

Software Solution for Social Media Data Compilation and Analysis

Solución de Software para la Recopilación
y análisis de Datos de Redes Sociales

Elmar Krajnc¹

Jeff Schmidt-Peralta²

Samanta Ramijan-Carmiol³

Fecha de recepción: 28 de abril de 2014

Fecha de aceptación: 29 de julio de 2014

Krajnc, E; Schmidt-Peralta, J; Ramijan-Carmiol, S. M.
Software Solution for Social Media Data Compilation
and Analysis. *Tecnología en Marcha*. Edición especial
Movilidad Estudiantil 2014. Pág. 14-20.

- 1 Internet Technology FH Joanneum. University of Applied Sciences. Kapfenberg, Austria. Correo electrónico: elmarkrajnc@fh-joanneum.at
- 2 Computer Science Engineering. Costa Rican Institute of Technology. Cartago, Costa Rica. Correo electrónico: jschmidtr@gmail.com
- 3 Computer Science Engineering. Costa Rican Institute of Technology. Cartago, Costa Rica. Correo electrónico: samantaramijan@gmail.com

Key words

Marketing; social media; data compilation; data analysis.

Abstract

This project was developed in the winter semester of 2013, as an initiative of the Research and Development Group, KMU goes Mobile, from the IT Department of the FH Joanneum, University of Applied Sciences, in Kapfenberg, Austria. Two main parts compose the project itself. First the research on Social Media Marketing for Small and Medium Enterprises and second: the development of a Web Based Adaptable Software Solution for Social Media Data Compilation and Analysis, both of them to be detailed in the current document.

Palabras clave

Mercadeo; redes sociales; recopilación de datos; análisis de datos.

Resumen

Este proyecto fue desarrollado en el semestre de invierno de 2013, como una iniciativa del Grupo de Investigación y Desarrollo, KMU goes Mobile, del departamento de TI de la FH Joanneum, University of Applied Sciences, in Kapfenberg, Austria. Dos partes principales componen el proyecto. Primero la investigación sobre Social Media Marketing para Pequeña y Mediana Empresa y segundo: el desarrollo de una solución Web adaptable para la recopilación y análisis datos de Social Media, los cuales se detallan en este documento.

Introduction

It is known that today, social media is a key factor on marketing and brand positioning; there are thousands of companies all over the world profiting from them. With this project, KMU goes Mobile initially wanted to open a new study field for internal projects, and it also aims to motivate and educate entrepreneurs to exploit the possibilities offered by digital social networks, while strengthening their relationship with their clients. The project brought valuable knowledge to the group, and compounds the first interactions with some of the most important technologies and tools in the field of social media data collection and analysis.

Social media

Social media refers to the means of interaction among people in which they create, share, and/or exchange information and ideas in virtual communities and networks (Ahlqvist, Bäck, Halonen y Heinonen, 2008). Andreas Kaplan and Michael Haenlein define social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content (Kaplan Andreas y Haenlein, 2010).

Recommendation framework for small and medium enterprises.

Online marketing is about providing current and potential customers with interesting and informative content, always related to the business but not necessarily in an explicit way. Both the actual and the potential customers are in social media networks, shouting to the world who they are and what they want, this is a behavior that had never displayed before Web 2.0, and that purports a huge opportunity for business, regardless of their size. Quoting Kietzmann; “The ‘find us, friend us, and follow us’ slogan on milk containers is a suitable example for how ‘bought’ media (e.g., advertising) and ‘owned’ media (e.g., the brand or the product itself) can be integrated with social media (the ‘earned’ media) to seed and drive conversations, sharing, relationships, and so forth.” the impact that social media can have over a firm, is clear; it can certainly help the company gain trust within the community.

It is known that without a determined goal, there will not be anything to measure against and this is the reason why it was decided, to set a structure of recommendations within the scope of this project.

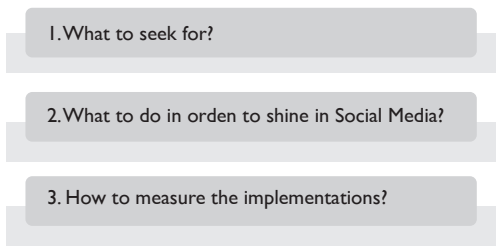


Figure 1. Three main things of the proposed framework

What to seek for?

