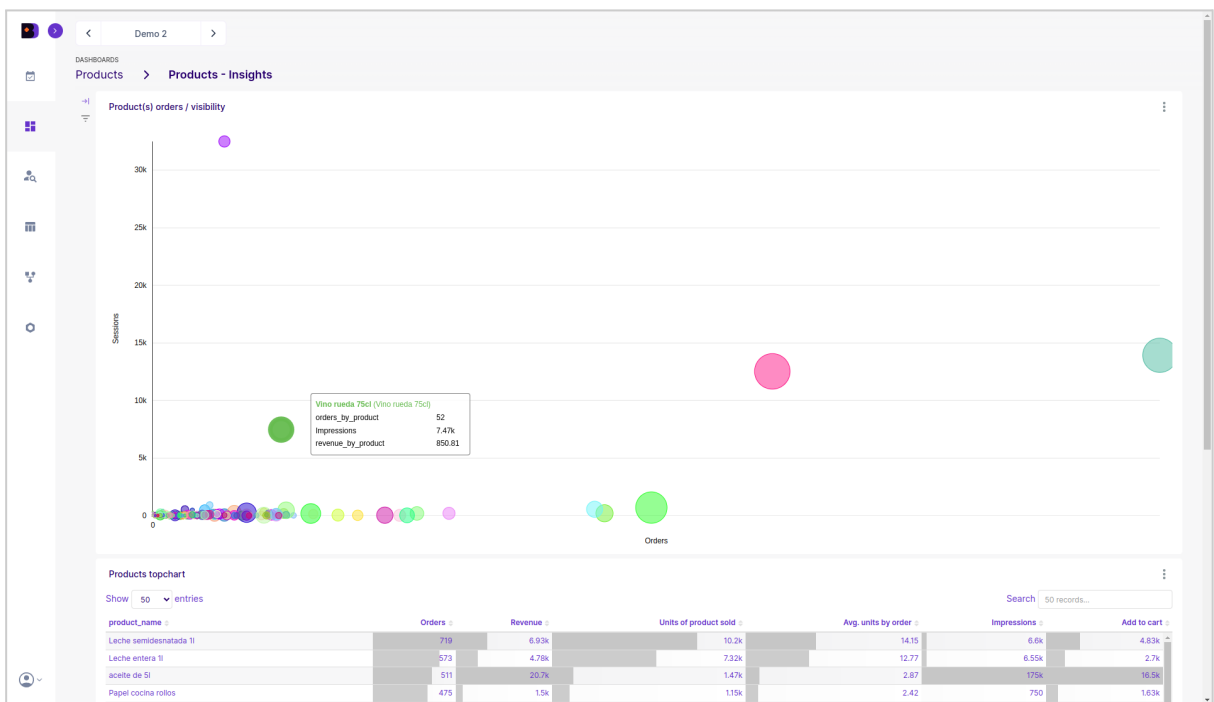
Figure 12. Allows you to detect products with disparate performances in terms of exposure and sales. The X axis represents sales, the Y axis represents exposure (product views). Those products that are below the diagonal could benefit from obtaining more exposure (through campaigns, etc.), while those that are above the diagonal are gaining a lot of exposure (a lot of traffic) but do not sell in the same proportion, so there is probably some problem with pricing, attracting poor quality users, etc.

Sales

A package of tools focused on analyzing sales, where information is integrated from both the e-commerce backend (which is taken as a source of sales truth) and user behavior on the front end, through Google Analytics.
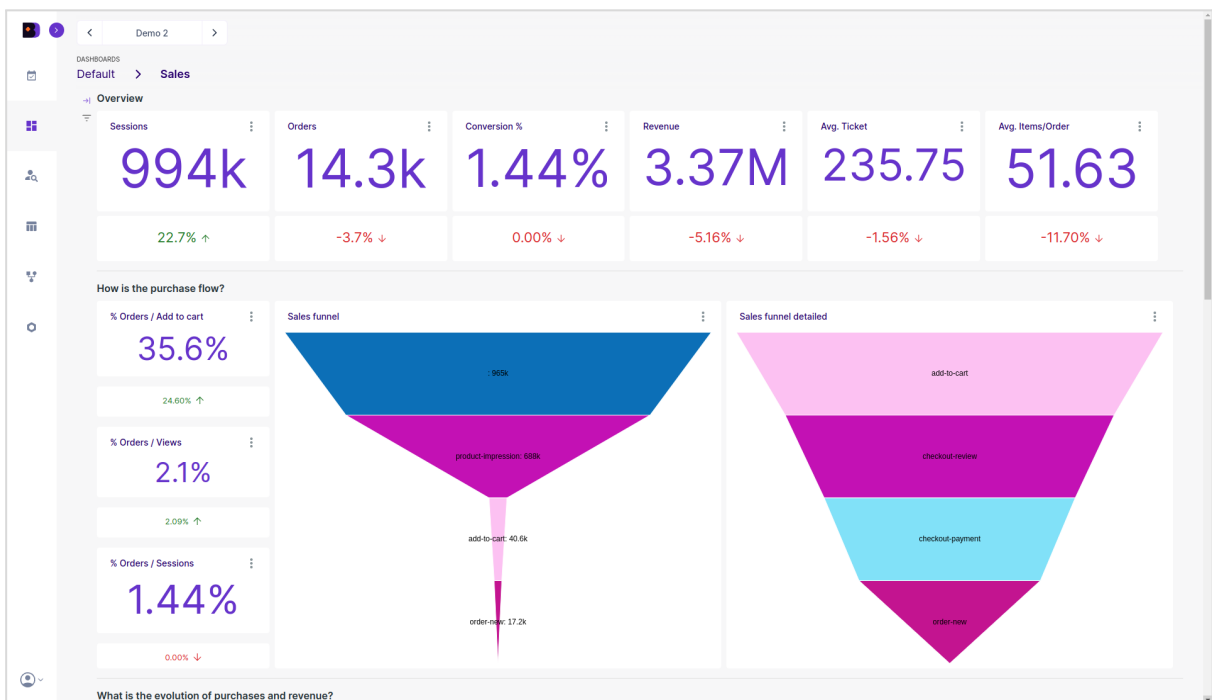
Figure 13. Binnacle allows you to monitor and analyze the sales funnel, automatically integrating information from the e-commerce backend (which provides the source of truth in terms of sales) and user behavior information in e-commerce through Google Analytics 4.
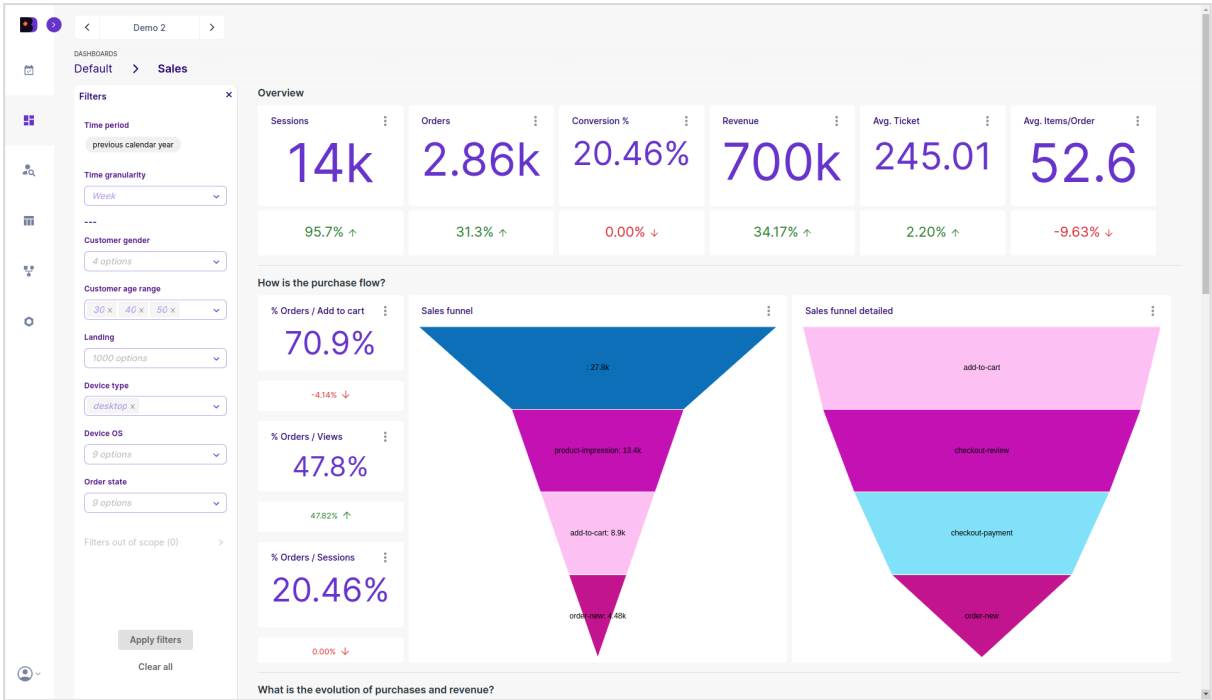
Figure 14. It is possible to enter a high level of detail in the sales analysis thanks to a wide set of filters that enable drill-down.

SEO

Binnacle Data can be integrated, at the SEO level, with Google Search Console and ProRankTracker. It allows you to store an unlimited history of SEO information (unlike GSC's 18 months), query that history, and cross-reference it in a custom way with other data sources.
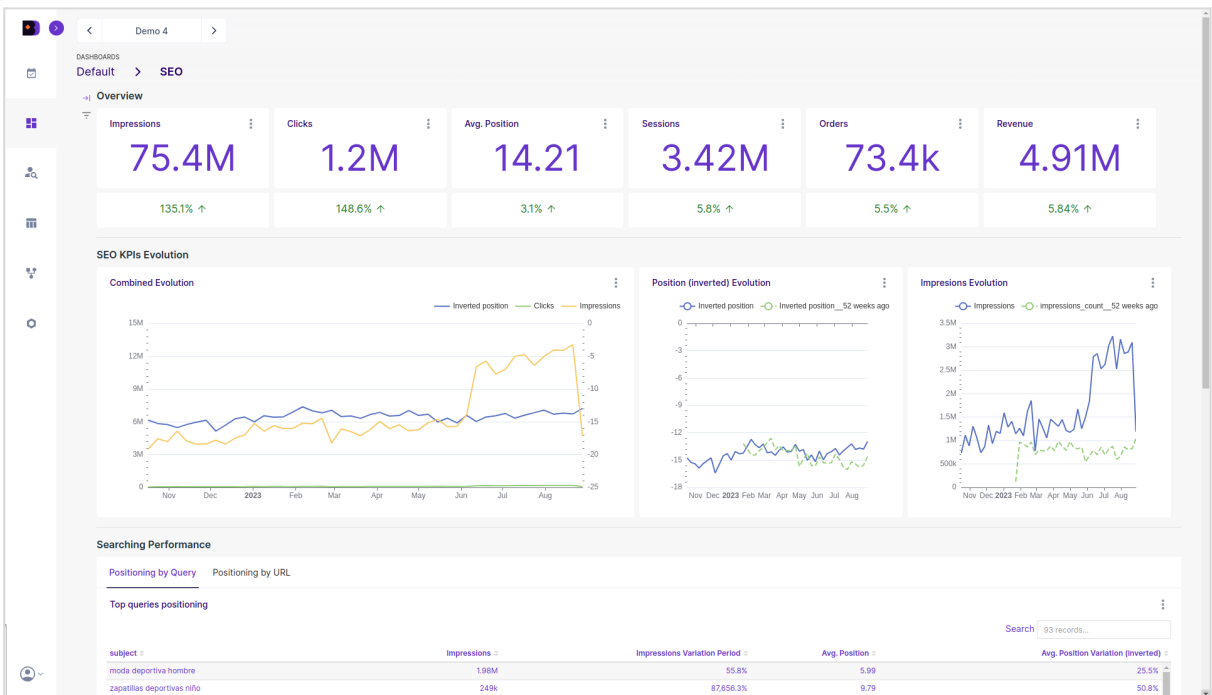
Figure 15. Binnacle Data integrates with Google Search Console and allows you to maintain a complete history of positioning and search metrics, thus avoiding the 18-month limit imposed by the Google Search Console API. It also allows you to cross-reference SEO data with other sources of information in a personalized way.

Customers

A package of tools focused on analyzing the behavior and profile of users and customers. Information from all available sources is integrated to draw the most complete profile possible.

