

# A FRAMEWORK OF WEB ANALYTICS

## *Deploying the Emergent Knowledge of Customers to Leverage Competitive Advantage*

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**Abstract:** Internet has changed competition, shifting products, supply-chains and even markets. Its democratization gives power to the consumers what could be considered a threat to corporations. Although, the emergent knowledge derived from digital media can contribute to personalized services, innovation and communication with consumers in a real-time basis. Based on multiple case studies, this paper aims to develop a comprehensive application of web analytics to achieve these business goals and thus support the competitive advantage.

## 1 INTRODUCTION

When Internet business applications appeared on the 90s, they caused a significant impact on the economy. Industries intend to manage their processes to fit consumer needs, this flexibility imposes a new dynamic to the economy. Nowadays, it is possible the fulfilment of specific niches considered unviable in traditional economies of scale (Anderson, 2006).

The use of emergent knowledge generated by the interaction of the consumer with the online presence (e.g. websites, apps, social media) can be a strategic weapon to gain competitive advantage (Gibbert et al., 2002). Web analytics (WA) helps companies to acquire this knowledge through the measurement, collection, analysis and reporting of Internet data (Web Analytics Association, 2010).

Although, this promise is not being successfully delivered, as the digital world is developing faster than the capacity to measure it (Bughin et al., 2008).

There is a lot of WA issues cited in the literature:

- Online metrics not aligned with the business strategy (Kaushik, 2009).
- Technical analysis of click stream on the websites not considering the customer as the center of the analyses (Kaushik, 2009; Arun et al., 2006).
- A lot of web metrics inflating reports increasing the struggle to achieve business insights (Stern, 2010), (Arun et al., 2006).
- Lack of qualitative data resulting in difficulties to take decisions (Bughin et al., 2008; Kaushik, 2009);
- The necessity of integration of online and offline data to improve results of corporate endeavors as campaigns and new products (Bughin et al., 2008; Shankar & Yadav, 2010).

To address these points, this study aims to develop a comprehensive approach of web analytics (WA). The first step was a literature review of WA as well as related concepts. Multiple case studies

performed in different industries as automotive, fashion and beverages contributed to analyze main topics of this review. The result of this research was a framework of WA to drive future analytical endeavors.

## 2 LITTERARY REVIEW

### 2.1 Internet as a Source of Competitive Advantage

Porter (1979) described five forces that shape the competition, as well as, the profit expectation in a determinate industry, a group of companies delivering similar products or services. For a company achieve a profit higher than the industry average, it must have a competitive advantage. This advantage can be translated in three generic strategies (Porter, 1996): cost leadership, differentiation, or a combination of the two cited strategies in a specific market (segmentation).

Despite this traditional view of strategy, the technology is changing some paradigms. Some authors believe it is possible to offer a wide range of segmented products in large scale; this mass customization concept challenges the trade-off argument using innovative and flexible production process (Silveira et al., 2001).

The Internet is the best platform to integrate the value system (Porter, 2001), its application performs a vital role to deploy a unique and strategic position (Oliveira, 2004). Beyond this contribution, some authors argue the Internet performs a revolutionary role, supporting a New Economy (Tapscott, 2001). The 80/20 rule - 80% of the sales come from 20% of products sold - it is not valid anymore for many markets. The product sales curve is shifting to a long tail design, the head of the curve is shorter, as the middle and the tail (less sold products) becoming more representative (Anderson, 2006).

In this segmented economy, understanding the consumer is crucial. The online presence distributed in websites, social networks, forums and blogs allow users explicitly demonstrate their opinion. This emergent knowledge encourages companies to develop new strategies based on customer competence (Pralhad & Ramaswamy, 2000). WA is an efficient tool to collect and consolidate this knowledge. In a comprehensive approach, it can integrate the knowledge about the consumer detected in sales history and click stream behavior with the knowledge produced by the consumer in blog postings and forms fulfillment.

The more flexible is the value system, the higher is the potential of the Internet to impact the competition. Services industries, especially knowledge based industries are more likely to conduct disruptive changes introduced by new technologies (Duhan et al., 2001), but companies of traditional sectors (e.g. Logistics and consumer products) can also use the Internet to build competitive advantages (Oliveira, 2004). This potential is due to improvements in complementary services (Lovelock & Wirtz, 2006) and redesign of system value that could assume new typologies as Net Values (Bovet & Marta, 2001).

