

Social Media Impact on Human Resources Management Strategies

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Abstract

The aim of this paper is to do a research of human resource management in Romania for the IT sector, and focus the attention to a couple of things like culture, trainings and the impact resulted on social media that this companies and their employees are producing.

The use of social media has a huge impact on the quality of the work and also is contributing to strengthen the relationships between employees. It can be a good resource in attracting new talents and also promoting the company. This research used mined data from LinkedIn and other social media and publicly available websites in order to statistically test hypotheses using the Pearson chi-square method and successfully finding 6 strong correlations between data analyzed for Romanian software development companies.

Key words: Human resources management, Social media, IT Industry, Data mining, software

J.E.L. classification: J 24, M 53, O 15.

1. Introduction

There is no secret that social media is part of our lives and considering the growing rate of mobile devices, the general public is becoming more and more verbose through this communication channels. Currently there are more than 2.5 billion social media users worldwide and studies show that there will be 3 billions by 2020 ([Bellini, 2016](#)), this growth will be mainly composed of adults as Greenwood ([2015, p.4](#)) illustrates that more than 2 thirds of Americans with the age over 30 are using social media. With this is so called maturation of the social media, we can see that it has implications beyond marketing and social studies in areas like human resources management, B2B innovation ([Jussila 2015](#)), business intelligence, governments ([Nascimento, et al, 2016, p.1](#)) and others. In fact social media can be used as a research instrument no matter the area the researcher is interested in, the diverse content produced by the interaction of the users of this networks can be used as quantitative and quantitative data on the research topic. On the other hand there is a huge increase in the usage of social media regarding product development or business process as consumers constantly provide feedbacks and suggestions regarding products or services provided by companies ([Nascimento, et al, 2016, pp4-5](#)). On this premises the most innovating companies have developed crowdsourcing campaigns that through social media are exploiting new ideas and carry out market tests. For example Danone developed a campaign using social media that allowed customers to interact with the brand in order to develop two new products Snack Pot and Activia Pouring Yoghurt that were successfully launched in the market ([Arnaboldi, et al, 2016, pp4-5](#)).

LinkedIn has established itself as the world's largest professional network, becoming the first choice for companies when it comes to recruiting or other human resource activities and practices, also professionals are continuously maintaining their profiles updated, that act more like a curriculum vitae in the web 2.0 era. In this paper we will analyze both the behavior of employees and also the interactions they have with the companies they are working at, in order to verify if there is any statistical correlations and try to answer the following research questions: Is there any

correlations of trainings done by employees on firms turnover; correlations between gender and company profits and turnover and also relations to profitability and previous employer experience.

2. Current Literature review

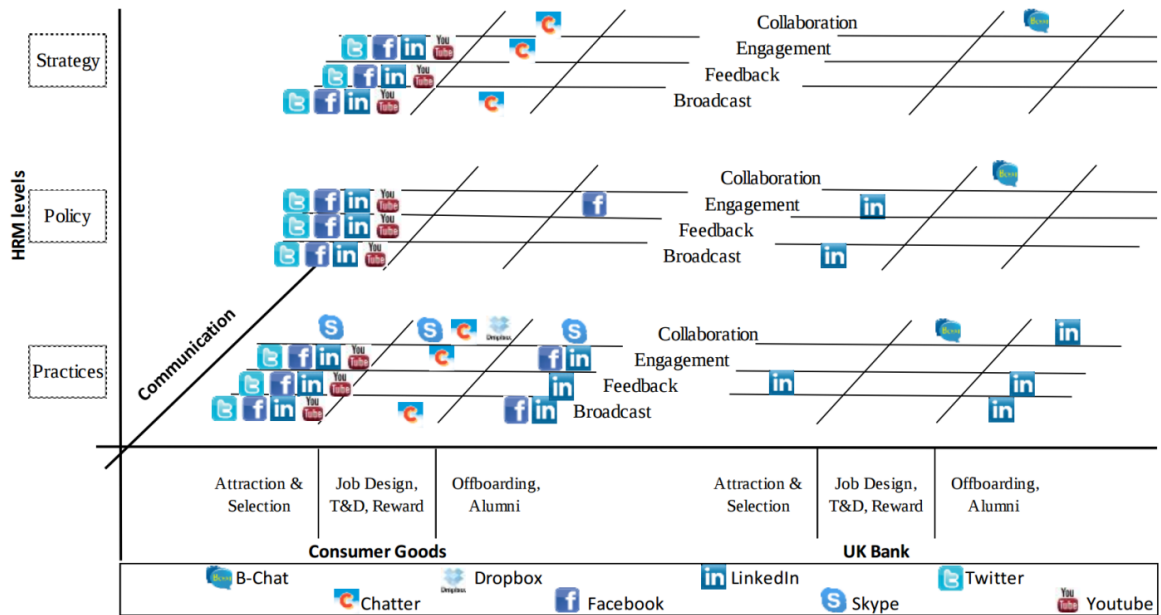
Even if most of the research regarding social media is related to marketing, there are couple of recent papers on the impact it has on human resources management, Silva and Brandão ([2015, pp.72-76](#)) conducted a research in order to discover professional patterns with data mined from LinkedIn in order to help educational institutions interested in planning academic activities and upgrading curricula for development of people and their skills and experience required by organizations in Brazil.