Additionally, various dashboards are included with a focus on specific use cases, such as the automated calculation and analysis of Customer Lifetime Value (LTV) by adquisition cohorts, and its annual evolution (Figure 17).
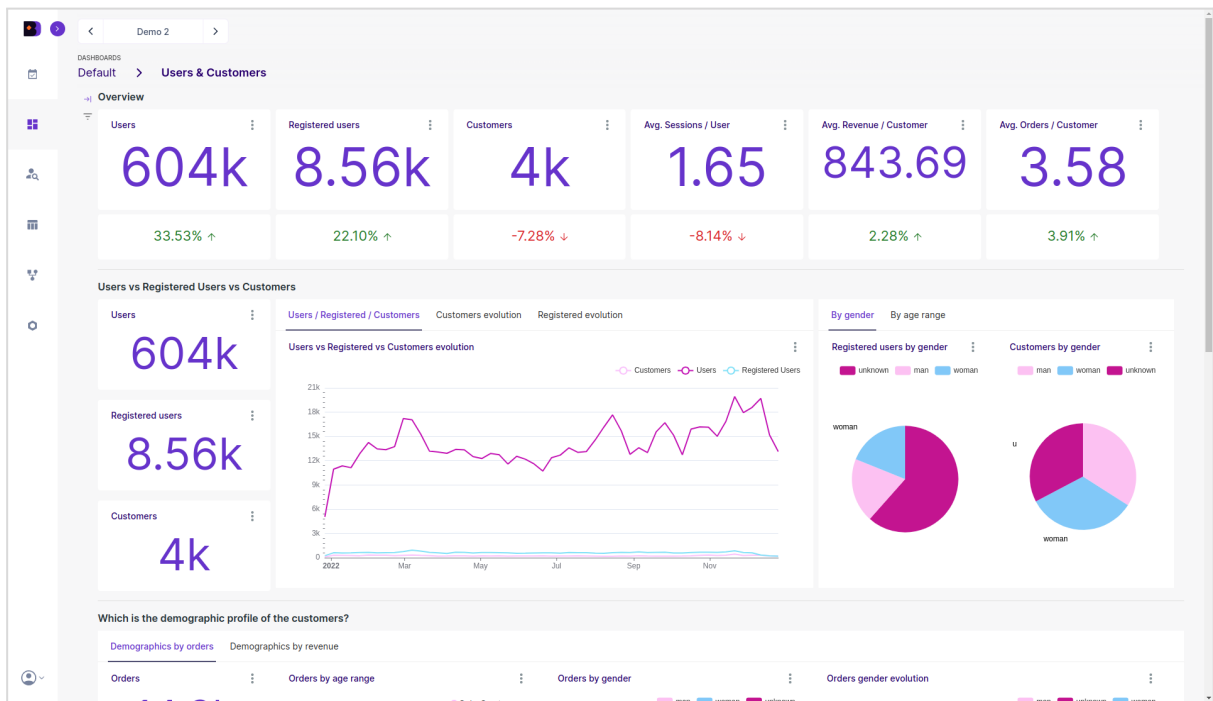
Figure 16. Binnacle Data incorporates, as standard, several dashboards particularly focused on the analysis of customer behavior and characteristics, as well as the comparison between users, registered users and customers.
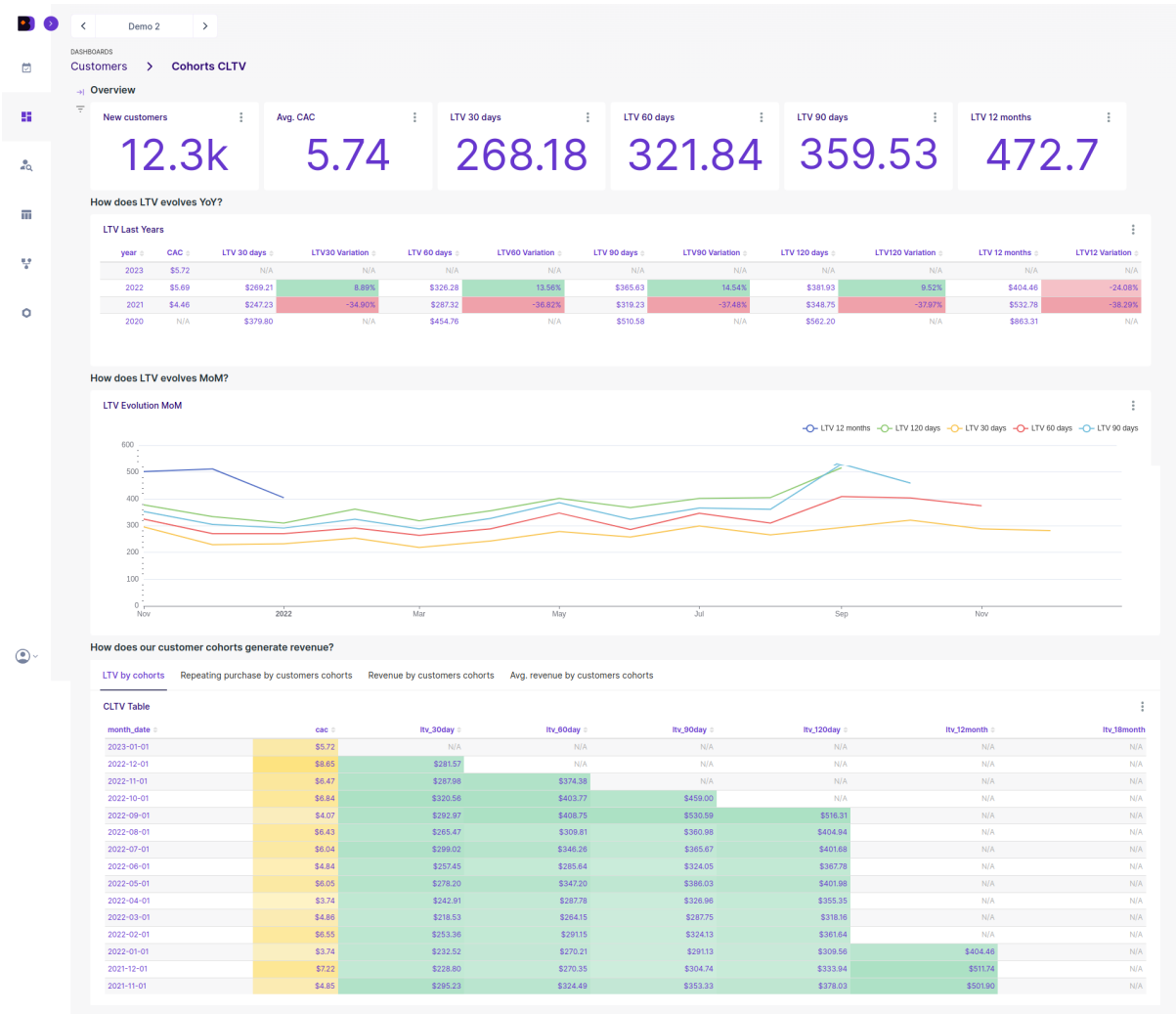
Figure 17. Automatic calculation of LTV at different periods, including historical evolution analysis and segmentation by recruitment cohorts. It allows us to evaluate quickly, in an agile way, and very frequently, how our customer acquisition is working in terms of quality and value in the medium/long term.

Web

Binnacle Data integrates with Google Analytics 4 by linking GA4 and BigQuery. This allows Binnacle Data to obtain the raw event-level information from GA4, and make it available for exploitation.

Among other advantages, it allows you to consult the information from Google Analytics 4 without 'sampling' the information, as well as avoid consumption problems with the GA4 API quotas, since the data is replicated in Binnacle, in an independent data warehouse for each Entity, and there is no dependency on the GA4 API.

This raw event information is what Binnacle Data cross-references with the rest of the information sources. In addition, Binnacle has a small package of dashboards

specialized in web analytics, although the main advantage is that users can create their own dashboards, or do their personalized analysis, using raw data at the event level, something that is not possible in GA4 directly.
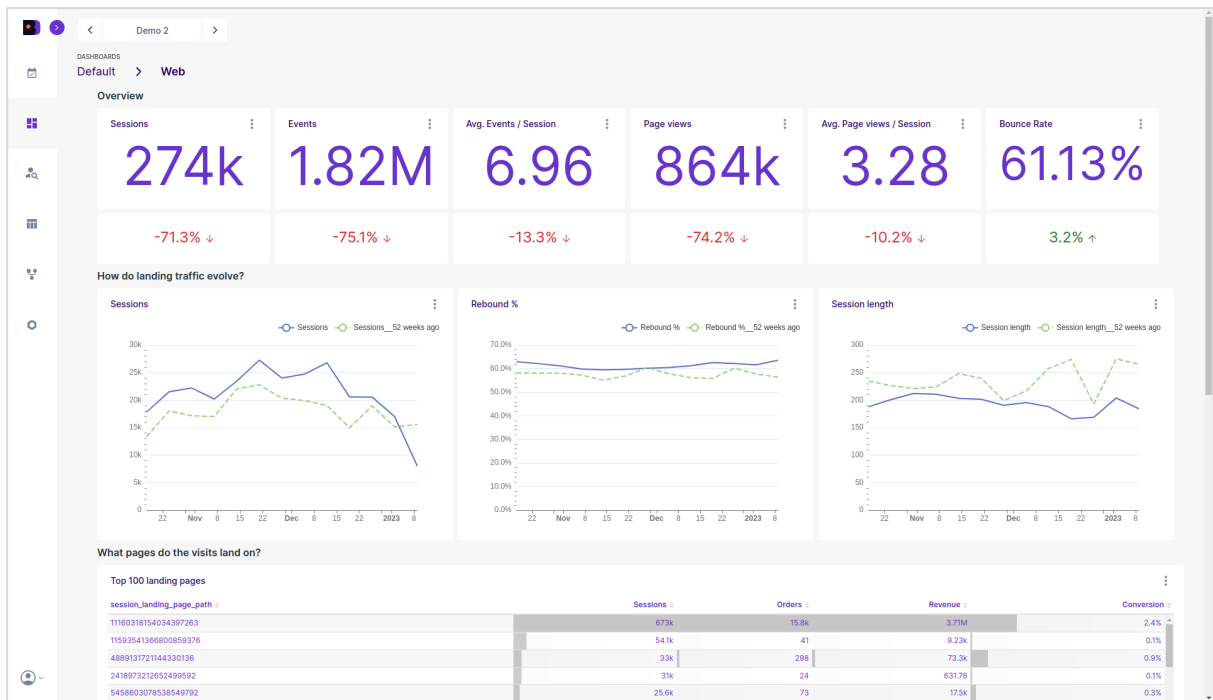
Figure 17. Although the objective of Binnacle Data is not to replace Google Analytics, but to complement it with more advanced business analytics capabilities crossing multiple sources, it also incorporates dashboards specialized in web metrics analytics, which allow you to monitor your performance effectively without exit the tool.

Dashboard customization

For advanced users and agencies, Binnacle Data provides a backend for ad-hoc analysis and definition of custom dashboards.

With this backend, based on the open source business intelligence tool Apache Superset[1], Binnacle Data allows users to design and create their own dashboards from the information captured and generated by Binnacle.

Once a dashboard is approved, it is possible to publish it in Binnacle Data so that it is accessible and usable by the users of each Entity.

This functionality is described in more detail, including a description of the available datasets in the section Custom Dashboards.