### 2.2 WA Definition

According to Web Analytics Association (2010): *“WA is the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimizing Web usage”*

For Waisberg & Kaushik, 2009: *“Web Analytics can be defined as the act of increasing a website’s persuasion and relevancy to achieve higher conversion rate”*. This conversion rate is the website capacity to convert visits in business goals as sells and leads.

Both definitions empathize the WA role to improve usability performance, focusing on the website interactions or online campaigns to increase the audience, but they do not mention the WA contribution the synergy between offline and online initiatives. This is a relevant gap, because offline sales driven by online actions plus online sales driven by offline efforts are representative (Bughin et al., 2008).

The WA industry started in the middle 90s with the founding of companies such as Webtrends, Omniture and NetGenesis. These companies developed software to collect and analyze the user click stream (Web Analytics Association, 2010). Perhaps, this beginning explains the focus limited to quantitative data generated by websites (Arun et al., 2006).

This qualitative data can be collect in interviews, focus groups or any interaction that allow the researcher to explore the consumer reasons. It is being usual to analyze blog posts, where users talk about products, services and brands. The buzz monitoring is a way to explore the consumer’s opinions to reach a deep understanding of the customer and optimize results (Sterne, 2010).

Some concepts can deeper the WA impacts on business:

- Web mining: the application of data mining

techniques to discover costumers patterns (Zhang & Segall, 2010);

- Web Semantics: it is a knowledge representation based on some kind of ontology with a fixed vocabulary and typed relations used to analyze web 2.0 data (Berendt, Hotho & Stumme, 2010);
- Web Personalization: It utilizes web data generate through user interactions with the site in order to deliver a personalized webpage (Eirinaki & Vazirgiannis, 2003).

Concepts as competitive intelligence (Tarapanoff 2004), customer knowledge management (Gibbert et al., 2002) and the cooption of customer competence (Pralhad & Ramaswamy, 2000) have not directed relation with WA, but they can contribute to extend its boundaries, because they can increase the value of WA to strategic planning.

### 3 METHODOLOGY

In order to understand the application of WA concepts, this research analyzed three case studies representing different industries: automotive, beverage and fashion products. The companies' selection followed the following criteria:

- To be a significant player in its industry;
- To compete in global markets;
- To invest high amounts on online presence;
- To conduct WA studies in some instance.

These case studies must contribute to discuss the following topics cited on the theory revision:

- Usability;
- Conversion of visits in business actions;
- Buzz monitoring;
- Competitive intelligence;
- Marketing campaigns optimization;
- Integration of online and offline initiatives
- Results generated through online actions (eg.: sales, forms filled, leads).

A semi-structured questionnaire (Yin, 1991) was elaborated to cover these topics. Following the research protocol, this questionnaire was applied in interviews with business executives in charge of online efforts and technical professionals that developed the online presence.

Despite the fact of only one case covered all the topics, the research application showed which topics are more valued by the business executives.

These analyses resulted on a WA framework to support future studies in this area.

## 4 CASE STUDIES

As a comprehensive approach of WA is not usual for online efforts, the combination of the three cases was crucial to produce a complete vision of WA concepts.

Competitive intelligence and usability were found in all cases. Analyses of conversion were mentioned in two cases and the other themes were found only in one case.

### 4.1 Automotive Industry

The company analyzed on this case used market researches to measure the audience on the Internet of the whole market, as well as, the audience of each concurrent website. The metrics monitored were unique visitors, average time spent on site, visits per person and conversion of visits to leads.

The company noticed through tendencies analyzes the main player's audience was excessively dependent on campaign investments, so it focused on retain the visitors through differentiate tactics as offering free MP3 downloads of new bands and providing services to stimulate the returning visits. With these consistent tactics, in 2008, the company was the first on returning visits, the average consumer visited the website 1,5 times in a month the second manufacturer reached 1,4. The tendency of the unique visitors of each player's website pointed the company analyzed as the leader on this metric (figure 1).

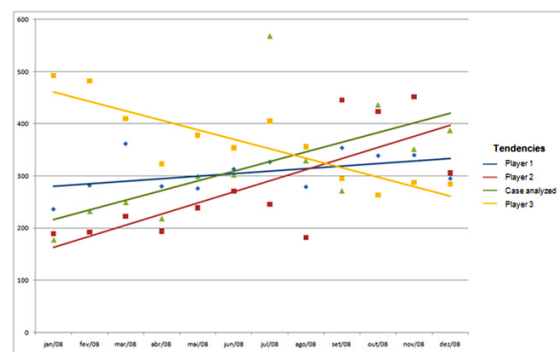


Figure 1: Linear tendencies of unique visitors per car manufacturer.