Most of the academic papers stress the importance of social media in recruitment process and the strategic planning of the human resources department alongside with the instruments available in social networking websites like Facebook and LinkedIn([Haghshenas, et al, pp.46-49](#)). Wolf and Sims ([2014, pp.2-6](#)) focus their effort in understanding the implications of social media on all levels of human resources management that is seen as a Communication system for job Design, Training and Development, Reward - Engagement and Collaboration. They also list the SMN utilization in different human resources activities for companies in the banking and consumer good industries for 3 different HRM levels: practices, policies, strategy, presented in the figure no. 1.

As mentioned before most academic papers regarding social media are in regards to marketing, but there is a sensitive issue about social media governance and policies that also affects the human resources as well and is quite well documented by Mazey ([2016, pp.85-106](#)) whom conducted a qualitative content analysis on 25 social media policies of top 500 Fortune companies in 2015. The findings of this paper illustrated that there is a continuous concern over what employees are posting on social media websites that might interact with the company's values and brand, on the other hand if promoting the company to present the best manner possible.

In Clearswift ([2009, pp.3-9](#)) are pointed out some serious threats in using social media in organizations like congesting the network with unwanted multimedia content or even sharing publicly private information that is intended only for internal use, moreover employees can use social media to organize riots and sabotage the management. Even so the usage of internal social networks inside companies is widely spread, Hauptmann and Steger ([2012, pp.26-43](#)) conducted a comparative analyses in two companies in order to see the usage of social media and concluded that they actually recommend that management should take an active role in the usage of social media on a daily basis and taking the initiative to create environments for a better communication and community building and also putting in place rules of conduct in this environments.

Figure no. 1. Social Media Utilization: Case Studies Comparison



Source: Wolf, Sims 2014

3. Collection of data

The first step when it comes to using social media for HRM purposes is LinkedIn and more specifically the newly added feature *recruiter tool* for talent solution. First launched in 2008 with limited features today's gives access to an network of more than 400 million members, on top of that offers a versatile advance search tool that allows user to identify possible candidates by an array of options like: previous experience, education, skills, location and many others.