---

[1] https://superset.apache.org

Binnacle Data
Powered by **Redegal**
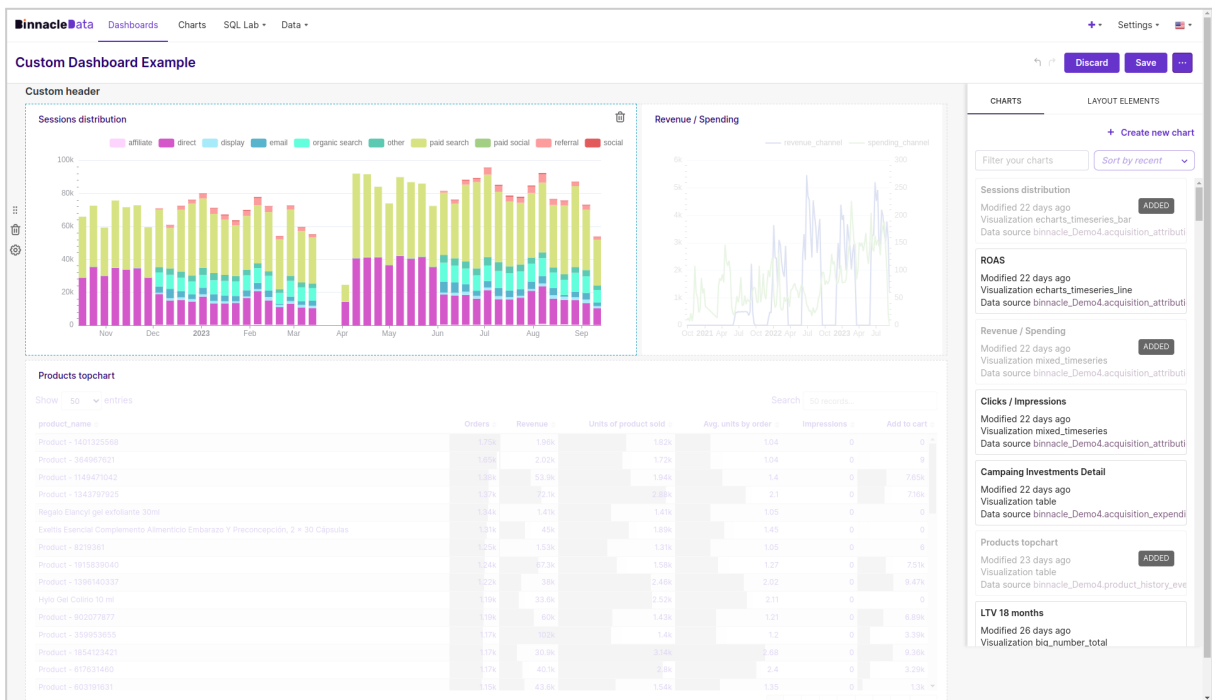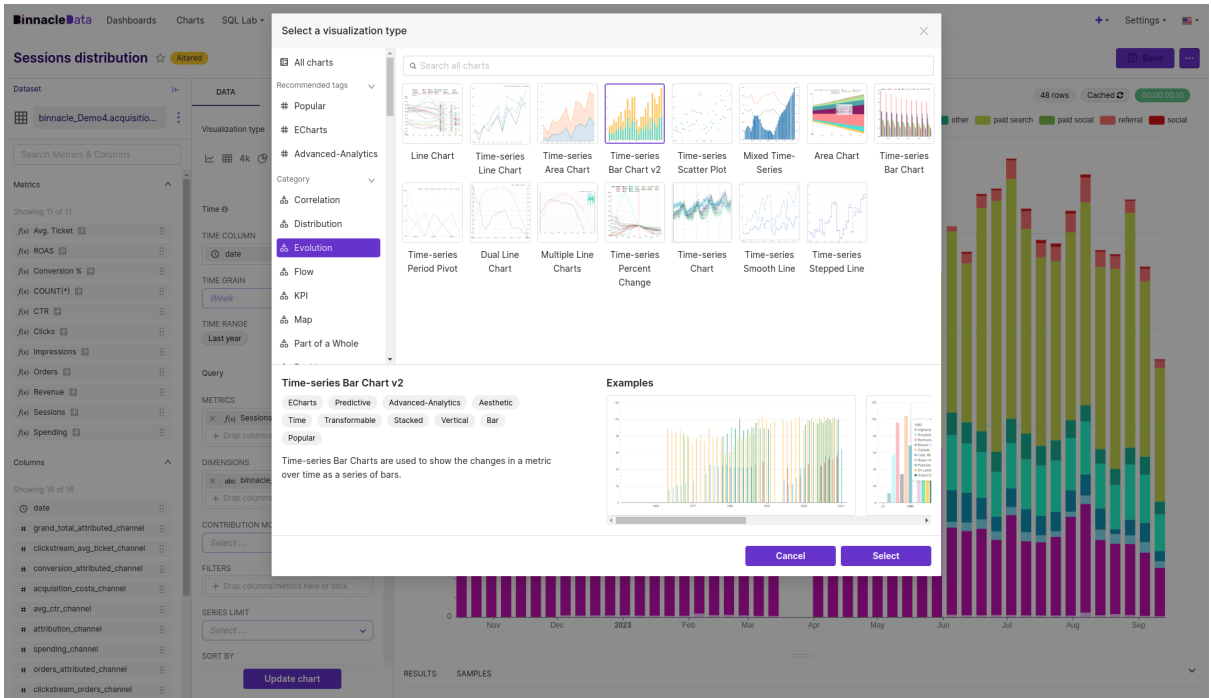
Figure 18. Binnacle Data allows the creation of custom dashboards, both from existing charts and new custom charts. Advanced users can have access to the backend for defining new graphs and dashboards, which once configured, can be made visible in the tool for other users.
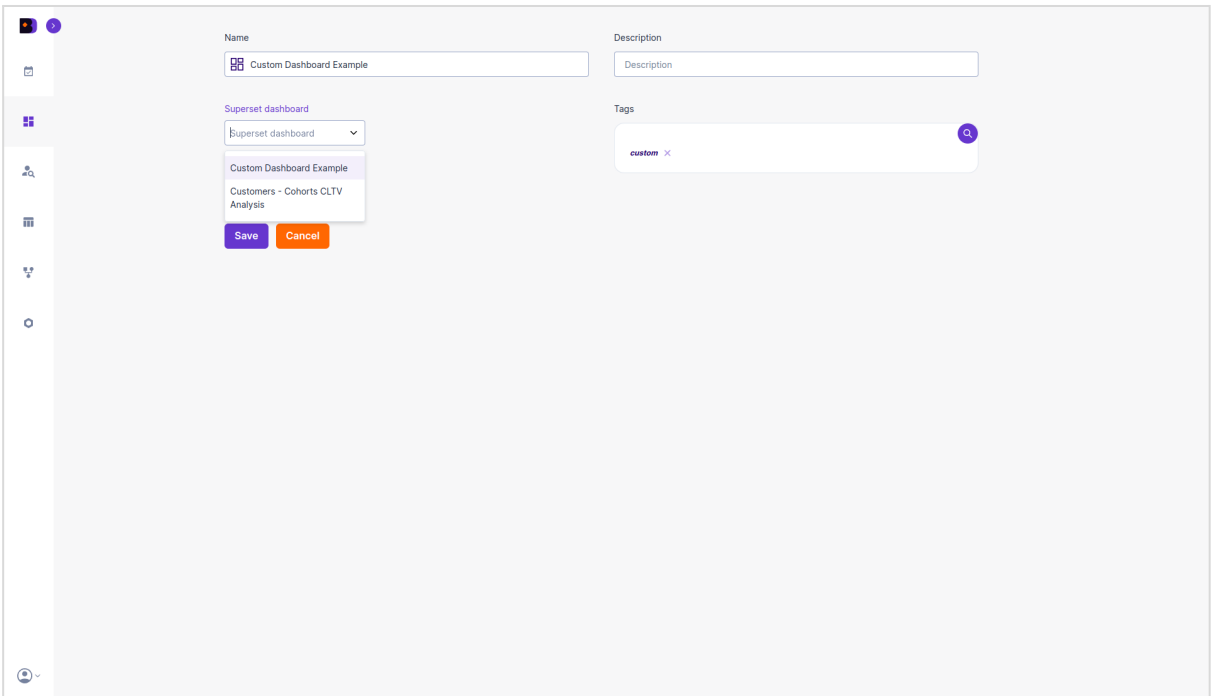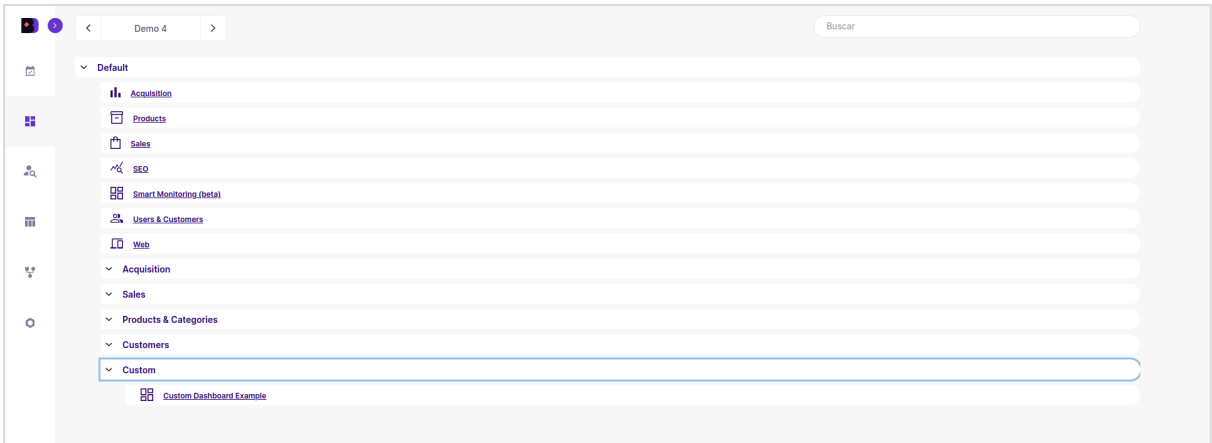
Figure 19. Advanced users, once they have created and configured a new dashboard, can publish it to Binnacle so that it is visible and accessible to other users.

User Explorer

While dashboards implement a large amount of functionality in terms of data access and visualization, the most advanced capabilities of Binnacle Data are available in the form of analysis tools such as the User Explorer.

This tool allows you to filter, segment and analyze the customer database of a digital business based on a large number of criteria.

This allows for a detailed analysis of the sociodemographic and behavioral characteristics of very specific customer segments (for example, those who have visited individual and have visited one or more products, etc.).

In addition to making it possible to export these segments to a file that we can then use to nurture audiences in Google Ads or Meta Ads, or carry out particular marketing actions, such as mailings, coupons, etc.
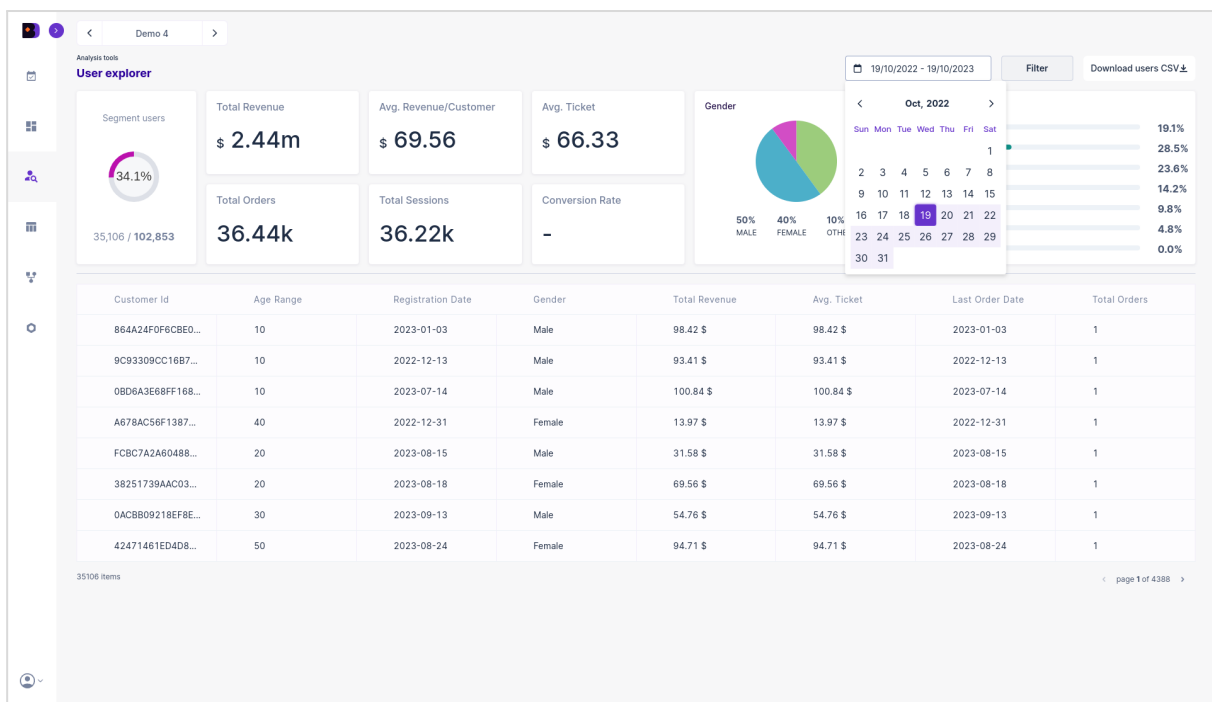
Figure 20. The 'User Explorer' tool allows you to segment, analyze and export the customer database of a digital business based on a large number of criteria. It allows the user to select a period, so that the clients who have interacted with the business in said period will be filtered and, from there, they will know what those clients are like sociodemographically, and how they buy.
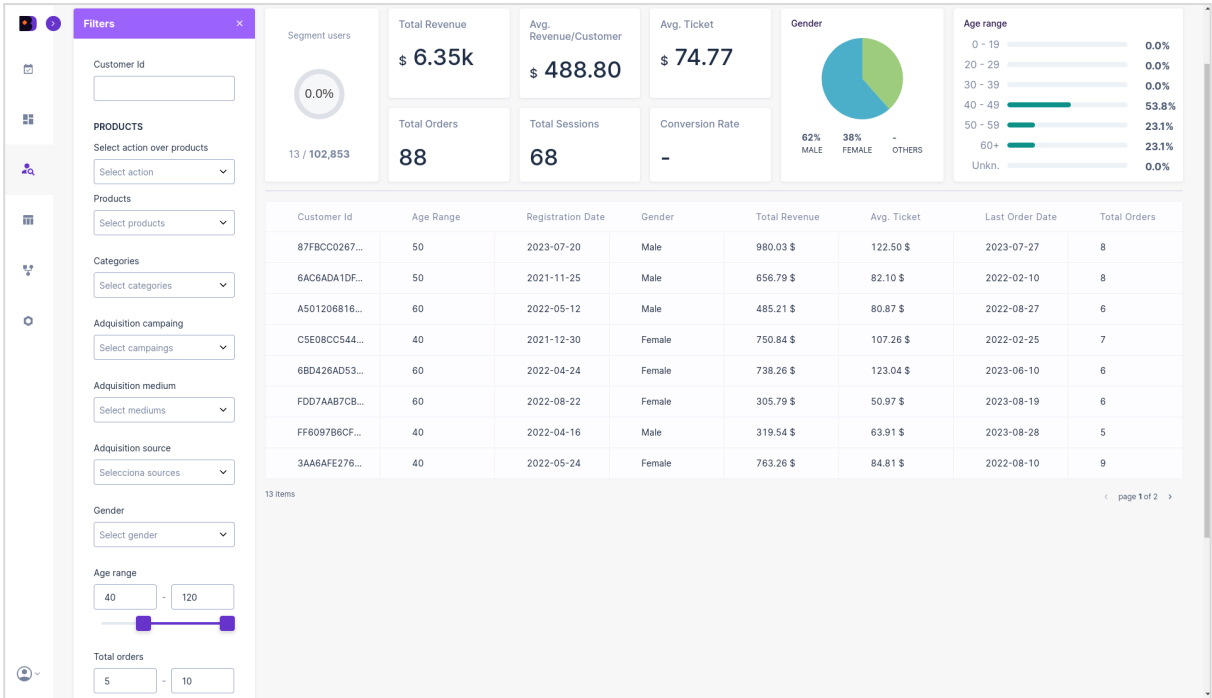
Figure 21. Once the period to be segmented has been established, it is possible to drill-down the data using a wide set of filters. For example, filtering by an age range and a certain number of purchases made during said period.
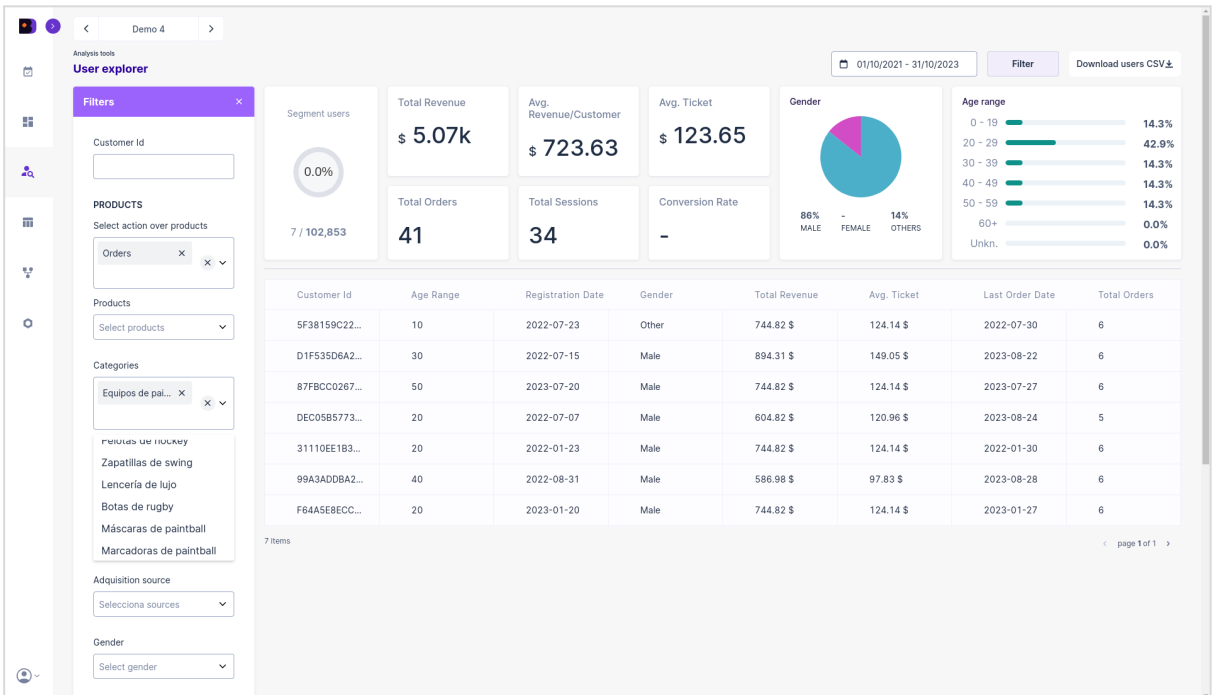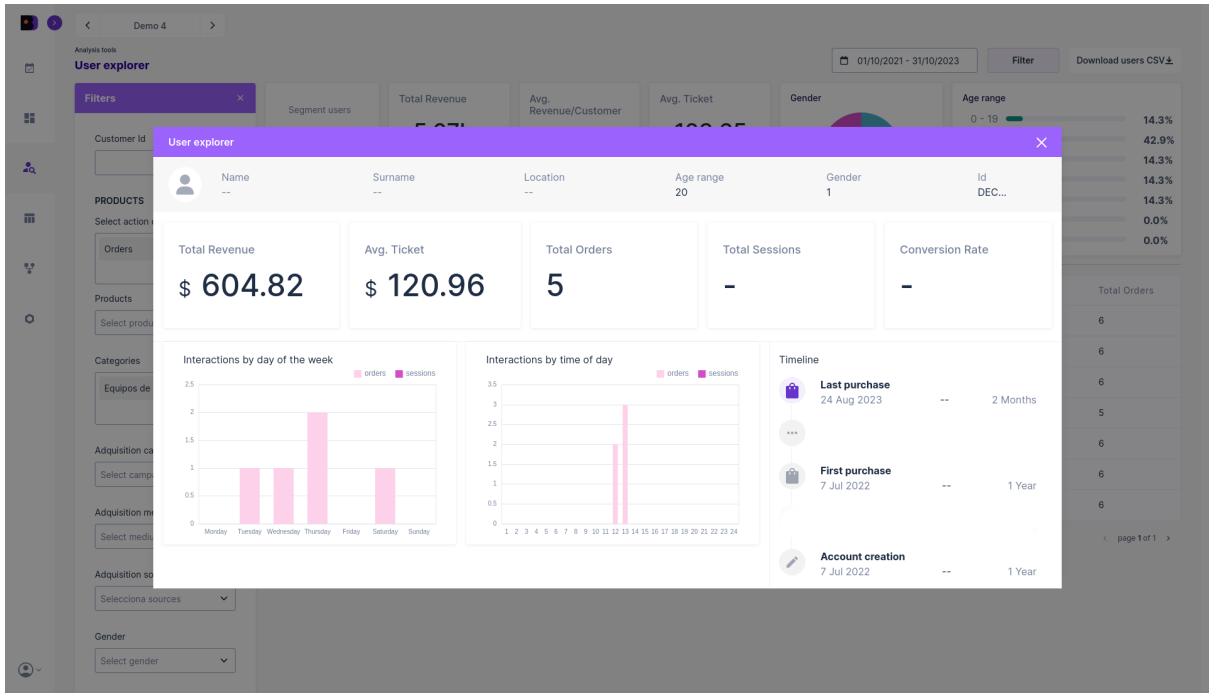
Figure 22. Or even filtering and segmenting those customers who have seen or purchased a specific product or category. These segmentations, in addition to being used to analyze what customers are like and how they behave, also allow us to export the list of users and use them to nurture audiences in Google Ads, Meta Ads, or mailing lists and, therefore, carry out actions focused on segments. very specific users.

