

Comparison between two formulas used for calculating the rate of engagement using based on the percentage of views and total fans

Comparação entre duas fórmulas utilizadas para o cálculo da taxa de engajamento utilizando como base a porcentagem de visualizações e o total de fãs

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ABSTRACT

Social media have become relevant marketing strategies for businesses, mainly in building a relationship with customers. There are several strategies to analyze the level of relationship with the customer. One of the most used is the result of calculating the rate of engagement. The rate of engagement is used to learn about the interaction between the publications made in personal pages or fanpage. In this article aims to propose a new formula for the calculation of the rate of engagement based on the views of publications by changing the old formula that uses the total number of fans on the page. The results showed that the proposed formula result in a rate of engagement close to the reality, enabling actions of marketing digital more directed to target audience and the analysis strategy of marketing digital of your competition. With the obtained results it is possible to analyze which publications have better interactions, thus providing a greater knowledge of your target audience and your competition.

KEYWORDS: Relationship marketing; Social media; Digital marketing.

RESUMO

As mídias sociais se tornaram relevantes nas estratégias de marketing para as empresas, principalmente na construção de um relacionamento com os clientes. Existem diversas estratégias para analisar o nível de relacionamento com o cliente. Uma das mais utilizadas é o cálculo da taxa de engajamento. A taxa de engajamento é utilizada para conhecer a interação entre as publicações efetuadas nas páginas pessoais ou *fanpage*. Este artigo tem como objetivo propor uma nova fórmula para o cálculo da taxa de engajamento com base nas visualizações das publicações, alterando a antiga fórmula que utiliza o total de fãs na página. Os resultados mostraram que a fórmula proposta resultou em uma taxa de engajamento mais próxima da realidade, permitindo ações de marketing digital mais direcionadas ao seu público-alvo e a análise da estratégia de marketing digital de seus concorrentes.

PALAVRAS-CHAVES: Marketing de relacionamento; Mídias sociais; Marketing digital.

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1 INTRODUCTION

With the advent of the internet many changes came to the society. Among these changes there is the ability to express people's thoughts through the tools of communication by computer, thus, actors can build content and interact with other actors, supporters, friends etc.

Among these communication tools there are the social medias which, during the last years, had solidified in the digital environment, becoming them essential in a strategy of digital marketing and relationship marketing.

The structure of communication provided in social media, brought together the contents of a campaign, not considering only the product or the product's benefits, giving place to relationship marketing, which focus on the people's feelings, enabling the customers or followers, beyond to consume their information, cutting across and having the option to interact with the content, showing its feelings about it, being no longer the receiver of information and becoming a promoter of your brand. According to Kotler (2010, p. 4), currently the marketing has its focus to values that are concerned with the way of getting people to not be treated only as consumers but as whole human beings and these consumers are increasingly seeking solutions to transform the globalized world. Lima (2009, p. 95), believes that connected social media allows the active participation of the communication of users in the information.

A well-structured fanpage on Facebook offers, to its creator, a diversity of information that might help to stand out against its competitors. Unfortunately, a large number of information is not analyzed properly, or are simply ignored, causing a great noise in the communication between the page and its followers. What is the use of having a fanpage with a diversity of information that are not used by its followers?

One of the ways to calculate the quality of information in a fanpage is performed by using the calculation of the information engagement rate. The analysis of engagement of a fanpage, has as a result to evaluate whether the action increased is getting the interest of the people, in other words, whether the public is becoming interested by the action, is understanding the purpose or which are the actions with the better results. The answers to these questions are found by the analysis of the engagement rate. The greater the number of interactions and engagement of an action in a positive manner, the better the connection of the fanpage with its audience, consequently, having a wider range and standing out from its competitors.

In the calculation of the engagement it is used the organic reach of post. According to the Facebook (2017), the organic reach is the total number of people who viewed its publications through a non-paid distribution. Second Bleier (2014), Facebook reduces the organic reach of a publication on the page for about 1% or 2%. The engagement rate formula of Valvasori (2014) uses the total number of fans on the fanpage as the organic reach of post, this formula is used in several quotes (Ishida, 2015; Earl, 2016). This parameter may results in an untrue engagement post rate.

