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Recommended Citation
Lucas Júnior, Durval and Ornellas, Regina, "Using Social Networking Sites (SNS) for Environmental Scanning: An Analysis of Content Monitoring Tools." (2012). *AMCIS 2012 Proceedings*. 15.
http://aisel.aisnet.org/amcis2012/proceedings/DecisionSupport/15

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Using Social Networking Sites (SNS) for Environmental Scanning: An Analysis of Content Monitoring Tools.

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ABSTRACT

In all market segments, social networking sites (SNS) have to be considered an element of value-adding for business, mainly through the possibility of promoting closer interactions between organisations and their customers. Despite this, the main concern is still what is being said on SNS. From this perspective, beyond the diversity of interaction patterns, there are several *extra* tools (the majority of which are available for free), which intend to aggregate the power of analysis to SNS users. Considering that microblogging platforms are the most widespread in the organisational context, the aim of this paper is to analyse the content monitoring tools available, in order to verify the possibility of utilising them as Environmental Scanning (ES) tools. In this way, it is intended to analyse the basis of ES, the main theories and techniques available, the relationship between ES and virtual environments, especially the internet, and content monitoring tools *per se*.

Keywords

social networking sites; environmental scanning; competitive intelligence; content monitoring tools.

INTRODUCTION

The role of Information Technologies in organisations has changed significantly over the past few decades. Due to the globalisation and evolution of market dynamics, IT is transcending its traditional role of administrative support in current strategies. For the majority of organisations, IT is also shaping up to new strategies and helping define them (Henderson & Venkatraman, 1993; Luftman, Lewis & Oldach, 1993; Walton, 1993; Wang, 1997).

Information and knowledge are definitely the basis of 21st century society and are considered essential, both academically and professionally. When transformed by individuals' actions, they become valued skills, generating social and economic benefits to organisations and society. In a globalised market, with an information-based economy, "competition between organisations is based on the ability to collect, process, interpret and use information" obtained from efficient and reliable sources (McGee & Prusak, 1994).

This phenomenon of increasing market competitiveness imposes on organisations worldwide the development of new strategies focused on narrowing the gap between firms and customers, and consequently upraising their profitability levels. The essence of formulating a competitive strategy is to link the organisation to the environment in which it operates. Although relevant environment is very wide-ranging, covering both social and economic forces, according to Porter (1985) the main aspect of the environment to an organisation is the list of competitor organisations. In the knowledge era these strategies have to be made by intelligent organisations, defined by Choo (2001) as "learning organisations that are proficient at creating, acquiring, organising and sharing knowledge, and applying this knowledge to develop its behaviour, position or objectives". According to the author, this process generates the competitive intelligence necessary to gain market differentiation and competitiveness.

Competitive Intelligence can be defined as the continuous information process, which leads to better decision making, whether negotiable or strategic. It is a systematic process of collecting, analysing and disseminating information relating to the actors and variables that may influence the decision making of the organisation, while protecting sensitive knowledge generated inside the organisation (Choo, 2001). Prescott and Miller (2002) identify Competitive Intelligence as the process

composed of steps such as collection, analysis, monitoring and legal and ethical enforcement, using information related to competitors' capabilities, vulnerabilities and intentions. These monitoring events in the competitive environment are widely used by organisations to obtain competitive advantages. In the mindset of this process the systematic collection and analysis of information from the organisational environment is carried out, which will be disseminated to users as *intelligence*, in order to support decision making and competitive advantages (Tarapanoff, 2001).

Within this context, the internet can be considered an alternative for disseminating information, and has become the *new arena* where companies, virtual-based or not, can develop strategies based on competitive intelligence and fight for their goals. The importance of internet-like market trend generators is presented by Decker, Wagner & Scholz (2005) in their research. According to the authors,

> Trends in business science, society, politics and technology are *digitally announced* on the internet, in particular the world wide web, long before their consequences are observed in the real world. The spectrum of digital information ranges from publications by research institutes concerning new technological inventions and political statements, to empirical studies on varying marketing topics. Owing to the fact that the internet is becoming an indispensable element of daily communication, most of the up-and-coming real world phenomena leave their mark in this virtual world. (Decker et al., 2005:190)

The internet allows, among other possibilities, the sharing of information and knowledge (by the collection of information provided outside the organisation and disseminating internal information) and the conducting of business in any remote location, thus ending time zones and borders between countries, and making organisations, however small, international. The facilities provided by virtual environments help decision-making processes in different scenarios because they make information accessible anywhere, anytime, for anyone, not necessarily just a sender and receiver who are simultaneously connected to the network (Gascoyne & Ozcubukcu, 1997).