RFM

The RFM tool allows you to execute, very quickly and agilely, segmentation analysis based on individual Recency, Frequency and Spending (M) metrics per client.

The user can customize the R, F and M ranges to use, and Binnacle calculates the segmentation live, assigning each customer its corresponding segment and label.

It is possible to establish different ranges for each Entity, as well as test different configurations in order to determine the one that best fits the recurrence level of each Entity.

As shown in Figure 23, at a glance it is possible to distinguish how the different RFM segments are made up, and to analyze details of the characteristics of each group (Figures 24).

Additionally, as in the 'User Explorer', the RFM tool also allows you to export segmented customer lists to nurture audiences or carry out marketing actions to specific groups, to try to recover the 'We can't lose them' or the 'In risk', or reward the 'Champions' and 'Faithful'.
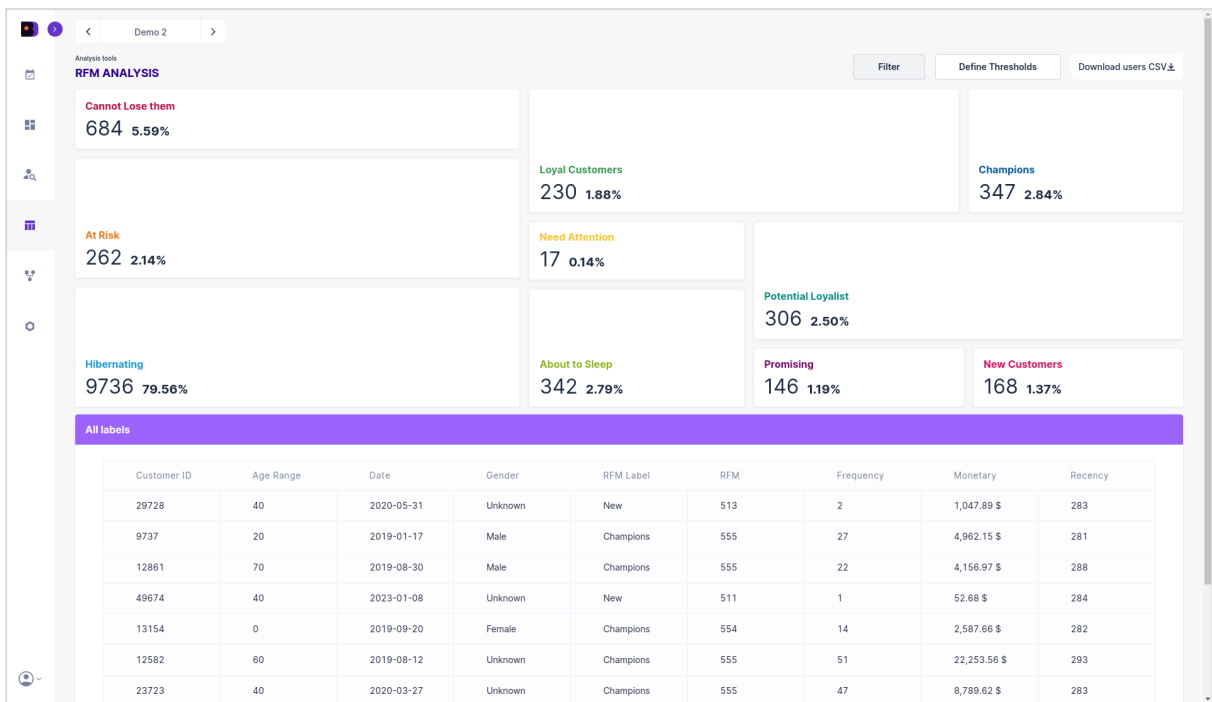
Figure 23. The RFM tool allows you to execute RFM analysis in a graphical and very agile way, with personalized parameters for each Entity (digital business).
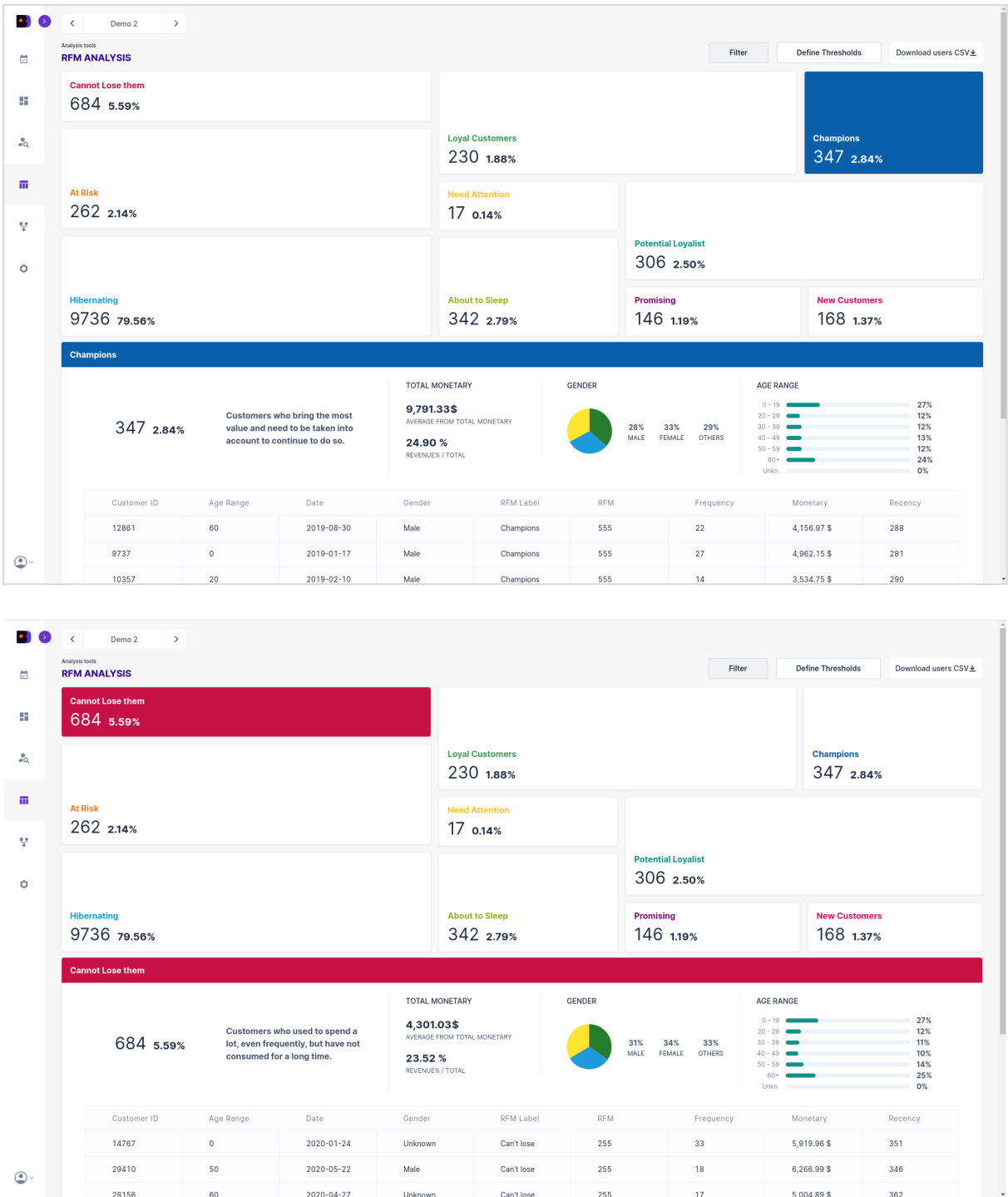
Figure 24. The RFM toolit serves both to analyze how different clients are grouped into interest groups, as well as to analyze what sociodemographic characteristics the different groups share with each other, as well as toexport these segmented lists and use them to carry out marketing actions.

Attribution

Binnacle Data implements four different multi-channel attribution models, including its own data-driven multi-channel attribution model, based on the Markov chain algorithm.[2].

This attribution model (Binnacle Model) allows you to obtain personalized attribution models for each Entity, since the model itself automatically adjusts the weights of each channel based on an automatic analysis of the traffic and conversion paths that each digital business has.

This allows us to obtain an attribution model that is more adjusted to the reality of the data than the typical 'last-click', 'first-click' or linear models.

As an additional advantage, Binnacle allows you to compare the different attribution models, so that the user can use the one that seems most convenient and that best reflects their reality.

Binnacle Data allows you to analyze how sales attribution has evolved between the different channels over time (and the different models), it is possible to analyze the attribution based on both sales (number of purchases) and billing, thus allowing you to identify channels or traffic sources that generate many small purchases, versus others that generate few sales but larger turnover.

Additionally, Binnacle Data automatically cross-references attribution data with investment information in digital advertising channels (Google Ads, Meta Ads and Bing Ads) and can automatically obtain an estimate of the ROAS and CPA generated by each channel.

