

# Attentio Brand Maps

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## Abstract

Attentio Brand Maps (patent pending) automatically measure and visualise the evolution of perceived associations or relatedness between “entities” and “topics”. Entities can be brands, products, organisations, people, etc., while topics can be, for example, events or features. Attentio Brand Maps (ABMs) can be generated for any type of textual data having a temporal aspect (timestamps): blogs, forums, news, scientific articles, patent collections, corporate data, etc. The result is a temporal visualisation of large-scale data sets, facilitating human pattern detection. Part of the commercial value of ABMs lies in the possibility to identify brands and topics that are discussed online together, as well as their evolution, and to identify why certain brands and topics are related.

## Attentio Brand Maps

### A word about Attentio

Founded in Brussels in 2004 by Simon McDermott and Per Siljbergssåsen, (who previously co-founded Kelkoo), Attentio SA/NV is a fast growing online market intelligence company. In order to provide comprehensive real-time market insight into word-of-mouth conversations, consumer behaviour and attitudes, Attentio monitors and analyses traditional and social media including blogs, discussion forums, news, video logs (such as YouTube), and microblogging platforms like Twitter. As a European pioneer, Attentio provides the Brand Dashboard™, a web application which helps marketers and public relations professionals to benchmark a portfolio of selected products or brands. The Dashboard provides the fastest and easiest way to monitor all relevant sources. Attentio products allow for local market and language differentiation. Currently, Attentio analyses 25 European languages and is adding more. Media attention can be studied over time, by source, language and geographical region. Besides the Dashboard, Attentio also provides periodical reports to customers. Attentio clients include world leading brands as well as many of the world’s largest advertising, PR and

market research agencies. Attentio’s vision and business idea is that “Conversational marketing”, monitoring and interacting with social media, will become an integral part of companies’ communication strategies. The mission is to become and remain the European leader with a global presence in providing fully automated real-time social media brand monitoring.

### Brand Maps

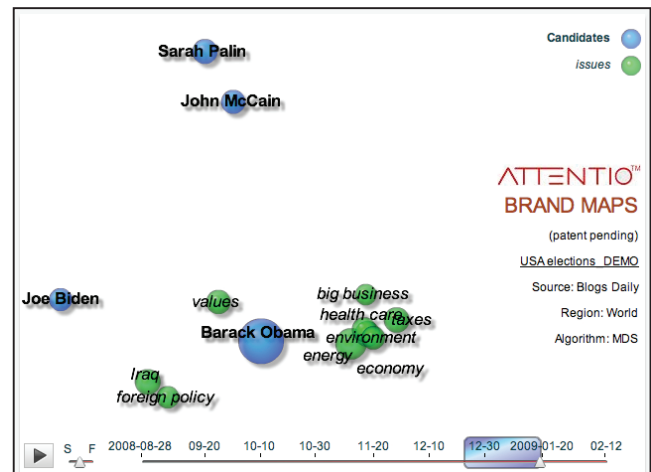


Figure 1. Brand map related to USA election issues.

**Commercial value.** ABMs provide a view of a brand’s conversational universe and help brand owners plan and measure marketing activity. They allow to identify brands and topics that are discussed online together, as well as their evolution, and to identify why certain brands and topics are related. This is important since brand value and future sales are strongly impacted by customer’s and consumer’s perceptions. Is the perception of a brand in line with the brand owners’ goals? What do consumers see as competing, alternative products? Feedback from ABMs provides a basis to adjust and improve marketing campaigns, to maintain brand reputation, discover new insights and emerging trends, and to engage in conversational/word-of-mouth marketing. Market research companies have traditionally relied a lot on manual collation of this type of information via focus groups and consumer sampling. Attentio spots existing, organic

conversations by monitoring online media and then charts the results. It's automatic and it's fast and marketers and brand owners can get the results at the touch of a button. This as a great advantage, for example, over commissioning a research report and receiving the results some months after a campaign may have ended. Target audiences are within PR, market research departments and/or organisations, business intelligence and management, strategic departments, brand and reputation management, political organisations, government, etc.