The main objective of this article is to propose a new formula to calculate the engagement rate, in which there was an amendment of the organic reach calculation currently used. With this new formula the users, who are not fanpage administrators, may calculate the organic reach and, consequently, find the engagement rate of a post done in a fanpage. In the preparation of this article there were carried out bibliographical researches (social media and social networks, digital marketing, internet and relationship marketing). This study presents ways to assist in the analysis of a fanpage content, with no administrator access and monitoring the performance of the results.

In later sections it will be presented some of the major changes that have occurred on the internet, since its emergence to the beginning of the social networks and social medias. As a result, it will be presented with the formula of the engagement rate and the new formula to calculate the organic reach publications. Subsequently, it will be compared and discussed the results analyzed with the results of the two formulas.

2 SOCIAL NETWORKS ON THE INTERNET

The social network has its origin dated well before the internet in the 20th century (Recuero, 2009, p. 17). However, this article is directed to the creation of social networks through the internet, then it can be assumed that the beginning of social networks on the internet was in 1969, with the development of the dial-up technology, and the launch of the CompuServe, being the first reports of socialization of data.

Another relevant step in that evolution was the first e-mail in 1971, being followed seven years late with the creation of the Bulletin Board System (BBS), a system created by two enthusiasts from Chicago to invite their friends to events and perform personal ads. This technology used telephone lines and a modem to transmit the data. (Daquino, 2012)

Table 1 presents the main events related to social networks, second Daquino (2012).

Table 1 - Major events of the creation of social networks

Year	Established	Event
1985	America Online (AOL)	Provided tools for people to create their virtual profiles.
1994	GeoCities	Provided resources in order to people could create their own web pages.
1995	O The Globe	Allowed the online publication as desired by the user and the interaction with people with common interests.
1995	Classmates	Aimed that its users could get together with their friends from high school and college.
1997	AOL Instant Messenger	One of the pioneers in the chat category.
2002	Friendster	Encouraged the bonds of relationship between people with common interests.
2002	Fotolog	The concept was to publish pictures made by any registered user.
2003	Linkedin	Designed for professionals.
2003	MySpace	Considered by many as the copy of Friendster.
2004	Flickr	It is similar to the Fotolog, in which people create albums and share their images with the users.
2004	Orkut	During a long period, it was the social network more used by Brazilian internet users, until being overtaken by Facebook, in December 2011.
2004	Facebook	In spite of being created in 2004, it only reached to the general public in 2006, becoming the largest social network in the world.
2006	Twitter	It had as a concept (in the beginning) a quickly transmission of information with 140 characters.
2009	WhatsApp Messenger	The concept of communication between users though images, videos, voice and documents.
2010	Pinterest	The concept of sharing photos in which users have the possibility to organize by themes and categories.
2010	Instagram	It allows the user to capture images, apply filters and share the same free of charge.

Source: Daquino, 2012.

That is when we come to the time when the social networks have fallen in the taste of the internet users and turned machines of money. The year of 2004 can be considered the year of social networks, because in this year were created Flickr, Myspace and Facebook - some of the most popular social networks, including the largest of all until today. (Daquino, 2012)

It is possible to consider the social networks on the internet as a way of grouping of people, in which they share their interests with others, forming groups of people who have an interest in common. As per Marteleto (2001, p. 71-81), social networks, from a conceptual point of view, are defined and classified in various ways and with different criteria, which makes it complex and consists of representations of sets of persons or organizations linked together by social ties, such as friendship or work, with shared interests and values.

2.1 Social Medias

Second Doko (2010), social media are online tools used for dissemination of content that, at the same time, allow any relationship with other people. For Franklin (2015), social media is an online environment in which they can share information. To Rodrigues (2016), social media are the tools that are used to expose and share opinions and/or maintain the social network. For Cardoso (2016), social media or new media (New Media), is nothing more than the name of the platforms that businesses use to communicate with their customers and people in general. Thus, it is understood that social media are the actions done by means of a producer of content on social networks, allowing the interaction of the receiver.

Social media can assist in connection between organizations with their target audience: new clients, customers, employees, suppliers, future suppliers etc. On the other hand, this connection can be a negative experience for the organization due to some negative repercussions of its brand through the same media.