---

[2] https://www.binnacledata.com/es/blog/modelo-atribucion-personalizado/
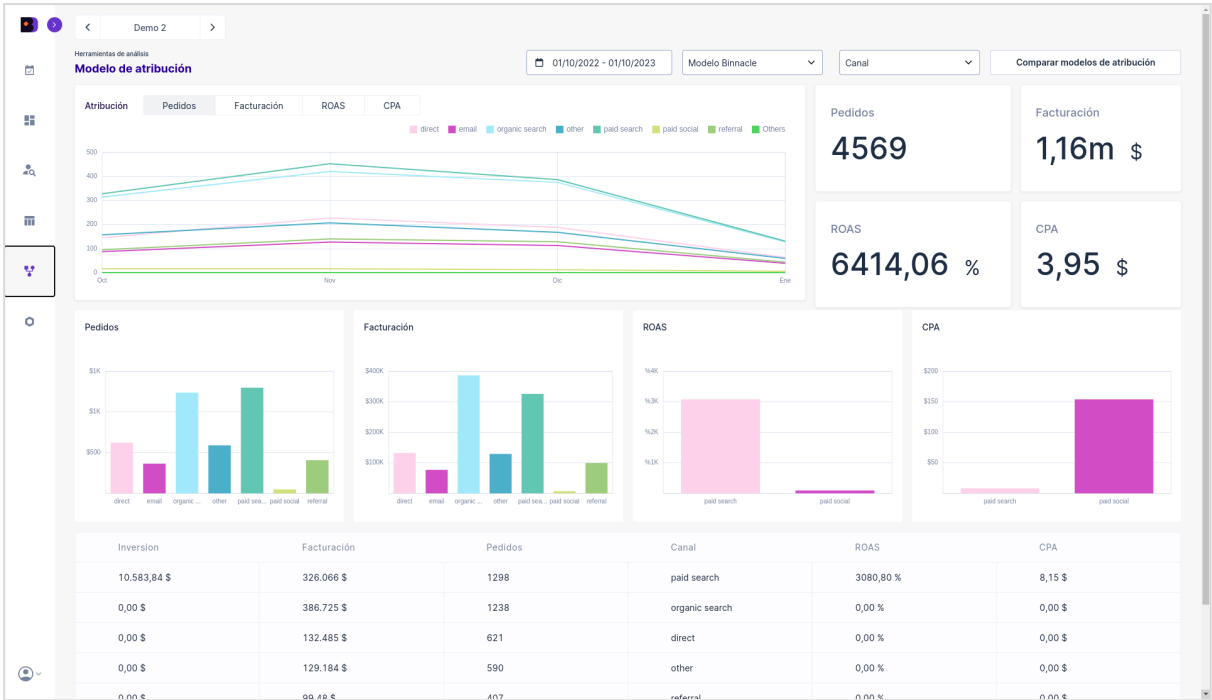
Figure 25. Binnacle Data offers four multi-channel attribution models, highlighting its own data-driven approach based on Markov chains. This model allows you to customize attribution for each entity, automatically adjusting channel weights based on traffic and conversion analysis. This results in a more accurate attribution model than 'last-click', 'first-click' or linear approaches. In addition, Binnacle Data allows the comparison of attribution models and the analysis of the evolution of sales attribution over time, both in terms of purchases and billing. It also crosses attribution data with digital advertising investment to estimate ROAS and CPA for each channel.
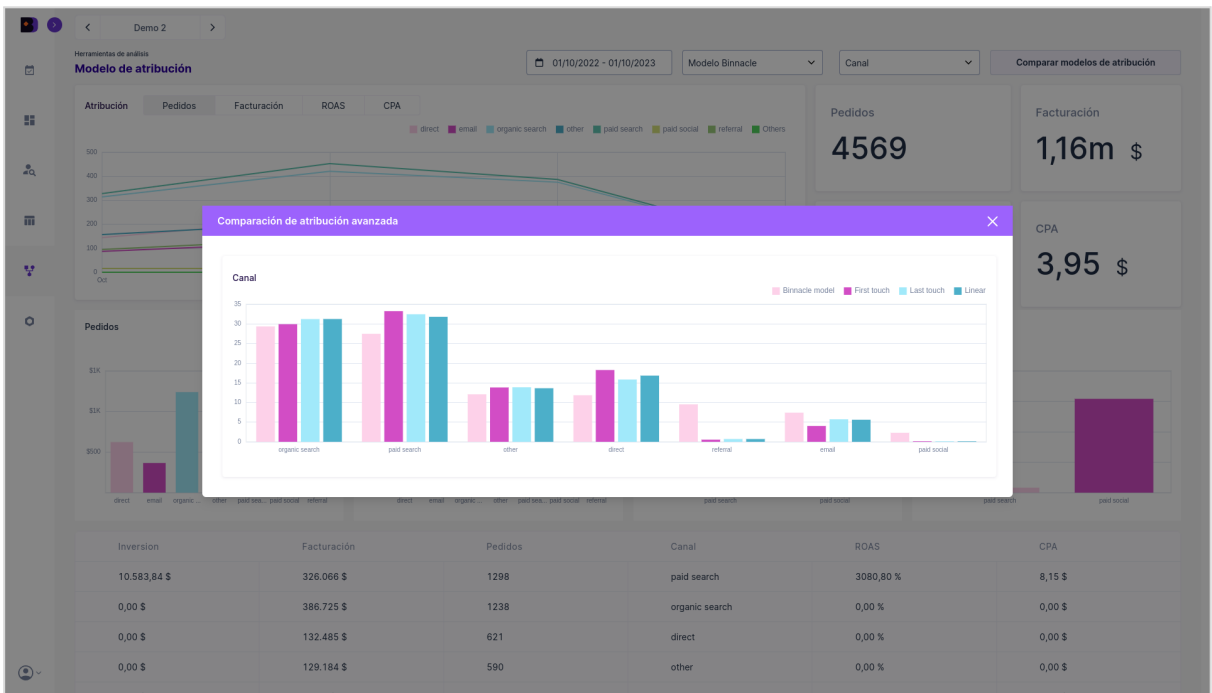
Figure 26. Binnacle Data allows you to compare the results of the different attribution models, thus offering the possibility of using the one that is considered best suited to the reality of each business. In general terms, Binnacle's data-driven model tends to distribute greater weight in social media, email, referral and other channels that greatly assist in sales, which is usually more adjusted to reality than traditional models, which prioritize much the first or last.
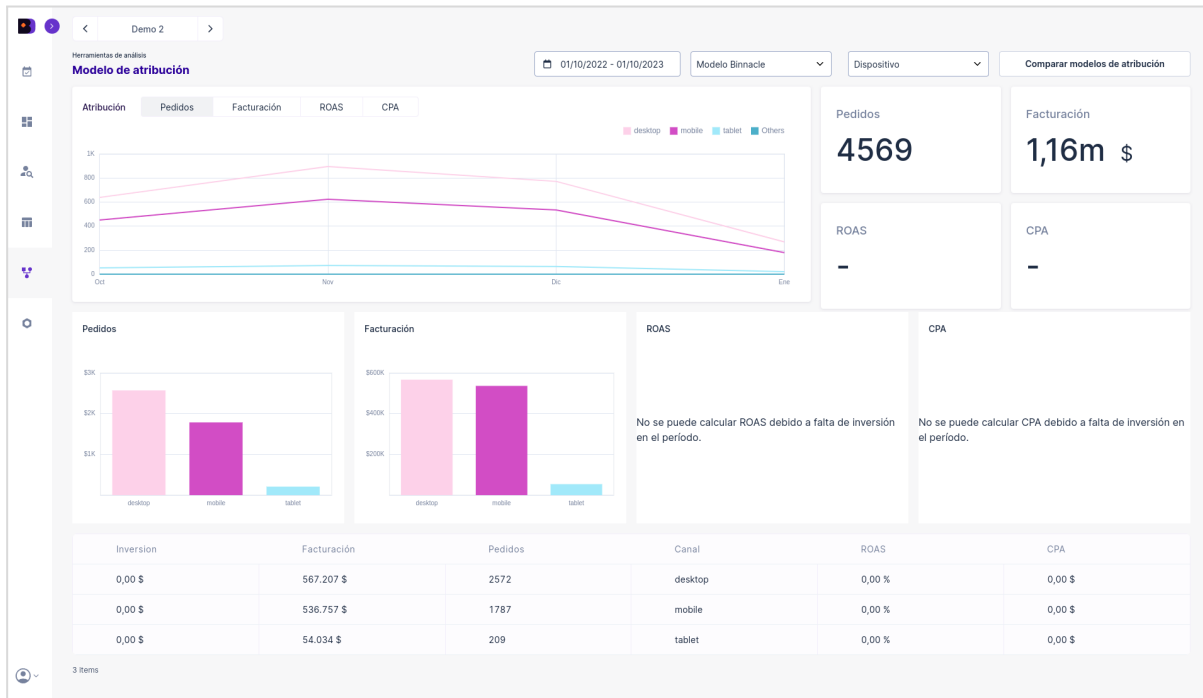
Figure 27. Binnacle Data allows you to analyze attribution by channel and traffic source, and also additionally, by device used. Being a very interesting functionality to understand complex user flows in businesses in which they investigate the purchase from a laptop or desktop, but complete the purchase on a mobile phone, or cases in which the billing or sales of the different devices are very divergent. with the one we see in this example, where the desktop generates more attributed sales, but the mobile has a higher attributed billing, which indicates that the average ticket on mobile is higher.

Data sources

The standard data source package consists of:

- User behavior:
    - [Google Analytics Universal](#)
    - [Google Analytics 4](#)

- Business:
    - [Magento v2](#)
    - [Prestashop](#)
    - [Tailor-made backend](#)

- THIS:
    - [Google Search Console](#)
    - [ProRankTracker](#)

- Advertising investment:
    - [Google Ads](#)
    - [Meta Ads](#)
    - [Bing Ads](#)

Google Analytics Universal (v3)

We have our own connector for GAU that is capable of recomposing, through the GAU standard API, the history with a high level of disaggregation reaching the event level.

Connection via GA Universal API

We can download up to 2 years back from the moment the connection is made. From that moment on, the history is permanently maintained from the first date downloaded.

The connection to the GAU API is made using a service account[3]. Therefore, to grant access permissions to Binnacle Data you only need to add permissions to the email address 'analytics@binnacle-data.iam.gserviceaccount.com' under the 'Reader' role in the GAU view to be used for integration.

Figure 1. Example of access permissions for Google Analytics Universal connection.

Integration Settings

Integration with GAU requires the configuration in Binnacle Data (we leave this set up during the registration process) of several parameters:

1. We need to know the number of the 'custom dimension' that represents the 'backend customer-id' of the users.
    a. If this dimension does not exist before, it must be added, and Binnacle Data will only be able to cross-reference data from the moment it exists.

2. The 'transaction_id' dimension of the e-commerce 'purchase' events must match the order ID in the backend.

3. We need to have an event mapping, from the events used in client tracking, to the standard Binnacle Data events, which are common for all clients and analysis tools.
    a. Events can come via the Event Label or Event Category dimensions.

---

[3] https://cloud.google.com/iam/docs/service-accounts?hl=es-419

Original Event	Binnacle Event
Creacion Cuenta	customer-registry
No ECC - Buscador	product-search
Detail Products Impressions	product-impression
ECC - Product Impressions	product-impression
Product Impressions	product-impression
ECC - Product Detail	product-view
Product Clicks	product-click
Remove from Cart	remove-from-cart
Add to Cart	add-to-cart
Purchase	order-new
Suscripcion Newsletter	newsletter-registry

Figure 2. Example of event mapping between the originals of an ecommerce and the standard Binnacle Data events.

Google Analytics 4

Binnacle Data connects with Google Analytics 4 through the Google BigQuery API, and event information is downloaded in 'raw' format, so it is able to obtain the complete interaction history between users and the website.

In this regard, it should be taken into account that Binnacle Data depends on the data export limitations of GA4 to BigQuery, which in the free version of GA4 allows the export of only 1 million daily events. Therefore, on websites with a large amount of traffic it may be necessary to limit the type of events to be linked with BigQuery.

It is also important to highlight two aspects related to the link between GA4 and BigQuery:

1. Until the link between GA4 and BigQuery is activated, no data can be counted, that is, the downloadable history begins the day after the link between GA4 and BigQuery is correctly configured.

2. Linking to BigQuery may incur additional costs. BigQuery costs depend on storage consumption and data reading consumption in queries.

    a. The Binnacle Data connector only reads each day's data once, so the consumption of reading data should not incur costs (they could be incurred due to other uses that the client may make of the GA4 data in BigQuery, such as (for example, consult them in Looker Studio reports).

    b. Storage, although it includes a small free tier, in the medium term will generate costs, although these should be very low. BigQuery has a cost of €0.02 per Gb, so we estimate that a website with traffic of 600k-800k daily events would have an estimated annual cost of about €10.

BinnacleData
Powered by Redegal

For[link⁴ GA4 con BigQuery](#) Customer must have a Google Cloud account with billing activated and create a Google Cloud project. Once configured and linked it is necessary to configure access permissions (in the Google Cloud project) for a Binnacle service account.

Detailed steps will be indicated to carry out this process on the part of the client, or it can be done in collaboration between the client and the Binnacle Data integrations team interactively in a video call.

