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Research Article

Company's Image Evaluation in Online Social Networks

Camelia Delcea[1], Ioana-Alexandra Bradea[2] and Ramona-Mihaela Paun[3]

[1.3]The Bucharest University of Economics, Bucharest, Romania
[2]Ramona-Mihaela Paun, Webster University, Bangkok, Thailand

Correspondence should be addressed to:

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Abstract:

Once with the appearance and rapid development of the Web 2.0 technologies, the online social networks have gained their place in their users' everyday life and decisions. The online environment has become the meeting point for people from all over the world, changing information at a glance on all life aspects. In this context, the company's image can be a trigger for influencing buyers' behaviours, the image being strongly related to what is actually happening in the online environment, where individuals are actively engaging in online conversations. Being aware of the power and influence they can get from online social networks, the companies have adapted their marketing strategies to the online environments, in order to create, protect, maintain or alter an image held by an audience. In this context, companies' image can be affected by the information that is passing daily through the online environment. Therefore, using one of the newly developed theories in the field of artificial intelligence, namely the grey systems theory, company's image evaluation has been shaped in the online context.

Keywords: image, non-financial performance, online social networks, grey systems, decisions.

Introduction

The collective desire to take part in a community has been emphasized more in the last decade due to the emergence of the World Wide Web and to the increasingly number of social software, which have granted the appearance of a countless virtual online communities. [13] Depending on the user, the online personal network can take different shapes, having different network characteristics. (Figure 1)

Therefore, the online environment has become the meeting point for people from all over the world, changing information at a glance on all life aspects. Recent studies [7] have shown that the information shared through the OSN is a conscious act, people deliberately deciding what information to share in term of importance for its own image across the network or for the people that might be interested in. From this point of view, the ONS users are sharing, in general, things they value or things that seem valuable to other people in their network. Xu et al. [19] are underlying the

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fact that 65% users used online reviews for product purchase decision-making, while 86% of them are saying that other customers' reviews are extremely or very important when making a decision.

In this context, the company's image can be a trigger for influencing buyers behaviours [5, 17], the image being strongly related to what is actually happening in the online environment, where individuals are actively engaging in online conversations. Being aware of the power and influence they can get from OSN, the companies have adapted their marketing strategies to the online environments, in order to create, protect, maintain or alter an image held by an audience. The motivations that have conducted to this type of strategies, also called impression management, were diverse, depending on each company's marketing strategy. Among the impression management techniques, five are most prominent [12]:

- integration: behaviours used by companies to make them look more attractive to an audience;
- intimidation: behaviours presenting the companies as powerful as dangerous, which can make harm to individuals;
- organizational promotion: behaviours showing that the company is very effective, successful and competent;
- exemplification: behaviours used by a company to underline its social responsibility and involvement in moral projects;
- supplication: behaviour that sustains an image of dependency and vulnerability in soliciting assistance from others.

Among the five techniques, only four of them have been proven to have a partial direct positive relationship with a company's financial performance, exemplification having a very low quantifiable effect. [12]