As can be seen in Table 2, there are listed the main social networks in the world, which can be used for dissemination of social media, according to Drum (2017).

Table 2 - Major social networks

Position	Social network	Active users
01	Facebook	1,871,000,000
02	WhatsApp	1,000,000,000
03	Facebook Messenger	1,000,000,000
04	Tencent QQ	877,000,000
05	WeChat	846,000,000
06	QZone	632,000,000
07	Instagram	600,000,000
08	Tumblr	550,000,000
09	Twitter	317,000,000
10	Baidu Tieba	300,000,000

Source: Drum, 2017.

2.2 The influence of networks and social media on organizations and brands

A brand goes beyond a name, a logo or a visual identification, a brand is the full experience of consumer or possible consumer with an organization, since the first contact with the organization until the subsequent actions to the acquisition of the product or service. A customer or potential customer has the power to have a direct impact on the opinion of others about a brand.

Therefore, with the advent of the internet, the consumer has become accessible to more easily and faster information, using various means of communication as: social networking sites, magazines, blogs etc. This form requires that organizations meet the all needs of its consumers, related to personal, social and environmental issues.

There is a process for effective exploitation of market information and, to some extent, the executives use the information so inadequate and clumsy, once there are only some companies that have deployed a systemic procedure to collect data on the environment of marketing managed to store and transform them into relevant information (Chiusoli, 2005).

With social networks, consumers, in addition of being more aware and active, they also have the opportunity to become emitters of opinion. As a result, organizations are more exposed and must be careful to not denigrate its image becomes increasingly relevant. A way to prevent the denigration of a brand in a fanpage is monitoring the engagement rate of the brand. With the results achieved in the analysis of the engagement rate, the brand will better understand its consumer, aiding in the creations of actions relevant to them.

All these new settings of the global social environment will require new postures from the organizations, requiring a better planning for its communication to connect with the public, with public opinion and with society in general. (Kunsch, 2007, p. 38-51)

3. COMMUNICATION AND ENGAGEMENT

3.1 The communication

A communication begins in the interaction between two or more people. In the event of a brand, the relationship of the brand with the consumer is the main link that the organization may have to be able to influence the decision of their consumers and thus be remembered before their competitors. According to Taylor (1998, p. 258), the communication is a process of human interaction, in which someone seeks to establish a particular influence on the behavior of others.

The Communication Integrated Marketing (CIM), a concept defined by Schultz (2003), aims to be different from the ads developed for an audience of mass to the discovery of potential consumers. Therefore, based on information obtained through research and analytics, companies are discovering, in fact, who are its consumers, using a campaign covering an audience that is interested in its products or services.

According to Kotler and Keller (2006, p. 14), there is a differentiation in processes of communication from the past with the present. In the past, the companies were sought only to communicate by means of traditional media (television, newspapers, radios and magazines); currently, after the advancement of technology companies also seek the communication through the internet, mobile devices etc.

There are five characteristics that constitute the meaning of the CIM for an organization:

1. Influences the behavior, because the main goal is to lead the audience's communication to the desired behavior;
2. Begins with the client, which determines the communication methods that best will serve to inform and influence they to buy certain brand;
3. Uses any form or any means of contact with the customer, because everything that an organization performs can infer somehow in the brand image;
4. Seeks the synergy in all elements of communication;
5. Builds relationships that can foster a repeat business related to a product or service and, perhaps, lead to loyalty.

Through this, the CIM emerges as a tool to help ensure synergy and consistency of message, regardless of the means of communication used to transmit it (Ikeda, Crescitelli, 2012, p. 51-58).

Madhavaram, Badrinarayanan and McDonald (2005, p. 69-80) introduced the concept of connections of brand identity, which considers all the interactions that occur with brand, being they through suppliers, customers, employees or others, such as a connection to the brand value for creations or strengthening of new connections with interested members of the public.

As noted, there are several concepts of communication, and each concept, has specific characteristics. It is the responsibility of each marketing professional, to analyze and identify which concept is best suitable to communicate with their consumers and potential consumers.

In this article, in spite of several alternatives for communication, there were considered to be those concepts that encompass the communication for a specific group of people who have an interest in a product or service already established.