One of these strategies, a consequence of the significant increase in internet usage and the appearance of the Web 2.0 paradigm, is organisations forming a presence on social networking sites (SNS). Certainly, platforms like Facebook and Twitter are the shortest way to talk directly to customers, hear their desires, to understand their behaviours and predict trends which can become new products or services. The usage of SNS by organisations to gain more proximity to their customers is a characteristic of the marketing strategy called the customer-centric approach (Fellenz & Brady, 2010; Shih, 2010).

Despite organisations developing strategies to be closer their customers, through the creation and maintenance of profiles on SNS, their main concern is still what is being said about them, especially after a consumption experience. Unlike real-world consumers, e-consumers are more engaged to share their opinions with others, so that negative consumption experiences can be rapidly spread throughout the web and consequently damage the firms' image. On the other hand, enterprises can use positive experiences as free and more trustable advertisements.

Another issue for analysis is the diversity of platforms and their functionalities. Each SNS has its own interaction pattern and allows the insertion of different content. While photos, videos, posts and direct discussion are available on Facebook, on Twitter, for instance, the user can only write posts of 140 characters. Considering that microblogging platforms are the most diffused form in an organisational context, there are several *extra* tools (the majority of which are available for free) to increase the usage possibilities of microbloggings, like aggregating resources such as pictures and videos, or giving the power of analysis to their users, especially the possibility of content monitoring.

From this perspective, in order to comprehend the process of competitive intelligence on the internet, the aim of this paper is to analyse the content monitoring tools available for microblogging platforms, in order to verify the possibility of considering them *environmental scanning* tools, a competitive intelligence-based concept.

COMPETITIVE INTELLIGENCE AND ENVIRONMENTAL SCANNING

If the opportunity of forming a presence on SNS is available for an organisation, the fact is that the same opportunities are available to everyone. This commoditisation of information technologies generates reflection on what is useful to the firm; however, those who wish to obtain a competitive edge from social networks, for instance, need to keep in mind that is not just about the technology availability. The competitive advantage has to come from a process of acquiring, analysing, sharing, and exploiting the adequate and valuable information from these platforms and making the correct (and rapid) use of them (Rajaniemi, 2007).

When the issue is the value of information to organisations, the first question to generate polemics is the capacity that firms need to have to collect relevant information and use it to align to their goals. Based on this premise, the concept of

Environmental Scanning (ES) was created as a preliminary step to organisations' information management focused on competitiveness and market survival. According to Choo (2001), ES is "the acquisition and use of information about events, trends and relationships in an organisation's external environment, the knowledge of which world assist management in planning the organisation's future course of action".

ES is a dynamic and complex process, which involves internal and external variables, and should be structured in a way that constitutes a systematic data repository to be analysed according to the needs of the organisation. As the human eyes, which map the environment around the body to comprehend where it is placed, analyse relative risks and opportunities and act according to the proposed demands, ES is the instrument used by managers to familiarise themselves with the business environment and comprehend how to act according to their needs and goals. If, in the human body, the eyes are simply the open doors to data which will be processed by the brain, in organisations, this treatment of data is carried out by the information systems, which each time is more prepared to rapidly process a great volume of data.

Despite the fact that information systems are largely developed and used by organisations, there are problems with the managers' usage of this information, as there are mistakes in the description of which information is relevant to that organisational context or there is a strategic underutilisation of the collected information by the business managers. These problems occur because, differently to other information systems already installed in the majority of organisations, there is no group of clearly established patterns about how these ES tools should be used, and consequently there is no way to define what information should be noticed by managers. This way, the use of these tools cannot be considered *per se*, but in a perspective of strategic alignment, which will define the key information in order to determine the course of action.

If the ES is well designed, it tends to be an instrument of competitiveness and value-adding to the organisation. In order to occur, there must be a formalisation of procedures related to ES, so that it scrutinises the analysis steps *per se*, as well as provides an organisational restructuring that aggregates and appraises its principles. The outcomes have to involve changes in organisational culture, in order to become better adapted to the process of competition imposed by the markets, as well as appropriately respond (agile, efficient and effective) to the environmental stimulations.