Other key metric was the perceptual of visitors that accessed the car configuration feature, with this metric the company could evaluate the performance of each player and take insights to improve its efficiency.

The automotive company analyzed the offers of each manufacturer, so it could improve their own

offers improving the conversion on the website. In the last quarter of 2008, 47% of the visitors configured a car on the website, the second best conversion on the market.

This case was limited its analyses to market researches, because of a poor implementation of traffic monitoring tools on the website, but this limited approach, or externally focused approach, brought a competitive understanding of the website. The online presence is constantly improving based on a market benchmark.

## 4.2 Beverage Industry

The beverage company planned efforts to take advantage of the strategic opportunity to increase the relationship with the consumer on the online presence, promoting a link with the consumer that was limited to the retail chain.

The company used this potential in a broad range of online initiatives: the company gave support to local events promoted by the brand dividing the institutional website in regional areas; a lot of co-branded actions develop with content portals to approximate the relationship with segmented publics; online market campaigns associated with offline efforts; apps on social networks to promote the interaction beyond the website.

It was a considerable challenge to monitor this complex online presence in order to optimize the online investments, to do so, the company implemented a WA approach to monitor the different actions on the Internet.

The competitive intelligence was the cornerstone of the WA plan. Through the parameters provided by market researches of audience, the company refined its business goals on the Internet and defined marks for relevant metrics as unique visitors, time spent on site and returning visits, but additionally to these metrics, the company needed to understand the reasons behind the performance of the other player's websites. For this reason, qualitative studies of the concurrent sites were elaborated to understand the complete scenario, these studies generated a key performance indicator (KPI) called "maturity of online presence".

Other relevant issue was the optimization of online campaigns, the cost of visit generated on the website was a metric to verify the efficiency of the media vehicles. In only three months, focusing on this metric the company reduced 50% the cost per visit.

The usability of the site was studied supported by web traffics tools as Google Analytics. A deep

analyze allowed the website managers to discover some bottlenecks on the navigation. Despite the fact of the website had attractive features as games and blogs, the user hardly perceive these features on the home page, because of the great number of attractions published. The web designers produced a set of landing pages identified with the source of the visit to handle this problem, for example, a user came from Google Search that wrote the keyword "games" was direct to game page.

The integration of online and offline might be the most valuable analyze for the company. When launching a new flavor of a beverage, the company could observe the reactions of the consumer real time through the social media and results of online campaign. The company watched quickly which kind of consumers accepted the new flavor, after that, it distributed the offline efforts as point of sales promotions to the regions more likely to buy the product.

The company also monitored the buzz, opinions of the consumers posted on social media. Qualitative researches based on a sample of consumers' blog posts increased the understanding about the brand attributes and consumer behavior.

Based on the cited WA applications, it is possible to verify this company had used its online presence as a competitive tool.

## 4.3 Fashion Products

The company analyzed is a Brazilian shoes producer which brand is recognized worldwide. The institutional website is accessed by people from different countries, and there are a lot of communities dedicated to its brand.

Surprisingly, the positive image and global awareness of the brand brought some fundamental issues to the marketing area: how to measure this affiliation to the brand, how to measure the satisfaction of different publics with the brand products and at least, how to generate value of this knowledge.

The first question was about the social media. There are millions of consumers spread in thousands of communities of the main social networks as Facebook and Orkut. The first challenge is to estimate the total amount of users on these communities, because the total of community is impossible to be monitored manually. Based on the long tail concept (Anderson, 2006) and using logarithm curve to estimate the total of users per community, it was possible to summarize the community users. These users were divided in three

