A FRAMEWORK OF WEB ANALYTICS AND ITS IMPACTS ON COMPETITIVE ADVANTAGE BASED ON AUTOMOTIVE, FASHION AND BEVERAGE CASE STUDIES

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ABSTRACT

Internet has changed the competition, shifting products, supply-chains and even markets. Its dissemination gives more power to the consumers what could be considered a threat to corporations. However, the emergent knowledge derived from the interactions of consumers with the digital media is an opportunity to deliver personalized services, to foster innovation and to promote the communication with the consumer in a real time basis. Based on multiple case studies, this paper aims to design a comprehensive approach of web analytics to achieve these business goals and consequently leverage the competitive advantage.

Keywords: Web analytics, Strategy, E-business

1. INTRODUCTION

When Internet business applications appeared on the 90s, they caused a great impact on the economy. Some markets changed completely as the music industry, where the consumer downloads the songs through the websites according to his needs without the necessity of a physical media as a CDROM. This flexibility imposes a new dynamic to the economy allowing the fulfilment of specific niches considered unviable in economies of scale (Anderson, 2006).

Companies can take benefits of a direct link with the consumer allowed by digital channels, improving the quality of complementary services and the activities of research and development of new products based on a best understanding of the consumers. The use of emergent knowledge generated by the interaction of consumers with the online presence (eg. websites, apps, social media) can be an strategic weapon to achieve competitive advantage (Gibbert et al., 2002). Web analytics (WA) helps companies to collect this knowledge through the measurement, collection, analysis and reporting of Internet data (Web Analytics Association, 2010).

However, 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 on the literature:

- Online metrics not aligned with the business strategy (Kaushik, 2009)
- The former tools in WA generated only technical analysis of click stream on the websites not considering the customer as the center of the analysis (Kaushik, 2009; Sen et al., 2006)
- A lot of web metrics inflating reports increasing the difficulty to find business insights (Stern, 2010), (Sen et al., 2006)
- Lack of qualitative data resulting in poor context information 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).

In order to address these points, this study aims to produce a comprehensive approach of webanalytics (WA) based on all the touch points of the user with the company’s online presence. The first step of the study was a literature review of WA as well as related concepts: competitive intelligence, web semantics, web mining, web personalization, buzz monitoring, customer relationship management (CRM) and customer knowledge management (CKM). Based on the main topics of this review, a multiple case study was performed in different industries: automotive, fashion and beverages. The result of this research was a framework of WA to drive future analytical endeavors.
2. LITERARY 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 achieves higher profits than the average of the industry, it must have a competitive advantage. This advantage can be translated in three generic strategies (Porter, 1996): cost leadership - an innovative process to make the same products as the other players but consuming fewer resources; differentiation – production of differentiated product or service that allows a premium price; or a combination of the two cited strategies in a specific market (segmentation).

Porter (1996) argued the difficulty of conduct more than one generic strategy, because the companies must assume tradeoffs, defining in which activities they must be outstanding. According to this theory, the option for more than one generic strategy may imply in a risk of not being competitive in neither of the chosen.

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 represents an evolution to corporate competition. It is considered the best platform to integrate the value system (Porter, 2001); its application performs an important role to deploy a unique strategic position (Oliveira, 2004). Beyond this contribution, some authors argue the Internet performs a revolutionary role, supporting a New Economy, shifting from economies of scale to economies of scope (Tapscott, 2001). The 80/20 rule applied to marketing, which states the 80% of the sales come from 20% of the products sold it is not valid anymore for many markets. The product sales curve is shifting for a long tail design, the head of the curve is shorter as the middle and the tail (less sold products) becoming more representative (Figure 1) (Anderson, 2006).

In this segmented economy, understanding the consumer is pretty important. The online presence distributed in websites, social networks, forums and blogs allow the user explicitly demonstrate their opinion. This emergent knowledge encourages companies to develop new strategies based on customer competence (Prahalad & 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 fulfilment.

The more flexible is the value system 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 (eg. logistics and consumer products) can also use the Internet to build competitive advantages (Oliveira, 2004). This potential is due to improvements on 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 can be understood as the website capacity to convert visits in business goals as sells and leads (figure 2).

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 activities together represented an amount similar to direct online sales (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 (Sen et al., 2006) despite the fact of qualitative data being helpful to understand the user behavior (Kaushik, 2009).
This qualitative data can be collected in interviews, focus groups or any interaction that allows the researcher to explore the consumer reasons. It is 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 about offline and online endeavors to reach a deep understanding of the customer and optimize results (Sterne, 2010).