3.2 Engagement

The engagement is the user interaction with a page that is following, in other words, is the visitor interaction to an action (posts, comments, videos, images, among others) of the visited place, when there is a constant user interaction with the brand there is a better engagement. According to Silva (2013), there are three optics to measure the engagement: audience engagement which analyzes the engagement of an individual or group around a theme or property; content engagement which examines the engagement of a specific content and the canal engagement which analyzes the aggregate commitment to a channel/owner.

An engagement rate is the percentage of interaction by followers, in other words, the percentage of actions that are executed further to their. Therefore, the higher the rate of engagement of an action or a fanpage in a positive manner, the better the highlight of the same.

The on-line communication allows an interaction with the non-existent public in other media. It is possible to immediately analyze the results of an action, identify and modify strategies that are not working, send replies in real time, in addition to share and expose materials. (Byron, 2011, p.12)

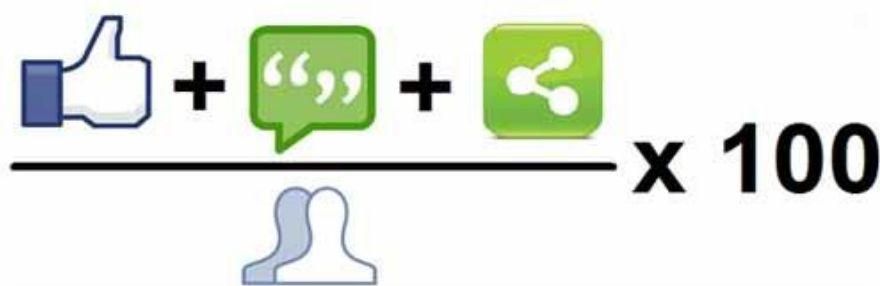
The engagement can be seen as an audience of quality since it indicates a "reaction" of the user in relation to the content. The measures of engagement are key performance indicators of development as success or failure of digital marketing campaigns (Silva, 2013).

By means of interactions (sharing, likes or comment) made in a post, for example, it is possible to measure the engagement of its interactions with its audience. If the post has a large number of views, however, a small number of interactions, shows that the post had not mobilized the reaction from your reader, thus showing that the post was not attractive. In case the post has a great number of views and a great number of positive interactions, it shows that the post has motivated the reader to have a positive reaction, thus becoming an attractive post. The greater the number of post attractive disclosed in a fanpage or a profile, the greater the possibility of it to be disclosed, becoming recognized.

In this article it is used two formulas to find the engagement rate of an action in the fanpage, applying different ways to calculate the organic reach: the first, with the total base of fans of the page; the second, based on the percentage of range of fans followers of the fanpage (first relation) and friends of these fans (second relation).

3.2.1 Engagement rate based on the total number of fans

In Figure 1 it is presented the calculation used to find the engagement rate that involves the sum of interactions performed on postage, divided by the total number of fans of fanpages, multiplied by 100 (Valvasori, 2014).


$$\frac{\text{Likes} + \text{Comments} + \text{Sharings}}{\text{Total Fans}} \times 100 = \text{Engagement rate}$$

Likes + Comments + Sharings = Total Engagement
Total engagement / Fans x 100 = Engagement rate

Figure 1 - Formula to calculate the Engagement Rate
Source: Valvasori, 2014

As seen in Figure 1, the calculation of Valvasori (2014) has the objective to measure the engagement rate of a post using the total number of interactions, divided by the total number of fans of the page, which represents the organic reach, multiplied by 100. In this way, the interactions that may occur through people who are linked to the pages of the second generation are not calculated. An example is when there is an interaction in a fanpage and the same is visualized in the profile that the person has interacted, modifying the organic reach of publication in addition to the fans of the fanpage, thus being able to occur interactions of third parties. With the calculation of Valvasori (2014), the interaction which will be calculated refers only to the total range of fans, not considering the scope of the second generation.

3.2.2 Engagement Rate based on the percentage of fans (first relation) of a page and fan's friends (second relation)

To find the engagement rate based on the percentage of fans, it was performed an adaptation of the calculation of Valvasori (2014), instead of using the full range for the number of fans fanpage, it was used in the organic reach that represents a percentage of followers plus a percentage of followers of followers, therefore, modifying the number of profiles that would be achieved in the fanpage.