Reflect a positive image: as a business you want to be found in both the physical and the virtual world. Many potential customers, will look up for a firm in social media, even before looking up for the official website, being absent in social media, can dramatically hurt your business, considering that there are literally millions of active in one or more social networks. For your business to grow, or at least hold together, presenting both carefully and gracefully might is very important.

Closer relationship with customers (B2C): The value of customers does not only lie on the money he/she spends on your business, in fact, it has to do with many more things, and social media is a very useful tool to get to know them closely, in order to provide the best possible products and/or services.

More and better relationships with business partners (B2B): Marriage was a key factor for the expansion of the Habsburg Empire, one of the most relevant monarchies in Europe. Business partnerships are somehow like marriages, they can also be complex to start and manage, but they are definitely very convenient for the business growth. Through social media it is possible to have good relationships with other business, without the need of setting a formal partnership, and just by sharing policies, events and even customers events and even customers.

What to do in order to shine in Social Media?

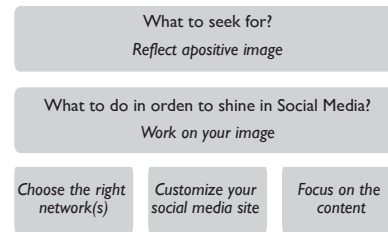


Figure 2. What to do in order to shine in Social Media?

a. Choose the right network(s): Start by choosing the right social network(s), depending on the type of customers you are looking forward to reach, the honeycomb framework (Kietzmann, Hermkens, Silvestre, 2011), can help to accomplish this.

b. Customize your social media site: Open an account and customize it (with your brand colors and logos) and after doing this, is time to start focusing on content.

c. Focus on the content (news, sales and others*): Make posts about news, products and special offers in your social network, but not exclusively, also give the community something to talk about; work on external posts that might be interesting to your customers and followers (to accomplish this, you might need to analyze the data given by the customers, we will talk about this further in this text). A good example of this approach is the Dove Campaign for Real Beauty (Unilever Canada Inc., 2006), a worldwide marketing campaign launched by Unilever in 2004 that includes, video, workshops, sleepover events and the publication of a book and the production of a play. The aim of the campaign is to celebrate the natural physical variation embodied by all women and inspire them to have confidence to be comfortable with them.

They do not talk about the particular creams or lotions, they present women, simple and real women. This was a very powerful campaign that helped to maximize the image of the company, while connecting with their target clients, and selling themselves as a socially aware company. Pay special attention to the content and message of your posts make them fun and interesting.

Connect to your clients

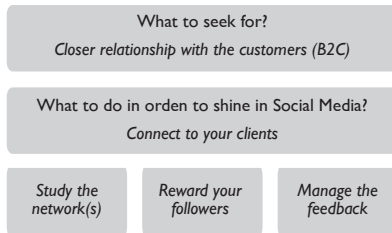


Figure 3. Connect to your clients

a. **Study the network:** People are using social networks to send broadcast messages; it should be of your concern to analyze the information that actual and potential clients are constantly giving away. Your existing customers are valuable resources for the decisionmaking processes. There are various aspects to keep in mind, of course (1) the basic and conscious information available on the user accounts/profiles, then (2) the unconscious “selfdisclosure”, the user might not intend to give directly to marketing teams, and finally (3) the share object, things that are common to your followers.

b. **Reward your followers:** You should encourage the engagement of your followers. If a social media user once liked your Facebook Page or is officially a follower of you on Twitter, it doesn't necessarily mean that he/she is reading your posts, and this is why you need to give value for the interaction. It is a good idea to provide special offers only to subscribed followers and give prizes (discounts or even products) to your most faithful followers, those with the larger interaction rates.

c. **Manage the feedback:** Again, out of the honeycomb framework “The mantra ‘customer service is the new marketing’ emphasizes that the firm is no longer in control of the conversation, and that any social media strategy should also focus on increasing customer happiness.” We can classify feedback in positive and negative, and there are both highly important.

i. **Negative Feedback:** you need to diminish the negative feedback, Pamela Vaughan is a Marketing and Advertising specialist; and among others she recommends: (1) not letting negative comments linger, (2) being apologetic and show appreciation, and (3) reacting publicly first and then privately.

ii. **Positive Feedback:** use the positive to your advantage, whenever a user is showing

support to your business, thank for it, and keep it, you can quote him/her on your own posts.