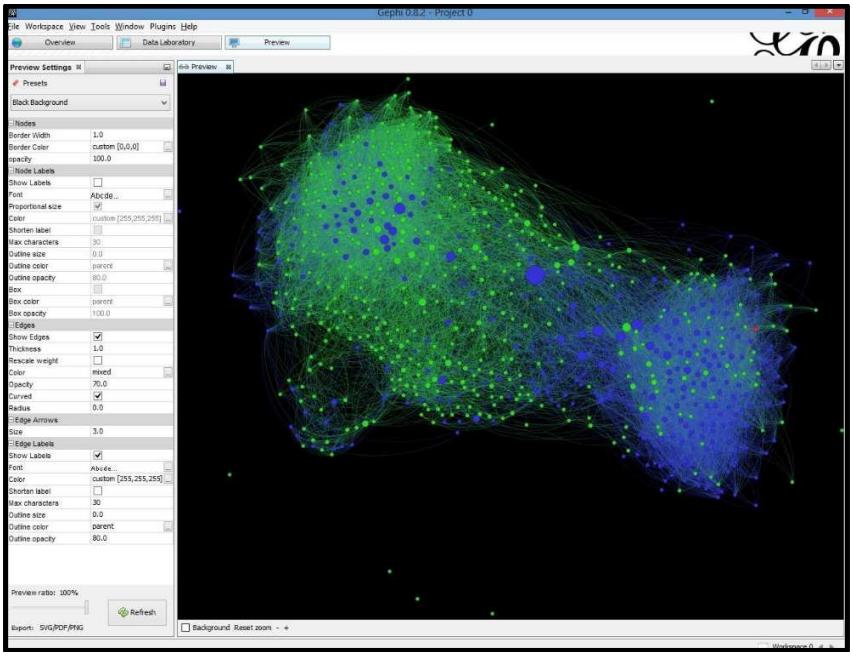

Figure 1: A personal network visualization using Gephi 0.8.2

But as the financial performance can be influenced by the non-financial performance, the present is trying to shape the relationship between the activities and influences in OSN on companies image, mainly due to the fact that image is one of the non-financial performance

triggers, strictly related to company's future evolution. [3]

Therefore, a case study is proposed in section 3 in order to determine the incidence of the OSN activity and participation on a user's opinion about a certain company. The grey systems theory will be used in shaping these relations as it has been widely applied in applications involving a high degree of uncertainty.

Grey Analysis

The incidence analysis is a central method in the grey systems theory and it is one of the most employed techniques when dealing with uncertain situations. Over the time, there have been created a series of incidence degree, among which it can be mentioned: the degree of grey B mode incidence [15], the degree of grey C mode incidence [16], the degree of grey T mode incidence [14], the synthetic degree of grey incidence [10], the local degree of grey incidence [18], the Gini degree of grey incidence [11], grey distance incidence degree [9], Deng's degree of grey incidence [6] etc.
The Deng's degree of grey incidence will be used in the analysis conducted in section 3 due to its easiness of use and demonstrated practical applicability. Considering the following [6]:

A sequence of systems' characteristics:

$$X_0 = (x_{1,0}, x_{2,0}, \dots, x_{t,0})$$

A number of relevant factors sequences for this system, given by:

$$X_j = (x_{1,j}, x_{2,j}, \dots, x_{t,j})$$

where: $= 1, 2, \dots, n$, t = the period of time and n = the considered variables and: $x_{k,j} > 0, k = 1, \dots, t$;
The calculated values of the incidence degree of a relevant factors sequence on its main characteristics will be noted as: $\gamma\left(X_0, X_j\right)$.

Deng's degree of grey incidence [6] is calculated as follows:

$$\gamma(X_0, X_j) = \frac{1}{t}\sum_{k=1}^{t}\gamma(x_{k,0}, x_{k,j})$$

where:

$$\gamma(x_{k,0}, x_{k,j}) = \frac{\min_k \min_j \left|x_{k,0} - x_{k,j}\right| + \rho \max_k \max_j \left|x_{k,0} - x_{k,j}\right|}{\left|x_{k,0} - x_{k,j}\right| + \rho \max_k \max_j \left|x_{k,0} - x_{k,j}\right|}$$

with:

$$\rho \epsilon (0, 1)$$

In the next section, Deng's degree of incidence will be used for establishing the influence of the grey online social networks on company's image.

Case Study

The case study was conducted to a 258 respondents, having the age between 18 and 41 years old. Among them, 98.40% are members on the online social networks, while the rest of have never been a part of this kind of networks, which reduced our sample to 254 valid respondents. Among these, 90.94% have seen a commercial in the social media in the last year or have seen and participated to a discussion related to a company's product/ service.

It was interesting to know how open the consumers are to the discussions initiated in online social networks and, for this, they have been asked to point out how often they read or actively take part on these discussions. The answers have been structured though a 4 point scale: never, sometimes, often and always and they are: 2.44% never, 26.83% sometimes, 51.22% often and 19.51% always.

Another question was trying to find out if the online social networks users are paying more attention to the online discussion related to the products/ services they are frequently using. The respondents' answers showed that 82.49% of them are attentive to this kind of information.