Setting access permissions for BigQuery

Within the Google Cloud project, it is necessary to access the "IAM and Administration" section, and within this to "IAM".
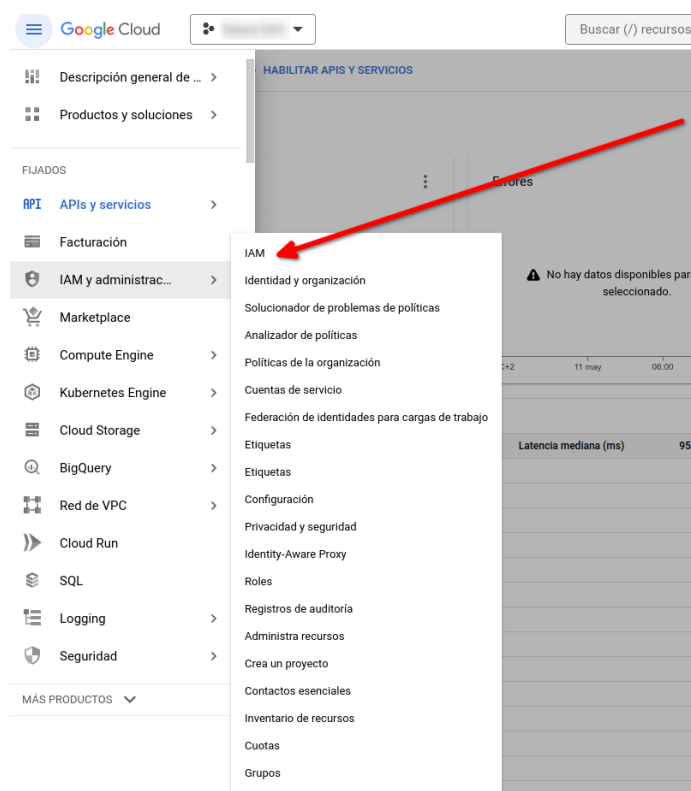
Within this section the roles must be assigned to the Binnacle Data service account 'analytics@binnacle-data.iam.gserviceaccount.com':

- BigQuery Data Owner

- BigQuery Job User

- BigQuery Reading Session User

---

⁴ https://support.google.com/analytics/answer/9823238?hl=en#zippy=%2Cin-this-article
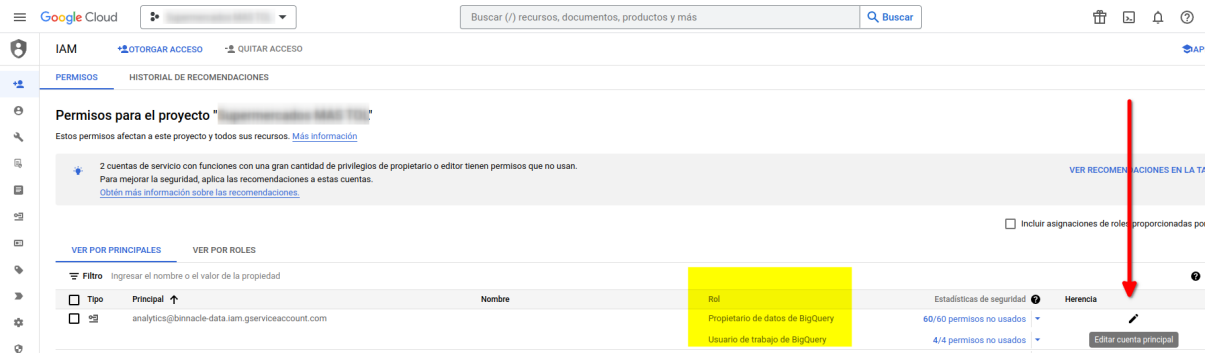
For each BigQuery project they will have to provide us with the 'project-id' and the 'dataset-id'. The latter usually follows the 'analytics_*' format. They are the two values marked in yellow in the following image.
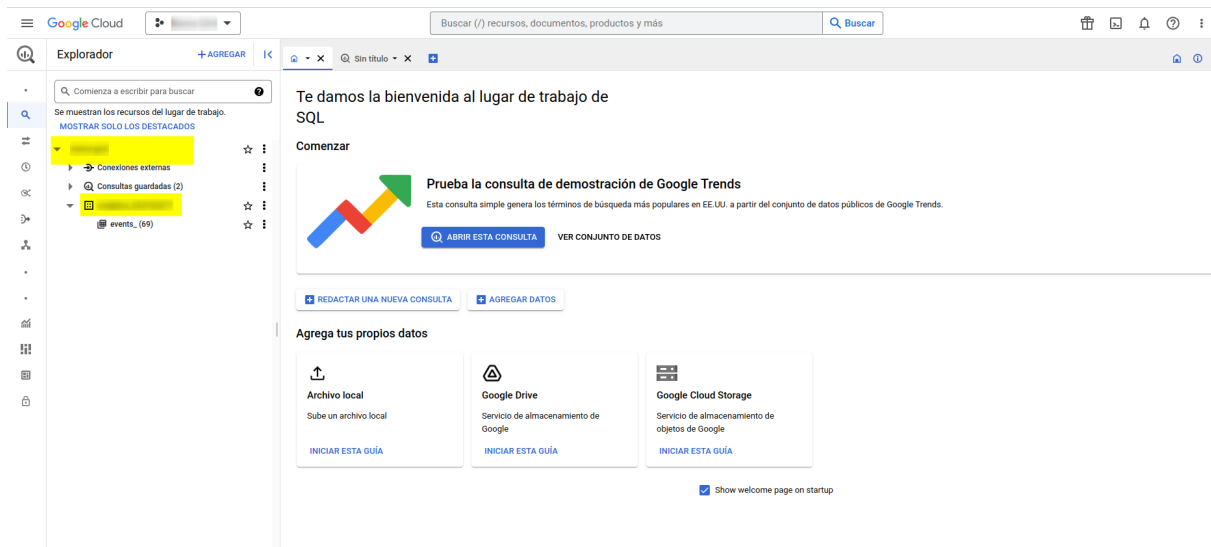
Linking GA4 to BigQuery generates a data table every day, by default, with the free account you have a 60 day expiration limitation and also a storage limitation. With low traffic accounts the storage limitation should not be a problem in 60 days, but with somewhat larger accounts it may become 'blocked'. Furthermore, the cost is very low, and it is highly recommended to deactivate the expiration, to have the traffic data there, in raw form, always available for any future use.

The cost in 'daily' mode comes only for storage, and is very low. For example, a client with around 2,500-3,000 sessions per day generates a cost of €0.60-€0.70 per month in storage.

For large clients, who can exceed 1M hits per day, what should be done is activate streaming mode, which has no hit limitation. It is more expensive, since it has a cost for streaming and another for storage. Even so, it is still very little expense. For example, a client with around 40,000 sessions per day generates an expense of around €1.50 per month between streaming and storage.

Therefore, in general, it is not only highly recommended to activate billing and maintain the complete history in BigQuery, but for medium clients it is necessary, since by not being able to change the expiration days, it could fail due to the limit of storage.

Integration Settings

In addition to configuring the link with BigQuery and access permissions to the BigQuery project, it is necessary to perform a small configuration of event and identifier mappings similar to the one indicated above for GA Universal.

The BigQuery GA4 connector uses the standard GA4 e-commerce event definition documented here:

https://developers.google.com/analytics/devguides/collection/ga4/ecommerce?hl=es

Additionally, depending on the tracking implementation that the client has carried out, the connector can be adapted to map custom parameters for the following dimensions:

- user_id → Represents the user ID in the e-commerce backend.
- transaction_id → Represents the order ID in the e-commerce backend.

And you also accept the receipt of item information in custom events (for example, funnel-checkout) in addition to standard e-commerce events.

Magento (v2)

Binnacle Data connects to Magento (v2) via API with daily incremental download.

The connector downloads data for the following concepts:

- categories
- customers
- products
- orders
- invoices
- carts
- shipments

The connector can be configured to download only data from one of the existing stores in the backend, or download all data.

For the interconnection we need:

1. A user with read permissions for all the concepts indicated above.

2. Order status map, similar to GA, that allows us to map order statuses (cancelled, returned, etc.) to a series of standard Binnacle Data statuses.

3. Independent store/business identifiers implemented in the backend.

4. Backend data loading schedules. We try to schedule data loading at times that do not coincide with other scheduled tasks to avoid unnecessary loads on the backend.

Prestashop

Binnacle Data connects to Prestashop via API with daily incremental download.

The connector downloads, daily, data for the following concepts:

- addresses
- carts
- categories
- customers
- deliveries
- order_carriers
- order_details
- order_histories
- order_invoices
- order_payments
- order_states
- orders
- product_option_values
- product_options
- products
- shop_urls
- shops
- states
- stores

And it is responsible for automatically integrating and adapting them to Binnacle's unified data model.

For the interconnection we need:

5. An API Key for access to the backend with read permissions for the concepts indicated above.
   a. https://devdocs.prestashop-project.org/8/webservice/tutorials/creating-access/

6. Order status map, similar to GA, that allows us to map order statuses (cancelled, returned, etc.) to a series of standard Binnacle Data statuses.

7. Store map, to be able to identify which store IDs correspond to each independent 'business'.

8. Backend data loading schedules. We try to schedule data loading at times that do not coincide with other scheduled tasks to avoid unnecessary loads on the backend.

From Prestashop we can download the complete data history since the start of the e-commerce.

BinnacleData
Powered by Redegal

Tailor-made e-commerce backend

Binnacle Data has a 'standard' connector for the integration of custom e-commerce backends. In this case, it is the backend itself that must be adapted to the data needs of Binnacle Data.

To do this, it must be able to generate, on a daily basis, a package of files in JSONL or CSV format and export them to a shared space (SFTP, SSH or Amazon S3) from which Binnacle Data can import the data.

Regarding integration requirements:

- During the kick-off stage, detailed documentation of the format of the exported files will be provided to the client.
- The Binnacle Data team will support the client during the implementation of the export and with its validation.
- Finally, the client must provide Binnacle Data with connection credentials to the shared space.

The client will be responsible for managing the daily data export processes to the shared space.

BinnacleData
Powered by Redegal

Google Search Console

The connector downloads page performance information (clicks, impressions and positioning) related to: queries, pages, countries, devices and dates.

The connector for Google Search Console uses the same service account as the Google Analytics Universal connector, so access permissions are configured in a similar way, only giving restricted access permissions to an email (analytics@binnacle-data.iam.gserviceaccount.com).

Access permission must be given at the subdomain level, not the domain ownership level.
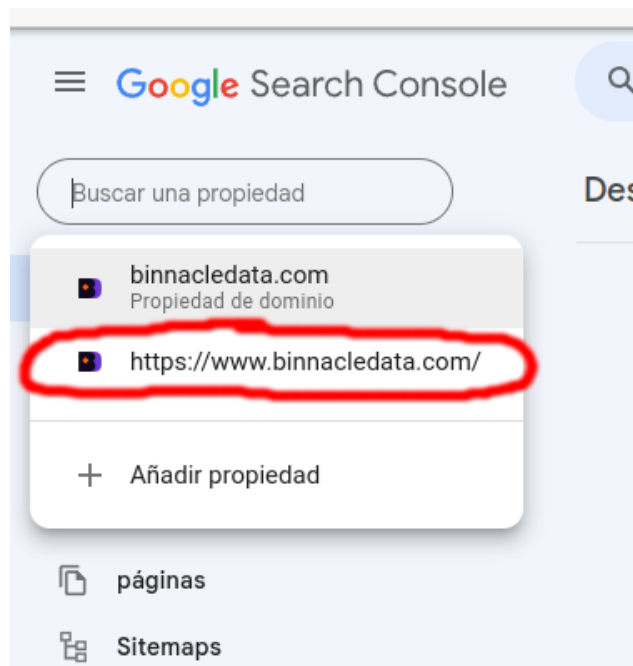
Additionally, it is necessary to know the domain(s) from which the information will be extracted.

The connector allows us to download a history of between 12 and 18 months. Once connected to Binnacle, the history is maintained indefinitely from the first date downloaded.

ProRankTracker

The connector downloads, daily, positioning information for a domain in multiple search engines.

The connection with ProRankTracker is made via API, so an 'Agency' level user account and username and password information are required.

Google Ads, Meta Ads y Bing Ads

The connection with the digital advertising information services of Google, Meta and Bing is very similar in all three cases.

The three connectors download investment information, daily, at three levels: ads, ad groups and campaigns.

The Binnacle connector uses the official APIs of each of the services and in all cases permissions are granted via OAuth and directly from the Binnacle UI, or through a small console wizard available to our integration team.

It is necessary to have a Google, Meta and Bing user who has read permissions on the advertising accounts to be connected (it is recommended that this user has minimum read permissions) and use said user to perform the OAuth2 authorization of Binnacle Data .

For Google and Meta, this is a process that the user carries out directly through the Binnacle Application. In the case of Bing Ads, the process needs to be done interactively between the Binnacle Data integration team and the client.

Once the OAuth2 access token is obtained, Binnacle connects directly and uploads data daily.

In the particular case of Meta, it is necessary to manually renew the access token every 90 days (this can be done by the user directly in the Binnacle UI).

In all cases you can download a history going back several years.

Custom Dashboards

The DataHub

Each Entity (a digital property of a client) in Binnacle Data has its own fully managed data warehouse in the cloud. We call this data warehouse the DataHub, and it stores and integrates data from all sources of each entity.

The different Binnacle Data tools access the DataHub to obtain the data they need, both the dashboards and the segmentation or attribution tools.
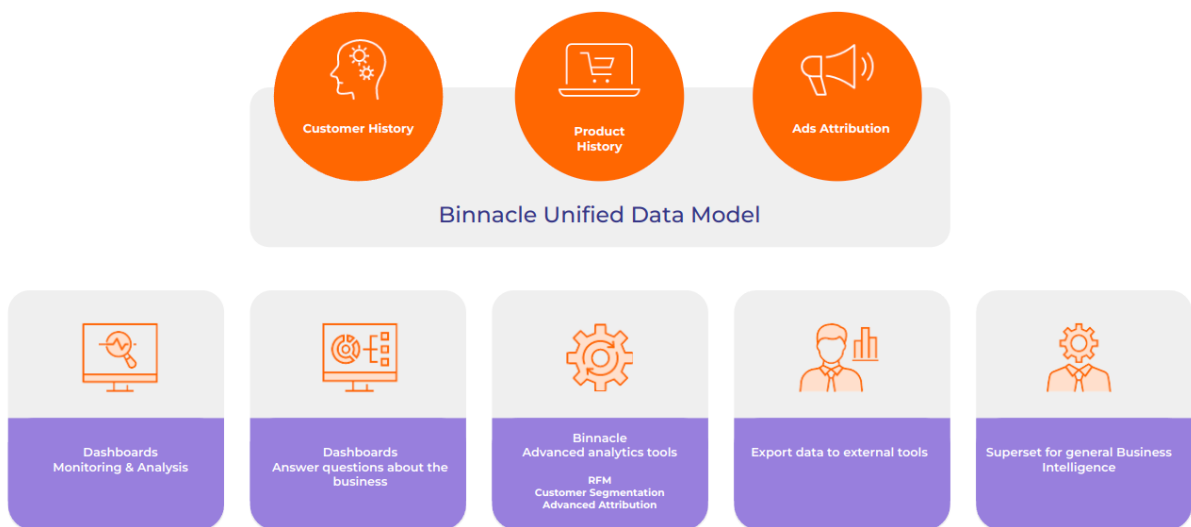
Figure 1. Binnacle Data stores the data of each Entity in a DataHub (a self-managed data warehouse for each client). The different tools access the DataHub to exploit the data.