In order to access this information developers can make a request to access an application programmable interface that enables to create innovative professional applications, after the approval process and agreeing the terms of conditions users can do a limited daily requests to LinkedIn using the provided access credentials. For the purpose of this research there was the need for information about employees and their employers' companies financial data. In order to obtain this financial information a data mining procedure was used in order to obtain the turnover, profit, VAT identification number information publically available on listafirme.ro and mfinante.gov.ro. The next challenge was matching together this information, usually on LinkedIn the information available is only for marketing purposes and often the company name is simplified or they show only an internal product or brand that they are promoting, for this reason there were correlated only 1200 employees with their company data out of 1900. For the mining process there is available an increasing number of software options as third party modules and libraries for any programming language, for this research the scripts used to collect and sort the data was developed in python with the help of selenium, BeautifulSoup, mechanize, urllib and the data has been stored in csv files. Based on the names of the employees an algorithm was developed to match the known gender based on list of names publicly available for males and females. During this mining process a list of 1200 employees has been collected with the following data available: name, gender, company, company vat id, turnover and profit for 2015, if the company is profitable, they type of firm; small if the turnover is below one million Ron, big company if the turnover if above one million Ron, title, LinkedIn profile url, number of connections on LinkedIn, months of previous experience, years of previous experience, number of previous firms the employee worked for, bool variables if the user has trainings or certificates, graduation year and the university where he graduated.

4. Data Analysis and Results

The software package used for analyzing the data for this research is IBM SPSS version 20 and have run 28 Pearson's chi-square tests for independence being able to find significance correlation

being and successfully finding strong evidence of correlation on 4 tests with a significance level 0.005 and two tests with a significance level of 0.01. Pearson's chi-squared test (χ^2) is a statistical analysis test used for the examination of frequencies of two nominal-scaled variables in a cross-tabulation table in order to determine whether the variables have a statistically significant relationship (Burns, et al, 2014, pp.358-359). The Chi-squared computed value is equal to:

$$\chi^2 = \sum_{i=1}^n \frac{(Observed_i - Expected_i)^2}{Expected_i}$$

Where

$Observed_i$ = observed frequency in cell i

$Expected_i$ = expected frequency in cell i

n = number of cells

All the tests presented below are based on a sample of 1200 employees in software development companies located in Romania.

Based on the information mined from the social media websites and the local government companies with a significance level of 0.01 there is evidence of a correlation between the profitability of a firm and the previous number of years of experience of their employees: Pearson chi-square value 88.69, with 43 degrees of freedom, for this test 63% of cells had expected count less than 5, so we need to take into consideration the likelihood ratio as well of 0.01.

Another test with a low significance level of 0.069 is the association found between the type of firm and the graduation year of its employees, the data taken into consideration is if the firm has a turnover less or more than one million RON and the year of graduation listed on social media; chi-square value 44 and 33 degrees of freedom. 210 employees out of 258 that have trainings work in big companies, there is significant evidence of a relationship between the turnover and the number of trained personnel a company has with a significance level of 0.016.

With a significance level of 0.002 we can accept the alternative hypothesis that there is an association between profitability of a firm and the number of previous jobs an employee had most employees more than 20% in profitable firms are at the third job.

Based on the gender of the employees in the IT companies there is a strong significance association with profitability of the firm and also with type of firm, 99.4 % of females working in profitable firms, both tests presented above have a significance level below 0.005.

5. Conclusions

The disruptive impact of the internet technologies with the engagement of users on social media platforms creates enormous amount of research material for human resource managers to interpret and take action on. In today's business environment more specifically in the IT industry it's always about speed to identify and apply strategies, as illustrated in the research section companies with bigger turnover allocate more resources on trainings and the recruiting having an easy to identify patterns. In the IT business there is a continuous demand for highly trained personnel that is the core asset of a software development company and more important how qualified the employs are as shown in the research regarding the level of trained people in the firm. With the ever increase pace of change in our society employees are forced to continuously acquire new knowledge and skills (Cascio, 2010, pp.322) via trainings or changing the company is working for. In the company culture the gender diversity also plays a huge role, understanding this aspect and putting it into practice can be challenging considering this is more a technical domain, in the sample analyzed out of 1200 employees only 348 have been females.

One of the limitations of this research can be that some of the employees did not fill the information on their profiles, this does not mean that they do not have the experience or the training, another point that need to be mention is that LinkedIn search algorithms presents the information relevant to the person is doing the search and this can affect seriously the tests.

In this research we can see that there is a huge correlation between gender diversity and the profitability of a company and also the lever of experience, skills and training level of employees with turnover.

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