Therefore, for shaping the relationship between the OSN and a company's image, four variables have been considered: company's image (CI), users' social influence on OSN (USI), organizational promotion in OSN (OP), perceived image in OSN (PI).

These variables have been measured using a 5-

point Likert scale. First of all, the respondents were asked to think about a company whose products/ services are in their interest area and to answer to a series of questions regarding that company and their activity on OSN using a 5-point evaluation scale (1 - strongly disagree; 2 – disagree; 3 - undecided;4 - agree;5 - strongly agree), as in the following [1,2,4,8, 17,19]:

- Company's image (CI):
- Emotional appeal (EA): I have a good opinion about that company;
- Products and services (PS):
- The company is offering high quality products/services (PS1);
- The company is offering products/ services that are good value for money (PS2).
- Leadership and vision (LV): The company recognizes and take advantage of market opportunities.
- Organizational promotion in OSN (OP):
- Active advertising (AA): The company is actively advertising its products/services in OSN;
- Active involvement (AI): I am constantly receiving updates and information about that company's products/services.
- Users' social influence on OSN (USI): measured through the number of direct contacts in OSN who have adopted/used the products/services of that company divided by the number of direct contacts that the respondent is having on ONS.
- Perceived image in OSN (PI):
- Friends' opinion (FO): My friends will be impressed if I own/buy that company's products/ services;
- Media image (MI): The company gets mainly positive coverage in media;
- Sense of achievement (SA): I would feel a sense of achievement to having that company's products/ services

The figure 2 in the following is picturing the considered constructions.

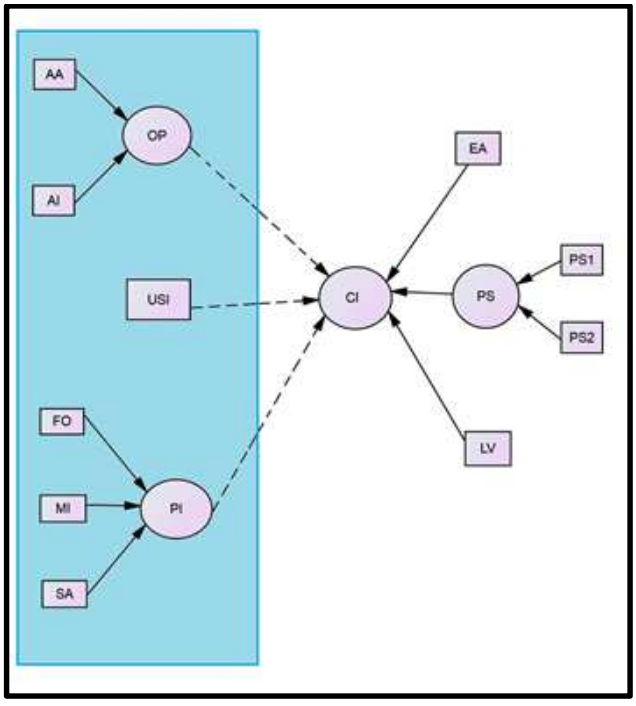

Figure 2: The analysed construction

Using the GSTMS 6.0. Software, the Deng's degree of grey incidence have been computed (Figure 3) and the results are presented in Figure 4.