Taking as a basis for calculating the engagement rate and the total amount of likes in the page, it can be assumed that all its followers have access to its publication, because according to Bleier (2014), only a percentage would have access to this publication.

To obtain a rate of engagement of a fanpage in which there is no administrator and taking into account the percentage of organic reach, it would have to modify the formula defined by Valvasori (2014).

$$TAU = MI * MQA * PV, \quad (1)$$

$$TAP = TAU + (TF * PV), \quad (2)$$

$$TE = (MI/TAP), \quad (3)$$

Where:

TAU - Is the total range of second relation

MI - It is the average of interaction (likes, sharing and comments)

MQA – It is the average of friends on the second relation (in this fictitious case 800)

PV - It is the percentage of the views in the publications of fanpages

TAP - It is the total organic reach

TF - It is the total of fans

TE - It is the Engagement Rate

The recalculation of TE is performed according to these steps: is initially calculated the MI which represents the sum of all interactions divided by the number of posts; then MI is multiplied by MQA, it can be calculated using the formula for sample calculation, for example, to 500,000 fans with percentage of confidence of 95% and 5% sampling error, it is necessary to analyze 384 profiles (Santos, 2017); then multiplying the result by PV. In this way, it was calculated the TAU which will be used in the calculation of TAP adding to the value generated by multiplying the TF for PV, resulting in the total organic reach (TAP) using the percentage of views. The TE is to find in the division of MI by TAP.

Observing the format of the calculation note that the formula uses the number of total organic reach of postage. With the knowledge of the same can calculate what was the total number of interactions that have occurred and, subsequently, the rate of engagement in the post.

It should be noted that the difference in the calculation of the engagement rate between the formulas of Valvasori (2014), which uses the total number of fans in the fanpage, and the proposal in

this article, which uses the percentage of views, influences the result as are presented in the next section.

3 RESULTS

Table 3 shows an analysis performed on three fictitious examples, in which the Company A has 100 thousand followers, 100 posts, 20 thousand likes, 1 thousand reviews and 5 thousand shares. Company B has 500 thousand followers, 100 posts, 100 thousand likes, 10 thousand reviews and 15 thousand shares and Company C has 1 million followers, 100 posts, 1 million likes, 100 thousand reviews and 50 thousand shares.

Table 3 – Engagement rate calculation of Valvasori (2014)

	A	B	C
Fans	100,000	500,000	1,000,000
Posts	100	100	100
Likes	20,000	100,000	1,000,000
Comments	1,000	10,000	100,000
Shares	5,000	15,000	50,000
MI	260	1,250	11,500
Engagement by posts	0.26	0.25	1.15

Source: Author's data, 2017.

In Table 3, we observed the results achieved using the calculation of the engagement rate with the total number of fans of pages, which shows that the rate of engagement of the Company A would be 0.26, Company B, 0.25 and Company C, 1.15.

In Table 4, we observed the results achieved using the calculation of the rate of engagement with the percentage of fans of pages and friends of fans on the page, which are different in comparison to Table 3. In the Company A it is 0.26, it should be noted that the rate of engagement decreased to 0.08, due to the number of organic reach reached that would be 3,080 and not 100 thousand followers. It should be noted that, in the formula of Valvasori (2014), the result of the division of the total interactions by total number of fans is multiplied by 100, if this multiplication was ignored the TE would be 0.0026. This influence is visualized in the next few comparisons. In Company B, 0.25, decreased to 0.08, with organic reach of 15 thousand people and not 500 thousand people, in the Company C, 1.15, would be of 0.11 with an organic reach of 102,000 people and not 1 million.

Table 4 – Engagement rate calculation proposed in this work

	A	B	C
Fans	100,000	500,000	1,000,000
Posts	100	100	100
Likes	20,000	100,000	1,000,000
Comments	1,000	10,000	100,000
Shares	5,000	15,000	50,000
MI	260	1,250	11,500
Organic reach	3,080	15,000	102,000
Engagement by posts	0.084416	0.083333	0.112745

Source: Author's data, 2017.

Based on the information that highlight that are not all fans that visualize a post, when you put a percentage of possible access, it has an approximate rate of engagement of reality.