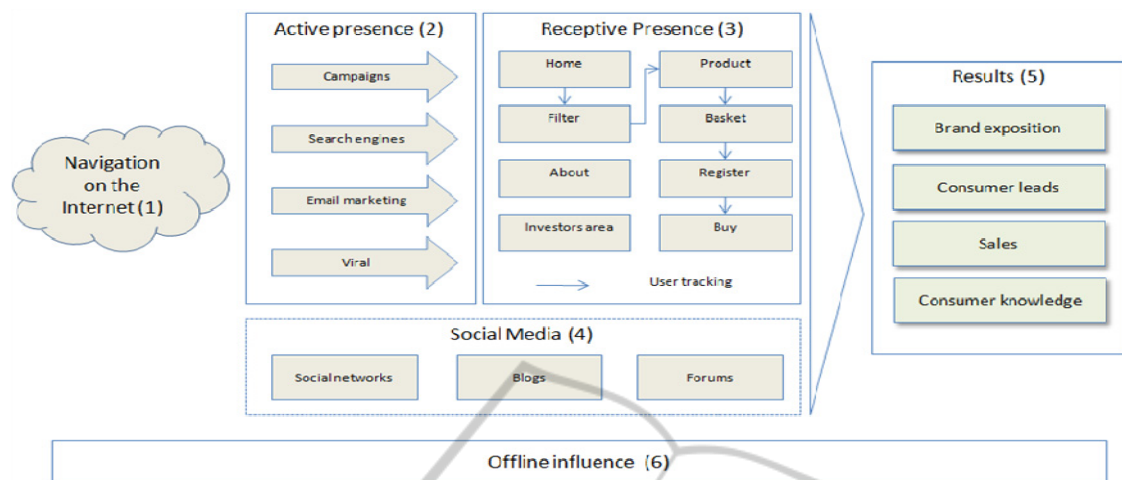


Figure 2: Framework of Web Analytics.

categories: members, consumers and fanatics.

After count the total of members, the marketing managers would like to understand what their consumers were talking about on the brand communities. As the previous case, they used qualitative researches based on buzz monitoring to capture the consumers expectation.

Complementary, it was implemented a tool on the website to report the web usage. The nationality of the different visitors was grouped to give a clear scenario of the site usability for the foreign public, the majority on the website. Doing so the analysts had being astonished with some insights.

The audience of some countries as Philippines was higher than other established markets. It showed some fashion trends the marketing team does not know.

People who do not speak Latin languages stayed less than 30 sec on the site and 85% gave up on the first page. This problem was caused by a lack of visibility of the idiom option button. When it was fixed, the time spent for these publics was normalized.

## 5 A FRAMEWORK FOR WA

### 5.1 Premises

Analysing the cases, there are some contributions to the framework development, the case insights aligned with the literature review produced the following premises to the framework:

- It is necessary to trace a benchmark. Among the case studies, companies with a benchmark optimized their online presence to get a high

level performance.

- The relationship with the client must be analyzed in each touch point with the consumer. The beverage company was the only case that implemented a full vision of the consumers, consequently get more benefits from WA than the other companies.
- The online and offline communication must be considered as part of the same customer relationship as showed in the beverage and fashion cases.
- The WA must extrapolate the quantitative data. The cases showed that researches based on the consumers posts are sources of qualitative information.

### 5.2 Components

These premises were adopted to create a WA framework with six components (figure 2). Each component supports the understanding of the consumer's relationship (figure 2).

Component 1 – Navigation on the Internet: Knowing the consumers navigation behaviors must become closer relationship between the consumer and the brand.

Component 2 – Active presence: The efforts to drive the user from the Internet navigation to the company website must be analyzed from the campaign reach to the efficiency of each channel.

Component 3 - Receptive presence: when the user entered the company website, the conversion to the result must be deeply analyzed.

Component 4 – Social media: The social medias (social networks, blogs and forums) are the main source of customer knowledge. Qualitative analyzes

as mind maps of market themes are essential to understand the consumers' point of view.

Component 5 –The online results must be set based on the strategic vision.

Component 6 – Online/Offline influence – the WA analyzes must support the total communication mix signaling the impacts of online and offline efforts.

These components must be used together to make sense.

The most relevant contribution of the WA framework is to set parameters for analyzes definition. Although it is not a complete guideline, its use may ease the link of the WA analyzes with the strategic discussions.

## 6 CONCLUSIONS

The literature review listed some problems related to WA. Lack of alignment with business strategy, limitation to quantitative data, and focus on technical report among other gaps undermine the full potential of WA.

The cases showed this reality; only one company explored all the WA dimensions cited in the literature. This problem occurs because of an exaggerated focus on tools and technologies and fewer efforts on conceptualization of the analyzes.

The intention of this study is to help the analysts to set relevant analyzes and to keep on tracking of the strategic view, but do not close the discussion about the possibilities of WA. Future studies are necessary to verify if the WA framework is a useful tool to configure the right analyzes.necessary to verify if the WA framework is a useful tool to configure the right analyzes.

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