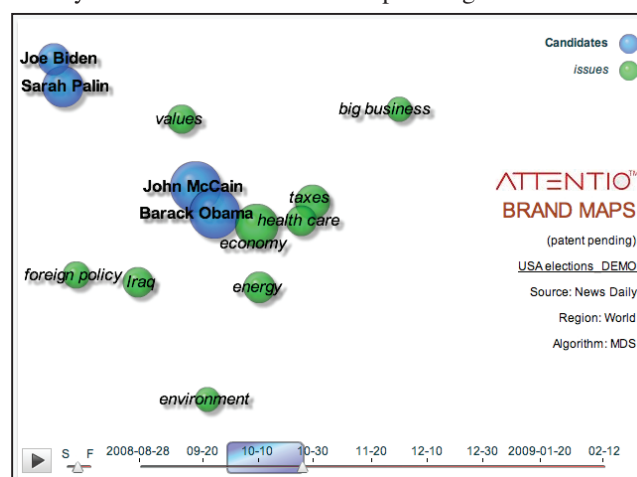
**Input.** Per source and per language or region, the input required to compute an ABM is a square, symmetric "co-references matrix" containing "buzz" and co-reference numbers between all possible pairs of concepts (e.g., between brands-topics, topics-topics and brands-brands). A concept can be defined by a complex query, e.g., "Barack Obama" OR (obama AND (president OR senator)), and the (online) "buzz" is the number of articles satisfying the query. The number of co-references is the number of documents that are related to a pair of concepts. Appropriate pairwise similarities are computed from these buzz and co-reference values.

**Algorithms.** The positions (coordinates) of concepts on an ABM can be computed by various algorithms, offering complementary insights. Currently, three existing algorithms are in use: multidimensional scaling (MDS), principal component analysis (PCA), and correspondence analysis (CA). MDS positions the brands and topics such that the pairwise distances approximate the buzz-based distances as precisely as possible (Borg and Groenen, 2005). The resulting coordinates are optimal approximations in mathematical sense. Hence, highly co-referenced concepts in general are placed close to each other on an MDS ABM. PCA gives the dimensions (axes) that explain most of the variance in the data by calculating the eigenvalue decomposition of the covariance matrix. CA is actually a weighted form of PCA that is appropriate for such frequency data of 2 categorical variables (Le Roux and Rouanet, 2005).

**Stability.** In order to ensure stability of the dynamic charts over time, consecutive time frames are mapped onto each other in a mathematical optimal way. Depending on the algorithm used to compute the brand map, this optimal mapping may be achieved by different algorithms.

**Visualisation.** The user interface allows to select the algorithm, various sources (blogs, forums, news, ...) and the region or language of interest. Concept representations (bubbles) are auto-scaled on the charts based on a function of the corresponding buzz numbers. The user can select one or more brands or topics, get their buzz and co-reference values, perform a search for all related articles ranked by different criteria, interact with the time slider to go back and forth in time, or start the automatic animation. Over time, the brands and topics visually move on the chart. Finally, the user can also save brand maps as JPEG images or get all underlying data in the form of a .CSV file.

**Examples.** Figure 1 shows an example brand map around the former US Presidential Candidates and blog conversations, from January 19<sup>th</sup> 2009. In this case the candidates - Obama, Biden, Palin, McCain - are the "brands". Online mentions of those personalities were monitored and then cross-referenced against election hot topics like Iraq, the environment, healthcare and foreign policy. The size of the 'brand bubbles' indicates the number of conversations mentioning that brand or candidate. So, on this particular day Barack Obama of course had the greatest share-of-voice or "buzz". How close the brand bubbles are to the topic bubbles is how closely they are linked or mentioned in conjunction with each other. In the demonstration map McCain and Palin are still close together, but far away from the important issues. It was different, however, at the end of October 2008. Figure 2 shows that at that time Obama and McCain were closely associated because of the upcoming elections.



**Figure 2. Brand map related to election issues at the end of October 2008.**

**Coming up.** Soon, the color of concept representations will illustrate the overall sentiment value, as computed by Attentio's automated, multi-lingual sentiment analysis algorithms. Indeed, detecting positive and negative attitudes early is an essential part of active brand reputation management. Concepts will also be traceable on the charts by visualising the track they follow over time. New concepts will be added to the charts by automatic topic detection and/or named entity recognition techniques, whereas other concepts may disappear from the chart when they become less interesting.

## References

- Borg, I., and Groenen, P. J. F. 2005. *Modern Multidimensional Scaling. Theory and Applications*. Springer Series in Statistics. ISBN: 978-0-387-25150-9
- Le Roux, B., and Rouanet, H. 2005. *Geometric Data Analysis. From Correspondence Analysis to Structured Data Analysis*. ISBN: 978-1-4020-2235-7