In this study it was used the percentage defined in Bleier (2014), of 1 %. But, can be used for other values, such as, for example, 9%, according to Cohen (2015).

In Table 5 it is possible to view the example using this value.

Table 5 – Engagement rate using 9% percentage of view

	A	B	C
Fans	100,000	500,000	1,000,000
Posts	100	100	100
Likes	20,000	100,000	1,000,000
Comments	1,000	10,000	100,000
Shares	5,000	15,000	50,000
MI	260	1,250	11,500
Organic reach	27,720	135,000	918,000
Engagement by posts	0.00938	0.009259	0.012527

Source: Author's data, 2017.

Comparing Tables 4 and 5 it is possible to observe the change in values of organic reach and, consequently, the engagement rate.

In comparison to the engagement rate of Valvasori (2014) and the engagement by percentage, it can be noted that the main change, is in relation to the number of organic reach. When it was used by Valvasori (2014), it has a fixed number of range (the total number of fans on the page), and the engagement by percentage, there is not such a limit. When assessing the total number of fans it is realized that only followers of the page would have access to the post; when it is evaluated by percentage of posting views it is possible to notice that other profiles can also have access to the post, thus changing the number of total range. This change in the formula calculation will help to find an approximate number to the real scope of each post. The results of these rates to companies can be used to understand which is the best strategy that its competitors are using on its pages to address their fans, and thus have better knowledge of its audience and its competitors, creating a marketing strategy more objective in its page.

In Table 6, it is observed an example to find the engagement rate divided by themes. Using this form of calculation, the company will find what was the content used in publications that have the best engagement with the audience.

Table 6 – Comparisons by themes

January	Courses	Events	Videos	Motiv.	Util.	Humor	Challenges	DC	Student
Images	29	14	01	44	-	11	-	02	01
Likes	22386	3142	60	1343	-	1213	-	49	95
Comments	6285	162	13	13	-	522	-	0	1
Shares	3794	0	04	170	-	141	-	3	4
Average	1119.48	236	77	34.68	-	170.54	-	26	100
Total range	12342.86	3631.75	2064.01	1646.73	-	2986.31	-	153	2290.79
Eng. (Valvasori, 2014)	0.857	0.180	0.059	0.026	-	0.130	-	0.01	0.076
Eng. (Authors)	0.090	0.064	0.037	0.021	-	0.057	-	0.01	0.043

Source: Author's data, 2017.

4 CONCLUSION

The internet presents significant numbers of users in Brazil and in the world. This also meant that the internet has become an excellent way of communication between people, therefore, sites aiming the maintaining social relationships called Social Networks have become a mean of access for people, becoming a new form for the brands to better understand its consumers.

Facebook which is currently the main social network in the world, with almost 2 billion unique users (Drum, 2017), is also a mean of engagement between brand and followers, in which brands can offer information, interactions and continuous disclosures in a quick and direct way to its followers.

The relevance of a fanpage to a brand is clear, being a major element of approximation between a brand and its customers and potential customers.

The interaction of the follower in the social networks is of great advantage to a brand. The entire procedure performed on a fanpage facilitates and covers which marketing strategies should be addressed and what methods or contents.

This study also showed that it is possible to observe the followers using the new formula in order to calculate the engagement rate, taking into account the percentage of views in place of total fans, it is possible to get a closer engagement rate without great fluctuations in the results. Differently to the analysis of total of fans who, in some cases, can exceed 100%, in other words, to get a range greater than the total number of fans of the page, in the case of the analysis by percentage it will be possible to have always a rate equal or lower than 100%, in this way, to know what was the total publication analyzed rate.

An relevant contribution in this work it was the amendment of the formula to calculate the engagement rate of Valvasori (2014) that uses a range of unique organic (considering the total number of fans), while the formula here proposed, uses a varied organic reach (percentage of views), providing a further analysis of approximately of the publications' views.

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ⁱ Contribution of each author in preparing the article:

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- Elaboration of the article;
- Elaboration of the engament rate calculation;
- Elaboration of bibliographical Research;
- Elaboration of the tables;
- Elaboration of the conclusion.

Contribution of **Valdir Gil Pillat**:

- Review and text suggestions;
- Discussions about the new engagement rate.