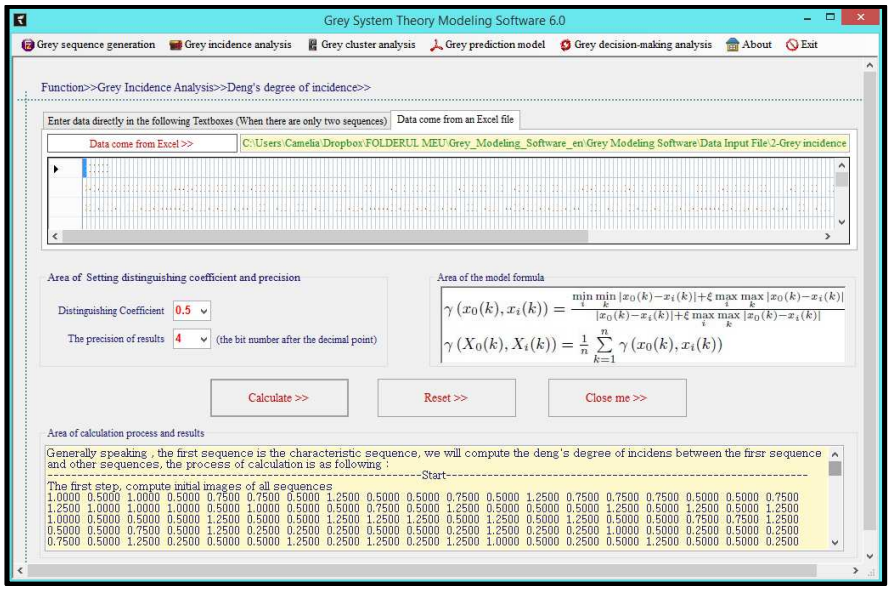

Figure 3: The Deng's degree of grey incidence

The computed values of Deng's degree among perceived image in OSN and company's image is 0.802 showing a strong relation between the image created by an user in online social networks and the company's image. (Figure 4)

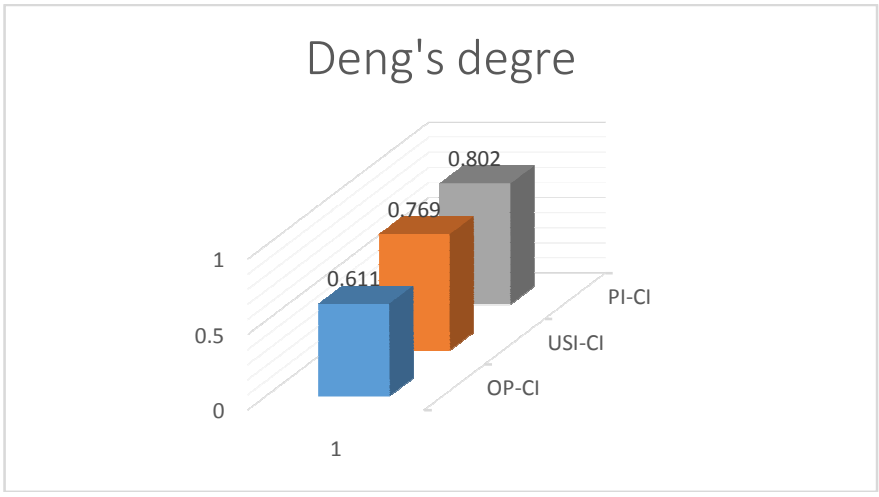

Figure 4: Deng's degree of grey incidence

Camelia Delcea, Ioana-Alexandra Bradea and Ramona-Mihaela Paun (2015), Journal of Internet Social Networking and Virtual, DOI: 10.5171/2015.839277

Also, the degree of incidence between users' social influence and a company's image is also picturing a close relation: the user's opinion on a certain company is related to the number of user's direct contacts that have adopted the company's product/service. On the other hand, less related, in this case, are the company's efforts on reaching its possible customers, both through advertising and updates, as the degree of incidence to OP-CR is closely to 0.6, lower than the values obtained in the other two cases.

Concluding Remarks

With the appearance and development of the new Web 2.0 technologies, the ONS have become part of our every-day life, being a proper environment for spreading the information and knowledge with people from all around the world.

In this context, the present paper aims to shape the relation between users' activity in the online environment and their opinion of a company measured through its image. For this, a case study has been employed and a grey incidence analysis has been conducted among the four considered variables. The results have been concluding: the company's image is related to all three constructions: the users' social influence, the organizational promotion and the perceived image in OSN. Among these, the perceive image has the strongest relation with users' opinion about a company's image, which can be useful in the impression management process.

As further work, the company's image and image will be putted into connection with the users' actual buying decisions, determining to which extent the investment on increasing a firm's image can have visible and sustainable effects on its sales.

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Camelia Delcea, Ioana-Alexandra Bradea and Ramona-Mihaela Paun (2015), Journal of Internet Social Networking and Virtual, DOI: 10.5171/2015.839277