Also a good thing to do, is directly ask your followers for their opinion, or even to share their talent with you. There are companies asking their followers for their opinion on their brand image, like is the case of Gap (Para, 2010), that after asking about their new logo on social media, and having a negative response, decided to go back to the original one. Asking for the content itself is also an option, in the US American TV Show: Jimmy Kimmel Live! They achieve more than 44 thousand views on the video (Kimmel, 2011), “YouTube Challenge – I Told My Kids I Ate All Their Halloween Candy” for which parents all over the United States recorded the reaction of their children, after telling them that they have eaten all their Halloween candy.

Associate to related business: Within social media it is not necessary to establish a formal partnership, to demonstrate appreciation for another business, and it can help you build a positive image of your business, gain new followers, and have support from other firms.



Figure 4. Associate to related business

a. **Find share objects to promote:** The recommendation would be to find share objects in between your followers, this is: topics, businesses and/or organizations that they like in common. Identify them, analyze their content, and share it in your network (do not forget about mentioning the author and showing support). Keep in mind that this “social media partners” should not be your direct competitors, for example if your business is to sell winter sports cloth and equipment, it is a good idea to promote related business and/or organizations, for example sportsmen and women, winter sport events and resorts.

b. **Build professional connections:** Social media can also help you to find formal partners, providers and outsourced services, and also to promote

yourself. There are professional oriented online social networks; your presence in them can help you consolidate your business as a formal one. The value of connections for enterprises, as it is in real life is very high, so is important to look for key partners.

How to measure the implementations?

It is often taken for granted, that what matters when it comes to social media marketing is to get the largest amount of fans and followers. Considering, that there is not much effort required from a user to like a Facebook page or follow a Twitter account, and that even as an official and quantified follower, the user might not be reading your posts, and your business might seem absent for him/her after a couple of days after liking/following you.

Considering the mentioned before, the number of fans and followers is not a Business Metric, what you do with it is, and in order to make the right decisions it is important to read between lines, and define who your target are.

Social media marketing which often requires qualitative measurement rather than quantitative metrics that are more familiar to online marketers (Morgan, 2009a).

Measurement in social media marketing is a very wide and complex topic. Jeremiah Owyang is an specialist in matter of Web Strategy, and he presents (Owyang, 2008), a list of Attributes that need measurement, that we decided to classify in:

Quantitative:

- a. Interaction: Click, Comment, or Embed
- b. Conversation Index: Ratio between blog posts and comments plus trackbacks.
- c. Velocity: Distance/Time (Rate of how fast your message is travelling in a given time) Jeremiah defines Velocity with examples

Qualitative:

- a. Sentiment: Tone, opinion
- b. Qualitative: What did they say?

Jacob Morgan (Morgan, 2009b) talks about the value of customers 'If we are going to start looking at social media in terms of quantifiable numbers then we need to start understanding how much

our customers are worth, and this means looking at more than just how much a customer spends. A customer's value is not equal to how much they spend at your store.

It's far more. The importance of a follower that shares your content and identifies with your brand, should be considered even if she/he is not necessary the most frequent buyer. Social Media Marketing is all about the Word-of-mouth marketing (WOM), also called word of mouth advertising, is an unpaid form of promotion—oral or written in which satisfied customers tell other people how much they like a business, product, service, or event.

According to Entrepreneur Media, word-of-mouth is one of the most credible forms of advertising because people who don't stand to gain personally by promoting something put their reputations on the line every time they make a recommendation.

Software solution

Typically, small businesses cannot afford to pay an outsourced online community manager, neither to invest the time and money to master complex Social Media Monitoring Software. With the development of this project, KMU goes Mobile contributes with a basic and centralized tool for the SME to overview of their content in social media by themselves, and without the need of outsourcing this tasks to third-party companies.

Functionalities

It is important to highlight that ten weeks of development, including the immersion in unknown technologies is certainly not enough time to built a complex software, that compounds all the required functionalities to help the businesses follow the recommendation framework described above. It is because of this that some decisions had to be made.

The first release of the system will include, helpful functions, for the user to build a closer relationship with the customers, providing quantitative measurements, and relevant data about followers and posts, extracting information from external services, and computing the data, to provide extra metrics.