Data is stored in the DataHub in tiers:

1. A first level stores the data in the original format of each data source. This first level is actually made up of two layers:

   a. A first layer of data input, where it is in raw source format. The datasets and tables associated with said layer usually have names specific to each source platform (prestashop_*, google_*, etc.).

   b. A second layer, already preprocessed (for example in GA4, dimensions are flattened and extracted) that is internally known as 'bronze level', and therefore includes tables that have the suffix *_bronze.

2. This raw data is 'upgraded' to what we call the Unified Binnacle Model. The Figure 2 shows a schematic view of this process. Where they are already independent of the original data source. We call this 'silver level'. Even silver is mainly worked on at the 'event' level.

3. Finally, the data already adapted to the Binnacle model in silver is processed and crossed with each other to obtain an enriched view of it with simpler and easier to understand data models.
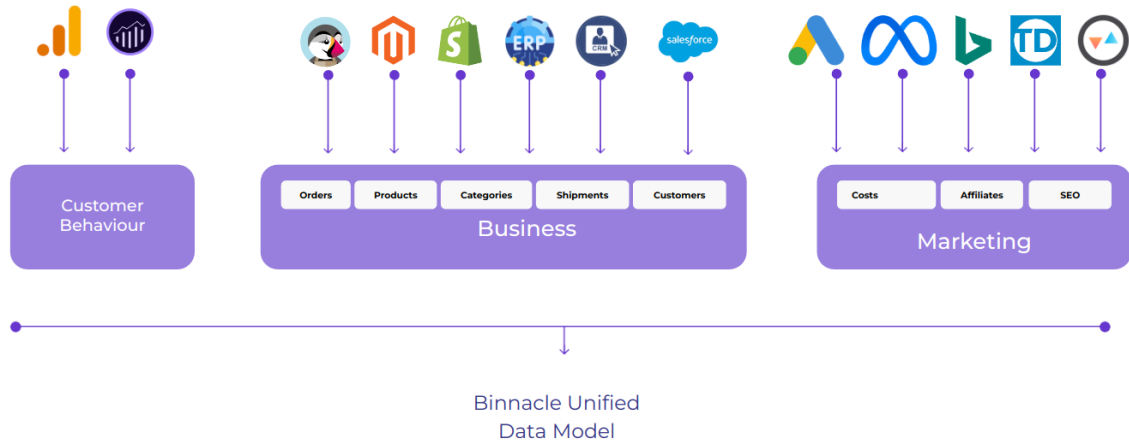
Figure 2. High-level view of the content of each Binnacle Dato DataHub. We start from the original data from each data source (which are accessible) and transform/cross them to arrive at the Binnacle Unified Model.

Next, in the Figure 3, you can see a more detailed view of the data transformation process through the different levels, from the data in its source format, to the Binnacle data models. In this case it is the process that occurs with the user behavior data that comes from GAU and/or GA4, where you can see how they are mixed at the silver level, where we already obtain a homogeneous and integrated vision of both platforms, to continue then integrating with other data sources (backend, marketing, etc.) and leveling up.
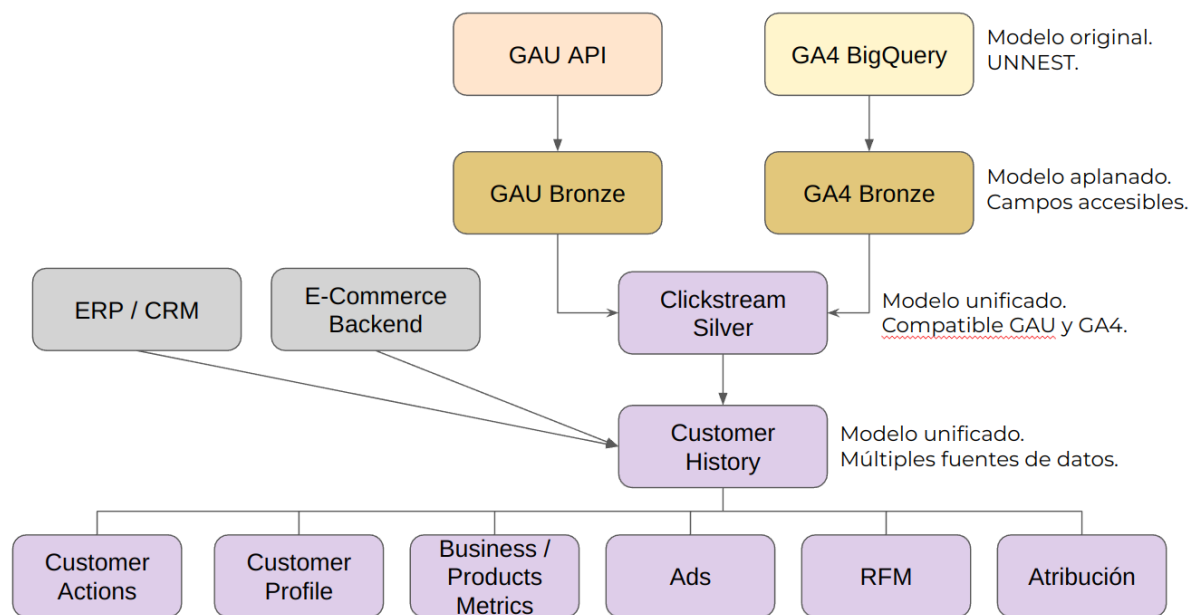
Figure 3. More detailed view (the user behavior part) of the transformation, crossing and integration processes of data sources, from the original data (orange and yellow), to the Binnacle Unified Model (in purple).

The Datasets

Binnacle incorporates a complete business intelligence tool that makes it possible to create new customized dashboards on the different data models, both the Unified Model and the original data.

This tool also allows you to explore the data in a completely personalized way, both graphically and even execute SQL queries on it.

The tool is based on the open source Superset software and handles 3 major concepts:

- **Datasets**. Represents sets of data (rows and columns, or dimensions), they are similar to a database table, but incorporate additional semantic information, such as a set of predefined metrics.
    - They can be physical. They are a direct reflection of a table in the DataHub.
    - Or virtual. They are the result of a query in the DataHub. Virtual ones can be used to perform customized ad-hoc processing on existing data in the datahub. It is important to emphasize that in this case, the processing will be executed live every time the dataset is consulted.

- **Graphics**. They are graphical visualizations of the data in a dataset. They can be configured through a graphical wizard without knowledge of SQL.

- **Dashboards**. They allow you to build interactive reports that can function as analysis and drill-down tools thanks to a set of custom filters.

Figure 5. List of datasets available in each Binnacle Data DataHub.

The datasets represent the different data models available in Binnacle for exploitation through custom dashboards and graphic visualizations. Essentially it is a table-style representation of the data where we must distinguish the following:

- **Rows**. Represents a data entity, it can be a specific event (page view, purchase, shipment, etc.) or a higher entity, such as an order, a user, etc.

- **Columns**. Each has a type and represents a dimension/property of the data entity that each row represents.

- **Metrics**. Optionally, a dataset can incorporate a set of predefined metrics based on grouping operations on the rows and columns. The user, when creating new charts, can define their own metrics on the fly.

acquisition_expending_by_day

Represents spending per campaign and digital advertising platform aggregated on a daily basis.

Each row of the dataset represents the spending, in one day, on a digital advertising platform (Google Ads, Meta Ads, Bing Ads, etc.) and on a specific campaign.

Columns

Column	Type	Description
date	Date	Date in day format
type	Text	Type of advertising (ads, affiliates, etc.)
program_name	Text	Advertising platform.
campaign_name	Text	Campaign.
year	Number	Year (of date).
month	Number	Month (of date).
spending	Number	Spending on the campaign on the day.
clicks	Number	Number of registered clicks.
impressions	Number	Number of registered impressions.
ctr	Number	Ratio of clicks per impressions.

Metrics

BinnacleData
Powered by Redegal

Metric	Type	Description
Spending	Number	Added spending on campaigns.
Clicks	Number	Clicks added to campaigns
Impressions	Number	Impressions added in selected campaign
CTR	Number	Ratio between clicks and impressions for selected campaigns.

acquisition_attribution

Represents sales and traffic attributed by source and channel per day. It currently uses a 'last click' model.

Each row of the dataset represents the ad spend, sales and traffic attributed in a day, on a digital advertising platform (Google Ads, Meta Ads, Bing Ads, etc.) and on a specific source and channel.

Columns

Column	Type	Description
date	Date	Date in day format
binnacle_channel	Text	Traffic channel
binnacle_source	Text	traffic source
grand_total_attributed_channel	Number	Billing attributed to source.
clickstream_avg_ticket_channel	Number	—
conversion_attributed_channel	Number	% conversion attributed to source.
acquisition_costs_channel	Number	CAC for
avg_ctr_channel	Number	Average CTR to the source.
attribution_channel	Number	Percentage of sales attribution to source
spending_channel	Number	Advertising investment at the source.
orders_attributed_channel	Number	Orders attributed to source.
clickstream_orders_channel	Number	–
clickstream_sessions_channel	Number	–

BinnacleData
Powered by Redegal

clicks_channel	Number	Clicks reported by the advertising platfor
impressions_channel	Number	Impressions reported by the advertising platform.
paid_channel	Number	1 if it is a paid channel, 0 otherwise.

Metrics

Metric	Type	Description
Spending	Number	Total aggregate investment in the select sources.
Sessions	Number	Total sessions added on selected sources
Revenue	Number	Total billing aggregated across selected sources.
Orders	Number	Number of orders added in the selected sources.
Impressions	Number	Total impressions added across selected sources.
Clicks	Number	Total clicks added on selected sources.
CTR	Number	Average CTR for selected sources.
Conversion %	Number	Average conversion % for added sources.
ROSE	Number	Average ROAS for aggregated sources.
Avg. Ticket	Number	Medium ticket for added sources.

acquisition_expending_by_day

Represents spending per campaign and digital advertising platform aggregated on a daily basis.

Each row of the dataset represents the spending, in one day, on a digital advertising platform (Google Ads, Meta Ads, Bing Ads, etc.) and on a specific campaign.

Columns

Column	Type	Description
date	Date	Date in day format

type	Text	Type of advertising (ads, affiliates, etc.)
program_name	Text	Advertising platform.
campaign_name	Text	Campaign.
year	Number	Year (of date).
month	Number	Month (of date).
spending	Number	Spending on the campaign on the day.
clicks	Number	Number of clicks recorded.
impressions	Number	Number of registered impressions.
ctr	Number	Ratio of clicks per impressions.

Metrics

Metric	Type	Description
Spending	Number	Added spending on campaigns.
Clicks	Number	Clicks added to campaigns
Impressions	Number	Impressions added in selected campaign
CTR	Number	Ratio between clicks and impressions for selected campaigns.

seo_performance

Each row represents the SEO performance of the entity, a URL, a search query, a device type, or a country for a specific day.

It incorporates two dimensions that allow us to distinguish what type of positioning each row reflects:

- **subject_type**. SEO subject monitored: site, url, query, country or device.
- **search_type**. Search type 1monitored: image, news, web or video.

Columns

Column	Type	Description
date	Date	Date in day format
subject_type	Text	SEO subject: site, url, country, device or quer

BinnacleData

Powered by Redegal

site_url		URL of the site being monitored.
search_type		Search type: web, news, image or video.
subject		Monitored subject, country, device, query, e[concrete.
impressions		Impressions for the subject and day.
clicks		Clicks for the subject and day.
position		Average position of the subject on the day.
ctr		Average CTR of the subject on the day.

Metrics

Metric	Type	Description
Impressions	Number	Impressions for the subject and type of S the day.
Clicks	Number	Clicks for the subject and type of SEO on day.
Avg. Position	Number	Average position of the subject and type on the day.
Avg. CTR	Number	Average CTR of the subject and type of S the day.

orders

Consolidated orders. Each row represents an order in the e-commerce backend. Each order only appears once, representing its last status.

Columns (main)

Column	Type	Description
created_at	Date and Time	Date and time of order creation in backend.
updated_at	Date and Time	Date and time of the last update of order in backend.
ingested_at	Date and Time	Date and time of entry of the order DataHub.

order_entity_id	Text	Unique ID of the order.
order_state	Text	Order status mapped to Binnacle.
order_status	Text	Original status of the order in your backend.
customer_id	Text	Unique ID of the client.
customer_age_range	Number	Client age range.
customer_gender	Number	Client gender. 1 = man, 2 = woman, = unknown.
order_grand_total	Number	Total billing of the order (discountir returns).
order_base_grand_total	Number	Total order billing, without taxes (discounting returns).
order_discount_amount	Number	Quantity discounted from the orde to applied discounts.
order_weight	Number	Order weight.
payment_method	Text	Type of payment method.
shipping_region	Text	Shipping region (province).
shippping_country	Text	Shipping country.
shipping_method	Text	Shipping method.
order_total_item_count	List(Number)	Total number of different items in t order.
order_items_info.name	List(Text)	List of names of the items in the or
order_items_info.product_id	List(Text)	List of IDs of the products/items in order.
order_items_info.qty_ordered	List(Number)	List of quantities ordered for each product (not returned).
order_items_info.qty_refunded	List(Number)	List of returned quantities of each product.
order_items_info.amount_refunded	List(Number)	List of amounts returned for each product.
order_items_info.row_total	List(Number)	List of total billing by product (discounting returns).

order_items_info.discount_amount	List(Number)	List of quantities discounted per pr
order_items_info.category_ids	List(Text)	List of categories of each product/it
order_items_info.category_names	List(Text)	List of category names of each product/item.