Considering the role of ES in organisations, it is clear that it is not enough to scan the environment *per se*. Several strategies should be developed to make such scanning useful and a part of the actions made by the organisation. Ansoff (1975) recommends a pro-active approach, converting discontinuity information into actions, plans, programs and budgets. In this case, information has to be collected in time and has to be sufficient in order to estimate impacts and define answers, providing strong signals. The difficulty is when the manager waits for precise information, during which he/her might not have time to respond.

One of the studies on ES differentiated between four styles of scanning: *undirected viewing*, where the organisation is exposed to information with no specific purpose or information need in mind. In fact, the organisation is unaware of what issues might be raised. Undirected viewing takes place all the time, and alerts the organisation that "something" has happened and that there is more to be learned. In *conditioned viewing*, the organisation is exposed to information about selected areas or certain types of information. Furthermore, the organisation is ready to assess the significance of such information as it is encountered. In *informal search*, the organisation actively looks for information to address a specific issue. It is informal in that it involves a relatively limited and unstructured effort. Finally in *formal search*, the organisation takes a deliberate or planned effort to obtain specific information or information about a specific issue (Choo, 2001). This model can be applied to SNS, but when the model is analysed, the apparently perfect style is the Conditioned View, in that the organisation only focuses on select information. However when an organisation just uses this style, it can miss an opportunity or many opportunities available to the business, because when an organisation maintains its centre of interest on a few select areas, its vision can be obscured by weak signals and trends and new opportunities may not be recognised.

Organisations scan the environment in order to understand the external forces of change so that they can develop effective responses that secure or improve their position in the future. Thus, the main goal of scanning is to avoid unexpected occurrences, identify opportunities and threats, gain competitive advantage and improve long and short term planning. This anticipation approach is also presented by Blanco & Lesca (1998), who added the use of Business Intelligence (BI) systems as tools to help managers during the ES process. Specifically with respect to this kind of system, the authors highlight the possibility of a reduction in uncertainty, due to narrow the gap between the need of processing information in the organisation and its real processing capacity. This way, it becomes essential to create mechanisms to help practitioners collect, analyse and retain time and circumstance-relevant information.

Environmental Scanning: Processes and Techniques

It is important to highlight that the ES process has to be strongly aligned with strategic planning. Despite this, the majority of organisations still do not see this alignment, which results in the ES process being underestimated by managers.

Consequently, according to Rajaniemi (2007), "information for strategic decisions is acquired without adequate tools and methods, reducing possibilities for fact-based management".

Depending on the organisational goals, the process of ES can be continuous, periodic or irregular: while continuous scanning is proactively focused on finding opportunities, irregular scanning is a reactive process, in which there is general exposure to information without any specific purpose; and finally, periodic scanning is more sophisticated, but still focused on problem solving and forecasting with a limited scope (Choo, 2001; Rajaniemi, 2007; Van Vuuren cited by Rajaniemi, 2007).

The research of Rajaniemi (2007) provides an important compendium of the ES process, citing papers from Choo (1997), which discuss the use of information technologies to automate information searches and guarantee a variety of results during the ES process, and Pirttila (2000), who has divided the ES process into two parts depending on the sources of information: 1) an occasional process, based on informal networks; 2) a formal and systematic process, based on publicly available information.

Aguilar (1967) suggested an organisational interpretation of ES process divided into three stages: scanning, interpretation and learning. During *scanning* the environment is monitored and data collected on events. During *interpretation*, the collected data are given meaning by the sharing of perceptions. During *learning*, a new response or action is invoked based on interpretation. Action generates new data for scanning and interpretation thus starting a new cycle. Organisations differ in their modes of scanning-interpretation: the passive organisation which interprets information as received, and the active organisation which develops methods and tools to analyse the information and acts according to the interpretation of the information (Choo, 2001).

Environmental Scanning and the Internet

The effectiveness of the use of technology on the ES process has divided some researchers. While Blanco & Lesca (1998) highlight the low effectiveness of BI systems in performing their functions, apparently due to their incapacity to conciliate the needs and capacity of information processing, Rajaniemi (2007) is very optimistic, particularly about the internet. In spite of the internet not having been widely used for long, and that the tools that support and aid its use can be enhanced, the author says that internet-based knowledge acquisition will grow dramatically during the next few years.

The fact is that the internet is the most important information source in this knowledge era. The main advantage is the tremendous amount of free and useful information that is available for users who know how to find it and how to benefit from it (Rajaniemi, 2007). On the other hand, some challenges have to be overcome to gain ES effectiveness. The first of which is the huge number of documents and links that are the subject to extensive daily changes in both content and structure: a full exploration of all documents available on the web is neither possible nor efficient (Wagner cited by Decker et al., 2005). Another challenge is the difficulty of application in small and medium-sized organisations, in which ES can hardly be delegated at all because of limited human resources (Decker et. al., 2005).