Some techniques can deepen the WA impacts on business. Although there are successful cases of these tools, the expectative is they become more relevant as they get more mature and more accessible to the companies:

- Web mining: the application of data mining techniques to discover patterns (Zhang & Segall, 2010). For business purposes, there is a special interest in discover customer usage patterns.
- Web Semantics: it is a knowledge representation based on some kind of ontology with a fixed vocabulary and typed relations. It can be useful to create value to web 2.0 data (Berendt, Hotho & Stumme, 2010).
- Web Personalization: A usage-based Web personalization system utilizes web data generate through user interactions with the site in order to optimize the online presence (Eirinaki & Vazirgiannis, 2003).

Some concepts have not directed relation with WA, but they can contribute to extending its boundaries, because they can increase the value of WA to strategic planning. Three of these concepts deserve special attention: competitive intelligence, customer knowledge management and the cooption of customer competence.

Competitive intelligence (Tarapanoff 2004) is a classic strategic tool strongly impacted by the web data usage (WebAnalytics Association, 2008). The companies can use rivals site monitoring to trace their movements; they can also use market researches that report the consumer behaviors in these sites.

Despite the knowledge about the consumer consolidated through customer relationship management (CRM), the CKM focus on the knowledge created by the consumer. This knowledge is important to develop new products and to create strategic value. It is a promissory study issue how to handle web 2.0 data to produce this kind of knowledge (Gibbert et al., 2002).

The cooption of customer competence is the source of value creation (Prahalad & Ramaswamy, 2000). The advent of web 2.0 empowers this concept as the user’s opinions are open on the social networks, blogs and forums.

3. METHODOLOGY

In order to understand the application of WA concepts, three case studies will be analyzed representing different industries: automotive, beverage and fashion products. All the companies compete on the Brazilian market, where the analyses took place. Two are multinational companies, and two have Brazilian owners. The three companies are big players in their industries.

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 (e.g.: 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.

The first professional to be contacted in each company was the responsible by the online projects. This executive indicated a list of other people to be interviewed. The majority of professionals interviewed works on marketing and TI departments, they were chosen based on the responsibility and knowledge related to the online projects.

The case studies were based on multiple sources of information in order to validate the evidences. Besides the interviews, internal reports and dashboards were analyzed, as well as, secondary information like: market researches of online audience (e.g.: Alexa), synthesis of website functionalities based on site visiting; verification of the website code to assess the web analytics tool implementation; posts about the company published on social media.
Despite the fact of only one case covered all the topics, the research application showed which topics are more valued by the business executives.

The conclusion of these analyses resulted on the WA framework to support future studies on this area.

4. CASE STUDIES
As a comprehensive approach of WA is not usual on online efforts, the combination of the three cases was crucial to produce a complete vision of WA concepts (table 1).

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

4.1 Automotive Industry
The company analyzed on this study 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 3).

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.

Analyzing the offers of each manufacturer, the company 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.

The company 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 impact of Internet on consumer products industries as beverage is not clear in a first glance. Different from the automotive industry where the consumer researches on the Internet before a buying, the decision of buying a beverage is influenced by the classic marketing mix compound by 4 Ps: Point of sale, Promotion, Price and Product. So why the online presence matters on this case? The Internet is the most powerful tool to integrate the value chain (Porter, 2001), the beverage companies can increase the relationship with the consumer on the online presence, promoting a link with the consumer that was limited to the retail chain decades ago. This link contributes to the branding and limits the dependency of the point of sale to be in touch with the consumers.

The company analyzed used this potential in a broad range of online initiatives:

- The institutional website with corporate information associated with diverse branded sites for each product of the company
- The company produced games downloadable on the website
- The website was segmented in regional areas to give support to local events promoted by the brand
- A lot of co-branded actions were developed with content portals to approximate the relationship with specific publics
- Online market campaigns associated with offline efforts (a merchandising insertion in a TV program) increased expressively the website audience
- Apps on social networks to promote the interaction beyond the website

It was a great 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 and comparing with other players, the company refined its business goals on the Internet and set 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 other player’s websites. For this reason, qualitative studies of the concurrent sites were elaborated to understand the complete scenario, theses studies generated a key performance indicator (KPI) called “maturity of online presence”.

Integrated with this key metric, the company measured other KPI called “repercussion” based on the audience and amount of buzz on social media of each player. The combination of these KPIs produced a matrix of the players’ online position on the beverage Brazilian market.