Metrics

Metric	Type	Description
Revenue	Number	Accumulated net billing.
Orders	Number	Number of net orders (or order id).
Avg. Item Count	Number	Average number of items per order.
Avg. Ticket	Number	Average ticket per order.
Amount Discounted	Number	Total amount discounted by discounts.
Amount Refunded	Number	Total amount returned.
Quantity Refunded	Number	Number of units of products/items retur

orders_events_silver

Contains order history.

Represents order update events, so each order can appear in multiple rows. In each row it will have a different state.

This table is useful for analyzing how orders evolve from purchase to shipping, payment or return.

Since data is only updated once a day, if multiple updates to an order occur on the same day, only the latest one will be visible.

When querying this table, it is important to know that each order can appear multiple times, so if dimensions are simply added, you may be counting duplicates. For these cases it is usually better to use the 'orders' dataset.

Columns (main)

Column	Type	Description
created_at	Date and Time	Date and time of order creation in backend.

updated_at	Date and Time	Date and time of the last update of order in backend.
ingested_at	Date and Time	Date and time of entry of the order DataHub.
order_entity_id	Text	Unique ID of the order.
order_state	Text	Order status mapped to Binnacle.
order_status	Text	Original status of the order in your backend.
customer_id	Text	Unique ID of the client.
customer_age_range	Number	Client age range.
customer_gender	Number	Client gender. 1 = man, 2 = woman, = unknown.
order_grand_total	Number	Total billing of the order (discounti returns).
order_base_grand_total	Number	Total order billing, without taxes (discounting returns).
order_discount_amount	Number	Quantity discounted from the orde to applied discounts.
order_weight	Number	Order weight.
payment_method	Text	Type of payment method.
shipping_region	Text	Shipping region (province).
shippping_country	Text	Shipping country.
shipping_method	Text	Shipping method.
order_total_item_count	List(Number)	Total number of different items in t order.
order_items_info.name	List(Text)	List of names of the items in the or
order_items_info.product_id	List(Text)	List of IDs of the products/items in order.
order_items_info.qty_ordered	List(Number)	List of quantities ordered for each product (not returned).
order_items_info.qty_refunded	List(Number)	List of returned quantities of each product.

order_items_info.amount_refunded	List(Number)	List of amounts returned for each product.
order_items_info.row_total	List(Number)	List of total billing by product (discounting returns).
order_items_info.discount_amount	List(Number)	List of quantities discounted per pr
order_items_info.category_ids	List(Text)	List of categories of each product/it
order_items_info.category_names	List(Text)	List of category names of each product/item.

Metrics

Metric	Type	Description
Orders	Number	Number of net orders (or order id).

products

Consolidated view of the e-commerce backend product catalog.

Each row represents a product (or product variant, depending on how the backend is configured).

Columns

Column	Type	Description
created_at	Date and Time	Date and time of order creation in backe
updated_at	Date and Time	Date and time of the last update of the o backend.
ingested_at	Date and Time	Date and time of entry of the order in the DataHub.
id	Text	Unique product ID.
name	Text	Product name.
sku	Text	Product SKU.
status	Text	Whether the product is active or has bee removed. Information on eliminated prod is maintained to enrich history.
description	Text	Long product description.

short_description	Text	Short product description.
weight	Number	Product weight.
visibility	Number	Product visibility in e-commerce.
price	Number	Price of the product.
category_name	List(Text)	List of category names to which the prod belongs.
category_ids	List(Text)	List of IDs of categories to which the prod belongs.
meta_title	Text	Product meta title.
meta_description	Text	Product meta description.
keywords	Text	Product meta keywords.
custom_attributes.keys	List(Text)	List of personalized product attributes. K
custom_attributes.values	List(Text)	List of personalized product attributes. V

Metrics

Metric	Type	Description

categories

Consolidated view of the list of e-commerce categories.

Each row represents a category.

Columns

Column	Type	Description
created_at	Date	Category creation date.
updated_at	Date	Date of the last update of the category.

Binnacle Data
Powered by Redegal

origin_id	Text	Original data source.
id	Text	Unique ID of the category.
name	Text	Category name.
description	Text	Category description.
is_active	Number	1 if active, 0 inactive.
include_in_menu	Number	1 if included in the menu, 0 otherwise.
status	Number	0 if the category has been deleted, 1 othe
level	Number	Level in the category hierarchy.
position	Text	Position within the level.
meta_title	Text	Meta title.
meta_description	Text	Meta description.
meta_keywords	Text	Meta keywords.
url_key	Text	URL key, useful for SEO.
url_path	Text	URL prefix, useful for SEO

Metrics

Metric	Type	Description
Does not have.		

clickstream_events(_silver)

History of interactions between users and the web. The data may have come from GAU or GA4, at this level both solutions share a data model, although the origin can be distinguished using the 'origin_id' field.

Each row of the dataset represents an interaction (event in GA4) between a user and the website. This can be, for example, page-view, purchase, add-to-cart, product-view, etc.

Columns

Column	Type	Description
date	Date	Date in day format

type	Text	Type of advertising (ads, affiliates, etc.)
program_name	Text	Advertising platform.
campaign_name	Text	Campaign.
year	Number	Year (of date).
month	Number	Month (of date).
spending	Number	Spending on the campaign on the day.
clicks	Number	Number of registered clicks.
impressions	Number	Number of registered impressions.
ctr	Number	Ratio of clicks per impressions.

Metrics

Metric	Type	Description
Spending	Number	Added spending on campaigns.
Clicks	Number	Clicks added to campaigns
Impressions	Number	Impressions added in selected campaign
CTR	Number	Ratio between clicks and impressions for selected campaigns.

customer_history_events

Complete history of interactions between users and the entity, this includes all connected data sources with traceability at the user level, such as GAU, GA4, e-commerce backends, affiliates, etc.

Each row represents an interaction event between a user (including anonymous ones) and the entity. The 'subject' field allows you to distinguish the type and origin of the interaction: clickstream, order, customer, etc.

Columns

Column	Type	Description
created_at	DateTime	Event creation date.

updated_at	DateTime	Update date (equal to creation date).
ingested_at	DateTime	Binacle data ingestion date
subject	Text	Type of data.
browser_name	Text	
browser_size	Text	
browser_version	Text	
client_id	Text	Cookie the GA
customer_age_range	Number	Customer age range (coming from ba
customer_created_at	DateTime	Client creation date (backend)
customer_email	Text	Customer email hash (backend)
customer_gender	Number	Client gender (backend)
customer_group_id	Text	Client group (backend)
customer_id	Text	Unique client ID (crossover of GA and backend)
customer_is_guest	Number	1 if guest, 0 otherwise (backend)
device_category	Text	
device_data_source	Text	
device_mobile_branding	Text	
device_mobile_info	Text	
device_mobile_input_selector	Text	
device_mobile_mkt_name	Text	
device_mobile_model	Text	
ecommerce_items_quantities	List(Number)	List of product quantities per transact
ecommerce_items_revenue	List(Number)	Billing list per product per transaction
ecommerce_product_names	List(Text)	List of product names by transaction.
ecommerce_product_skus	List(Text)	List of product SKUs per transaction.
ecommerce_transaction_id	Text	Transaction ID
event_action	Text	GAU custom event action.
event_category	Text	GAU custom event category.
event_label	Text	GAU custom event label.
event_type	Text	GAU and GA4 event type.
geo_city	Text	
geo_city_id	Text	

geo_continent	Text	
geo_continent_id	Text	
geo_country	Text	
geo_country_iso_code	Text	
geo_latitude	Number	
geo_longitude	Number	
geo_metro_id	Text	
geo_network_domain	Text	
geo_network_location	Text	
geo_region	Text	
geo_region_id	Text	
geo_region_iso_code	Text	
geo_sub_continent_code	Text	
hit_action	Text	
hits	Number	Number of hits added.
order_payment_method	Text	
origin_id	Text	Origin of the data, allows you to identi GAU or GA4.
os_language	Text	
os_operating_system	Text	
os_screen_colors	Text	
os_screen_resolution	Text	
os_version	Text	
path_full_referrer	Text	
path_page_path	Text	
path_previous_page_path	Text	
path_query	Text	
path_referral_path	Text	
session_exit_page_path	Text	
session_id	Text	
session_landing_page_path	Text	
social_engagement_type	Text	
social_interaction_network	Text	

social_interaction_network_action	Text	
social_interaction_target	Text	
traffic_campaign	Text	
traffic_campaign_code	Text	
traffic_keyword	Text	
traffic_medium	Text	
traffic_social_network	Text	
traffic_source	Text	
traffic_source_medium	Text	
user_bucket	Number	
user_defined_value	Text	
user_id	Text	
user_time_on_page	Number	
user_type	Text	

Metrics

Metric	Type	Description

customer_actions

It is a model generated from the customer_history_events and provides, on the one hand, a summary of this where the interactions are summarized by row by subject, and on the other hand the integration between the different data sources:

- Interactions at the clickstream level (GAU and GA4) are summarized in one row per session that includes the main information of the session.

- Orders are summarized in one row per order, which also includes information about the associated clickstream session in which it occurred (if there is a match).

- User events (profile changes, etc.) are summarized into one event per date.

This is one of the main data models provided by Binnacle, and should be the starting point of any analysis or dashboards that aim to work on the history of user

interactions. Only if it is necessary to reach a lower level of disaggregation (for example to analyze funnels) should the*customer_history_events*.

This data model,*customer_actions*, is easier for the user, allows you to obtain responses much faster and in a much more efficient way, which results in dashboards that are much lighter and quicker to use.

For example, customer_actions is the dataset used by the Customer Explorer and RFM tools to run their segmentations and calculations.

Columns

Column	Type	Description
created_at	DateTime	Event creation date.
updated_at	DateTime	Update date (equal to creation date
origin_id	Text	Origin of the data.
type	Text	Data type (clickstream, order, custor
day_of_week	Number	Weekday.
day_of_week_label	Text	day of the week label
event_count	Number	Number of events accumulated in t activity.
hour_of_day	Number	Time of the day.
customer_id	Text	Unique customer ID (backend)
customer_age_range	Number	Customer Age Range
customer_created_at	DateTime	Client creation (record) date
customer_gender	Number	1 = male, 2 = female, 0 = unknown
customer_type	Text	registered / anonymous
order_billing_region	Text	Order billing region
order_grand_total	Number	Order billing
order_id	Text	unique order ID
order_items_qty	Number	Number of items (products) in the c
order_payment_method	Text	Order payment method
order_shipping_region	Text	Order shipping region.
order_state	Text	Grand order (ok) or cancelled.
products_added_to_cart	List(Text)	List of products added to the cart in session.

Binnacle Data
Powered by Redegal

products_added_to_cart_c	Number	Number of different products added cart in the session.
products_impressed	List(Text)	List of products seen in the session.
products_impressions_cou	Number	Number of products viewed in the s
products_ordered_categor	List(Text)	List of categories of purchased prod
products_ordered_name	List(Text)	List of purchased products.
products_ordered_qty	List(Number)	List of compared quantities of each product.
products_ordered_total	List(Number)	List of total billing per product purc
session_campaign	Text	Tracked campaign for the session
session_device_os	Text	OS of the device used.
session_device_type	Text	Type of device used.
session_geo_city	Text	City of origin of the session.
session_geo_country	Text	Country of origin of the session
session_geo_region	Text	Origin region of the session.
session_id	Text	Unique ID of the session.
session_landing	Text	Session landing page.
session_medium	Text	Session traffic source medium.
session_source	Text	Session traffic origin source.
session_user_id	Text	Client ID (cookie) of the session.

Metrics

Metric	Type	Description
Users	Number	Number of unique users (cookies).
Session Count	Number	Number of unique sessions.
Registered Users	Number	Number of registered users.
Orders Count	Number	Number of unique orders.
Avg. Sessions / User	Number	Average number of sessions for each uni user.
Conversion Rate	Number	% conversion for the period.
Revenue	Number	Billing for the period.
Customers	Number	Number of clients (users who have purch

		in the period.
Avg. Ticket	Number	Ticket medio.
Avg. Items/Order	Number	Measurement of items (different product order.
% Order / Views	Number	% of orders that have product display eve the session.
Avg. Revenue / Customer	Number	Average billing per client.
Avg. Orders / Customer	Number	Average orders per customer.
% Orders / Add to Cart	Number	% of orders that have add to cart events i session.

customer_profile

It represents a global profile of each user (client) of the entity.

This dataset summarizes the user history in a single row for each user, where it is very simple and fast to consult global metrics for each user.

For example, it is the dataset used by the 'customer explorer' to display the details of each user.

Columns

Column	Type	Description
customer_id	Text	unique customer ID
register_date	Date	Registration date in the backend.
customer_age_range	Number	Age range
customer_gender	Number	Gender. 1 = man, 2 = woman, other = unkr
first_purchase	Date	Date of first purchase.
last_purchase	Date	Date of last purchase.
total_sessions	Number	Total clickstream sessions.
total_orders	Number	Total orders in backend.
total_revenue	Number	Total billing (including canceled orders).
real_revenue	Number	Total billing (without cancellations or retu

total_revenue_canceled	Number	Total billing on canceled orders.
avg_ticket	Number	Average ticket (orders not canceled).
conversion_rate	Number	% Of conversation.
order_dates	List(Dates)	List of order dates.
time_between_orders	Number	Average time between orders (all orders).
time_to_second_order	Number	Time between the first two orders.
first_purchase_item_qty	Number	Number of different items/products in the order.
last_purchase_item_qty	Number	Number of different items/products in the order.
first_purchase_order_total	Number	Billing of the first order.
last_purchase_order_total	Number	Billing of the last order.
orders_per_day	List(Number)	Number of orders per day of the week.
sessions_per_day	List(Number)	Number of sessions per day of the week.
orders_per_hour	List(Number)	Number of orders per time of day.
sessions_per_hour	List(Number)	Number of sessions per time of day.

Metrics

Metric	Type	Description