Initially with this project, the software provides the user with:

a. Post Archive: The basic object in the system are the posts, they can be Facebook posts or Twitter statuses. Starting from a post, the system collects information about the people (Followers) interacting with the post. The data is extracted from the external services and then saved in the local database. The user can then, view a list of the posts, arranged by date, and containing relevant metrics.

b. Followers View: After extracting the data from the posts, the system also requests information, about the followers interacting with them, this information is stored locally, and every follower gains points for every interaction. A list of followers arranged by their rate is displayed to the user, as well as a link to the Follower social media site. With this information, the user can know who are the best followers, and could reward them anyhow.

c. Statistics View: It is considered the dashboard of the system, and it is where the conclusive information is displayed to the user.

Technological Approach

Websites have become an integral part of any business (this happened even before online social media became popular). It is very common that SMEs build their websites over Content Management Systems (CMS) because these are comparatively much cheaper, yet can grow with their businesses. SMEs often look for systems based on open, reliable and sustainable standards, so that the process of their web-development and its prospective growth are not restricted by unforeseen changes in proprietary technology. It was decided to develop a Joomla component, because of the common use of CMS for SME, and the expertise of the platform within the IT Department of FH Joanneum.

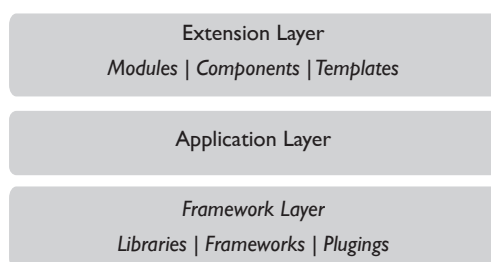


Figure 5. Technological Approach

A component is a kind of Joomla! extension. Components are the main functional units of Joomla!; they can be seen as miniapplications.

An easy analogy would be that Joomla! is the operating system and the components are desktop applications. Most components have two main parts: an administrator part and a site part. The administrator part provides an interface to configure and manage different aspects of the component and is accessible through the Joomla! administrator application, and this is where our subsystem is displayed.

It is expected to make the component public, by sharing it in the Joomla! Extensions Directory, and with that generate a greater contribution to the open software community.

Conclusion

The research on social media marketing and the development of a first functional system open to SMEs is recognized as a door opening in what is considered a wide and very important field for Information Technologies in present times.

The scope of future versions of system can be especially broad, as a recommendation for any further development, it is suggested to focus on the recommendation framework, and built functionalities to help the users to achieve, what is written on the framework.

Acknowledgment

R.S Author thanks both institutions involved, the Costa Rican Institute of Technology (International Internship Program for Students with CONARE funds) and the FH Joanneum University of Applied Sciences for the support and guidance during the research and development processes, and hopes for future projects to work with together.

References

Ahlqvist, T., Bäck, A., Halonen, M. y Heinonen, S. (2008, December). Social Media road maps exploring the future triggered by social media. VTT Research Notes (2454). Available: http://www.vtt.fi/inf/pdf/tie_dotteet/2008/T2454.pdf.

Kaplan Andreas, M. y Haenlein M. (2010). "Users of the world, unite! The challenges and opportunities of social media". *Business Horizons*, 53(1). p. 61.

Kietzmann, J., Hermkens, K., Silvestre, B. (2011). Social media? Get serious! Understanding the functional buildingblocks of social media; *Business Horizons* 54, 241-251.

Unilever Canada Inc. (2006) Why the Campaign for Real Beauty? Available: <http://web.archive.org/web/20070816112659/http://www.campaignforrealbeauty.ca/supports.asp?url=supports.asp§ion=campaign&id=1560>

Para, B. (2010). Gap Reverts to Original Logo After Social Media Backlash. Available: <http://mashable.com/2010/10/11/gaplogo/>

Kimmel, J. (2011). YouTube Challenge – I Told My Kids I Ate All Their Halloween Candy. Available: http://www.youtube.com/watch?v=_YQpbzQ6gzs

Morgan, J. (2009a). Customer Value and Social Media ROI. Available: <http://www.thefutureworkplace.com/customer-value-and-social-media-roi/>

Owyang, J. (2008). (Online Blog) Social Media Measurement Attribute: Defining Velocity. Available: <http://www.webstrategist.com/blog/2008/03/06/socialmedia-measurement-velocity/>

Morgan, J. (2009b). (Marketing Profs) Do you know the value of your customers? <http://www.mpdailyfix.com/do-you-know-the-value-of-your-customers>