

Complexity made simple.

Funnel Analysis



Funnel Analysis with hadoop

Navigating to customer satisfaction

Over the last few years transactions through the web have increased considerably. Monitoring people's moves on a particular web side has become a critical component for sales, marketing and product support strategies.

A conversion funnel is a designated path of steps visitors follow on a website which leads towards conversion (sales, transaction). These paths are usually monitored in order to understand and consequently optimize the way visitors engage with a site. Such knowledge can be used to improve your website usability and increase conversion (i.e. increase sales). However, a website conversion analysis often requires to operate huge amount of data (server logs). For this reason IMPAQ decided to find a solution that can use Apache™ Hadoop® (a software framework for storage and large scale processing of big data sets). It allows a full and thorough analysis of how your customers navigate.

Benefits for business

- ▶ Tracking the website is helpful as it reveals the interests of your target audience. It tells you specifically what certain groups of visitors are interested in.
- ▶ Funnel Analysis can improve website usability and consequently increase conversion.
- ▶ In a simple way it can increase sales of your products.
- ▶ Monitoring visits on your website also allows you to measure the effectiveness of advertising in general or a recent advertising campaign.
- ▶ It also accurately shows visitors' behavior on the website.
- ▶ It enables you to understand and respond better to customers' needs and can be helpful to indicate a website's potential audience.

Popular funnel analysis problems solved by IMPAQ (A brief comparison with Google Analytics)

- ▶ Our solution allows for retrospective analysis.
- ▶ It is possible to cross-compare profile reports through our interface.
- ▶ It is possible to save data through our interface.
- ▶ In our solution a badly implemented filter does not cause irretrievable loss of data.
- ▶ In our solution implementing the filter does not cause loss of data not covered by the filter.
- ▶ Data in Google Analytics is owned by Google.

Exemplary applications:

- ▶ What the common paths pointing to a given page are.
- ▶ Where along the funnel users frequently drop off.
- ▶ At what time the products are visited most often.
- ▶ How good the acquisition strategy is. (Traffic Sources Report)
- ▶ What the most probable pages that one goes to after leaving a particular one are.
- ▶ How strongly do visitors orbit the website.

Why Big Data?

Big data is a technology that manages voluminous amount of unstructured and semi-structured data. Due to its size and semi-structured nature, it is inappropriate for relational databases to analyze.

A website conversion analysis requires to operate on Big Data. That's why we found a solution concerning funnel analysis that can be implemented in Apache Hadoop – the platform that enables you to store and process big data a low cost and on huge scale.

Case study of exemplary application

Transition matrix

		Category of previous viewing							
Category of current viewing	Category	Home	Account	Category	Produkt	Information	Shop. C.	Order	Exit
	Home	21	4	2	1	11	3	0	10
	Account	3	59	0	1	2	14	0	1
	Category	15	2	60	25	13	5	0	22
	Produkt	2	5	21	44	13	6	0	6
	Information	26	17	7	17	44	14	80	61
	Shop. cart	2	9	1	3	4	46	20	1
	Order	0	0	0	0	0	10	0	0
	Exit	31	4	9	9	13	1	0	0
	Marginal	5	6	33	16	20	7	1	12
initial prob.	15	3	16	5	60	2	0	0	

The table shows visitors' conversion paths expressed as a percentage (%). Column names represent pages of previous viewing (from which page visitor came to the current page) whereas row names represent pages of current viewing (where visitors are now).

What the transition matrix includes? (Examples)

Let's look at a column named 'Home'. Values in the table above show that among the visitors who are on the page 'Home' (name of first column), 21% reload the page, 3% go to 'Account', 15% go to 'Category', 2% go to 'Products', etc. The sum of all the values in one column equals 100% (21% + 3% + ... + 31% = 100%).

Another example: The percentage of visitors whose path of visits started from the page 'Category' (the name of column) to the page 'Shopping Cart' (the row is located in the 'Category' column) is 1%.

Look at two rows below the main table: it proves that people start the journey with the information page (60%), homepage (15%) or category page (16%).

What can be concluded from the sample data?

Example 1: Most of the values written in the row 'Order' equal to 0. It means that the only way to get to an order page is from the shopping cart (10%). Maybe we should remodel our website to allow entry to an 'Order' page from others pages – it is an effective way to optimize the website and consequently increase sales of the products.

Example 2: Another way to optimize the website determined by analyzing the transition matrix is to get the information about the most probable pages a person goes to after leaving a particular one. It may suggest, for example, a place where the hyperlink should be created.

Visitors to web site



130 visitors complete goal

Factors expanding the analyzed conversion funnel

- Offer tailored to potential customers' needs
Optimized website traffic sources and appropriate marketing message. Such customized solution helps reduce website dropoff rate.
- Unique offer value
Well designed marketing tools (placed in top website traffic spots), explaining, why the customer should choose a particular product over a competitive one.
- User behavior drivers
Funnel analysis information presentation. Customers should be able to find all the required information easily. Access to special offers, promotions, etc.
- Message clarity
Graphics and text should be placed in appropriate spot

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