Finally, the quality of the search results depend on the quality of the information sources to be searched. This means that the methods to be utilised during the ES process need to be adjusted to the selected information sources and the organisational goals, due to the fact that it is difficult to construct search queries, to arrange results and to isolate specific types of documents in this complex informational environment (Rajaniemi, 2007).

In fact, in order to establish an efficient method for a web-based ES process, it is important to keep in mind the following limitations (Pirolli and Card cited by Decker et al., 2005):

1) Because of the limited information processing capacity, the forager is not able to fully explore the information environment.
2) The trade-off between searching and handling time is taken into account by models which determine the selection of documents to be explored in depth.

After consideration of these limitations, it is possible to condense the main three steps of an efficient ES process (Ansoff, 1975), which are described below:

1) Searching and filtering (i.e. the web in the present case) pieces or fragments of information containing relevant hints at future developments.
2) Collecting and storing these information fragments in a way that ensures transparency of historical developments.
3) Assembling the meanings of various information fragments to determine weak-signals.

METHODS

This research is typified as qualitative, which is described by Minayo (2001) as not concerned about the search of the truth, but concerned about the comprehension of logic presented by reality; and as exploratory, according to Malhotra's (2001) concept, where this kind of research is the most appropriate to make a better comprehension of research problematic and furthering the development of criteria to new approaches. Regarding method, it is documental research based on the collection of secondary data, especially the descriptions and evaluations of content monitoring tools. Content analysis (Freitas, Cunha Jr. and Moscarola, 1996) was used to compare the theory of ES processes and techniques with respect to the functionalities of platforms analysed.

THE CONTENT MONITORING TOOLS FOR MICROBLOGGINS

This section will present the most popular content monitoring tools available on the web to expand microblogging functionalities and help users improve their online experience. The list was extracted from Social Media Today (Odden, 2010), an online community focused on marketing, advertising and public-relations practitioners. Considering the dynamics of the market of applications for SNS, the list doesn't contain all the tools available on the web neither applications in beta versions. Due to this, it is not appropriate to make a complete generalisation from the findings of this paper. Our intention is to show the main characteristics of the platforms, in order to help practitioners and academics to identify current and new applications, and support the process of analysis illustrated in next section.

1) Hootsuite:

Hootsuite is a social media panel which helps manage several social networks in the same dashboard. The platform allows some free tools and others under subscription. Its full working version contains:

- A customised dashboard, where the user can register several SNS like Twitter, Facebook (user profile), Facebook (content page), LinkedIn, Ping.fm, Wordpress, MySpace, Foursquare and Mixi, and manage comments received, mentions (direct tags about SNS profile or fanpage) made and received, direct messages sent and received, etc., according to the characteristics of the registered platforms;
- Posts and answers previously scheduled;
- Customised activity reports;
- Possibility of registering collaborators to help in the SNS management process, without password sharing;
- Mobile Applications for iPhone, Android, BlackBerry, Keitai and iPad;
- Registering of news feeds (RSS);
- Monitoring of mentions by key-words.

Hootsuite is the most complete social network management tool currently available. It is declared that this tool is used by recognised organisations like Facebook, The White House and media enterprises like the Los Angeles Times, Fox Films, etc.

2) CoTweet

CoTweet is a tool for the integrated management of Twitter and Facebook, which has similar functionalities but is less complete than Hootsuite. Its basic version just allows the registering of Twitter accounts. The standard version, in turn, allows the registering of Twitter and Facebook accounts and has all these functionalities:

- Customised dashboard, with which the user can register his/her Twitter and Facebook accounts (enterprise version), and manage received comments, made and received mentions, sent and received direct messages, etc.
- Multiple users and workgroups;
- Clicks tracking and monitoring tools;
- Reports and analysis;
- Scheduling and publication to multiple accounts and answers to all;
- Filing and history of messages;
- Integration with other online tools (bit.ly, Salesforce.com and Twitpic).

CoTweet is an important tool, used by organisations like McDonald's, Delta Airlines, Microsoft and Citibank. The main marketing discourse is the possibility of integration with CRM software and access by multiple users from global organisations, to enrich the marketing analysis and decisions.