Other important issue was the optimization of online campaigns, as the goal of the company was to keep the attention of consumers; so the number of visitors of the site associated with the time spent was set as a KPI. The cost of the visit generated on the website was a metric to verify the efficiency of each media portal. This metric was used on media trades and to increase the performance of campaigns. 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 like Google Analytics. Deep analyzes allowed the website mangers to discover some bottlenecks on the navigation. Despite the fact of the website had interesting features as games and blogs, the user had difficult to perceive these features on the home page, because of the great number of attractions published. To handle this problem, the web designers produced a set of landing pages indentified with the source of the visit, 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 the beverage, the company could observe the reactions of the consumer real time through the social media and results of the online campaign. The company watched quickly which kind of consumers accepted the new flavor and 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. Based on a sample of blog posts, qualitative researches designed a mind map with the main categories cited by the consumers to increase the understanding about the brand attributes and consumer behavior.

The buzz monitor also supported crises management, as communication actions to explain the logotype changing. Before the new logotype of the multinational brand came to Brazil, some local designers claimed the brand had a poor personality because its design was different for each flavor of the product. After monitoring the bloggers with more influence among the consumers, the company’s marketing professional invited these bloggers for a new brand seminar. In this event, the marketers explained the concept of the brand and they listened the different opinions. The result of this interaction was a more receptive environment for the new brand launching.

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 company which brand is recognized worldwide. Its 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 important 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 capitalize this knowledge.

The first question was related with 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 the logarithm curve to estimate the total of users per community, it was possible to summarize the community users (figure 4). These users were divided into three categories:

- Member: a simple community member which like to associate the brand with his profile without being and activate member
- Consumer: more than being only a member, this user shows how use the product and give hints to use the products in a fashion way
• Fanatics: they are different users; they create communities and brand apps, promote the brand and even act as advocates when other members share bad opinion about the brand.

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

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 been astonished by some data:

• The audience of some countries as Philippines was higher than other established markets. It showed some fashion trends that were covered to the marketing team.
• People who do not speak languages that evolved from Latin stayed less than 30 sec on the site and 85% gave up on the first page (figure 5). 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 WEB ANALYTICS

5.1 Premises

Based on the cases and literature review, the WA framework must follow some premises:

• It is necessary to trace a benchmark based on market parameters to measure if the company website is achieving competitive advantage (Kaushik, 2009). 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 moment, when the user is: (i) navigating on the Internet visiting sites or using apps; (ii) seeing company adds on the Internet (ex.: banners, pop-ups, sponsored links); (iii) interacting with the company website, navigating in its different areas; (iv) Generating results on the website or offline influenced by the online actions. The beverage company was the only case that implemented a full vision of consumers, consequently get more benefits from WA.
• The online and offline communication must be considered as part of the same customer relationship (Bughin et al., 2008; Shankar & Yadav, 2010). The online actions impacts on the offline results and so do the offline actions. Although it is impossible to know exactly the impact of each component, the beverage case showed it is possible to elaborate inferences to monitor it.
• The WA must extrapolate the quantitative data (Bughin et al., 2008; Kaushik, 2009). The cases showed that mind maps based on the consumer’s posts are a values source of qualitative information.

5.2 Components

Adopting these premises, a WA framework was created with six components to understand the consumer’s relationship (figure 6):

• Component 1 – Navigation on the Internet: Before reaching the company website, the consumer is navigating on the Internet, knowing their navigation behaviors must become closer the 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 a user entered the company website, the conversion to the result must be deeply analyzed, but the unsuccessful paths are so important as the converted visits. For example: If the user did not find a product on the website, it is important to register which product was searched to offer it on future opportunities.
• Component 4 – Social media: The social medias (social networks, blogs and forums) is the main source of customer knowledge. Qualitative analyzes as mind maps (figure 7) of specific themes are essential to understand the consumers’ point of view.
• Component 5 – Results: The online results must be set based on the strategic vision. For example, an e-commerce operation must monitor sales, a product manufacturer may measure the images impacts of the brand. One important contribution to the company processes is the customer knowledge that can be used in the development of new products and services and drive the costumer’s care.
• Component 6 – Online/Offline influence – the WA must be part of a major endeavor to understand the customer. As a consequence, the WA analyzes must support the total communication mix signalizing the impacts of offline efforts, for example, posts about a specific campaign, help the marketer professionals to measure the communication acceptance. On the reverse side, the offline channels as the car dealers are impacted by the leads from the website.
These components must be used in group 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 analyses 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 the technical report among other gaps undermine the full potential of WA.

The cases showed this reality, since just one company has explored all the WA dimensions cited on the literature. This problem occurs because of an exaggerated focus on tools and technologies and fewer efforts on conceptualization of the analysis.

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 way to perform deeper analysis.

REFERENCES


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FIGURES

Figure 1: Netflix shifting on demand from 2000 to 2005 (Anderson, 2009)

Figure 2: Customer Life Cycle Funnel (Cutler & Sterne, 2000)

Figure 3: Linear tendencies of unique visitors per car manufacturer
TABLES

Table 1: Topics covered (marked with X) in each case study

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