3) TweetDeck

TweetDeck is a tool created to allow the management of social networks in a unique platform. Initially, it was created as an independent tool but, recently, it was incorporated in Twitter. Despite being a Twitter-owned platform, Tweetdeck still allows the management of Facebook, MySpace and LinkedIn accounts. As with the others, Tweetdeck offers the possibility of integration into a panel with a customised interface. In short, Tweetdeck has the following functionalities:

- Customised social networks dashboard;
- Multiple users and workgroups;
- Management of Twitter lists;
- Automatic URL shortening;
- People search;
- Sending of Tweets to several friends;
- Follow, unfollow and block directly from the application;
- Pictures visualisation and links pre-visualisation in the application;
- Video sharing.

TweetDeck, in turn, is more focused on individual users (which have multiple social network accounts) than organisations, due to its weakness in measuring and branding monitoring tools, for instance.

Discussion

In order to analyse the possibility of proposing the platforms presented here as ES tools, we have compared their characteristics and functionalities with the main assumptions about the ES process and systems defined by the authors cited in this paper. We consider that, independent of how complete the platform is, it can only be recognised as an ES tool if it efficiently achieves at least one stage of the ES process. The main three stages described by Aguilar (1967) and two behaviours described by Choo (2001) were considered to comprise the first column of Table 1. In this way we consider that an organisation needs to follow a cycle of continuous scanning, analysis and actions, which characterise a proactive organisation. Consequently, the three stages were extended to five, justifying the analysis topics used here.

As presented in Table 1, all the content monitoring tools analysed in this section have as a main function the enrichment of the interaction between organisations and another users, which is an important marketing task. From these three platforms, just two (HootSuite and CoTweet) can be considered ES tools, because data collection is possible through their usage, analysis and interpretation, three of five stages elaborated after theoretical analysis and used during this discussion item. These platforms allow the analysis of important marketing variables such as brand image and customer satisfaction, for instance. Also, it is possible to conduct a wide ES, inserting key-words like competitors' names or looking for marketing trends. However, only CoTweet allows the enrichment of the decision-making process, through a connection with CRM systems.

CONCLUSION

The main purpose of this paper is the analysis of content monitoring tools available on the internet and trying to make use of them as ES tools. The authors cited in this paper suggested that the ES process has to consider stages of searching, collecting, analysing and use of information; however, the internet is currently the most important information source, but the huge amount of information available may be a challenge to organisations which are trying to be competitive in this new market environment. The focus of this paper is SNS, due to the fact that e-customers are more proactive in virtual environments than common ones, especially in microbloggings, a kind of SNS widely diffused in organisational context.

Considering the ES process presented in Table 1 and the characteristics of the platforms analysed, we have as main conclusion that these tools are stronger in stages of scanning (inclusive continuous) and data interpretation. Due to the focus on the SNS, there are limitations in collecting information, which could be solved through integration with other platforms and data collection techniques. On the other hand, the weakness of them is in the learning stage, becoming essential the use

of another system to achieve this goal. Anyway, during the process of strategic planning, these platforms are helpful to the Environmental Analysis, which identifies opportunities and threats from the current periods and qualifies to plan the future in a viable and strategic way, at the same time.

ES Process – Analysis Topics	HootSuite	CoTweet	TweetDeck
Collecting information from a variety of sources, which involves the gathering information from personal and organisational networks, experts and scholars, market research, and any source that appears to be useful.	Focused just on SNS, could not consider all data sources	Focused just on SNS, could not consider all data sources	Focused just on SNS, could not consider all data sources
Scanning: Identify emerging trends of strategic importance, primarily concerned with future, emerging trends, and issues that have strategic importance to the organisation.	Available	Available	Not Available
Interpretation: Analyse data collected from planning strategic purposes.	Available	Available	Not Available
Learning: Based on data interpretation and organisational strategy, defining actions.	Not Available	Available through integration with CRM	Not Available
Continuously scanning and finding a way to test and follow the results from actions implemented.	Available	Available	Not Available

Table 1. Synthesis of platforms analysed through the ES process perspective.

The absence of patterns to define the main functionalities of ES systems could be considered the main difficulty to using content monitoring tools as efficient ES tools. On the other hand, for practitioners, we consider that there is an opportunity in the development of these platforms, in order to build more efficient tools and help increase the efficiency of the ES process inside organisations using free and plentiful data from the internet.

Suggestions for future research include the effective use of the content monitoring tools by organisations, their impacts on the ES process and consideration of their effectiveness.

ACKNOWLEDGMENTS

The authors thank the funding provided by CNPq (The Brazilian Council for Scientific and Technological Development).

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