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Social media usage vs. stock prices: an analysis of Indian firms

Bhavya Kaushik, Harshit Hemani, P. Vigneswara Ilavarasan*

Indian Institute of Technology Delhi, New Delhi, 110016

Abstract

This paper is designed to investigate in detail the way top traded firms of India use social media (SM) and how it influences their stock prices. The purpose of this paper is to observe whether there exists any relationship between the SM usage and the company's stock price. This paper relates NSE stock price trends of each firm with its SM usage and SM popularity, using tools such as correlation, regression and ANOVA. For the database, SM activities of NIFTY 51 firms, such as monthly number of posts and monthly number of replies to users, were recorded on the four SM platforms: Facebook, Youtube, Twitter and LinkedIn. This paper draws a conclusion with an assertion about the extent to which a firm should give importance to investing money in SM adoption strategies, SM marketing strategies, SM customer care strategies and so on.

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Keywords: *social media (SM); stock prices; social media usage; social media popularity; NIFTY 51 firms; India*

1. Introduction

Social media (SM) has impacted the world extensively. It has reduced the communication barriers to a great extent. It represents a piece of information technology that can affect business both outside and inside a firm. Today, Facebook's daily number of active users is an incredible 1.3 billion worldwide. SM is revolutionizing today's world [1]. These SM platforms today have a very widespread reach to potential customers for a vast variety of businesses. More importantly, this widespread reach has increased exponentially over the years and is expected to grow in a similar fashion in future [2]. This fact has fundamentally altered business strategies in the past decade [3]. Businesses have discovered this platform of SM to market their products [4], to communicate with their customers and work upon their queries efficiently, thereby enhancing product design, to build relationships with customers and introduce loyalty programs and to implement e-commerce platforms mutually beneficial for both customers and businesses themselves. Literature is rich with papers discussing the

* Corresponding author. Tel.: +91 11 2659 1174
E-mail address: vignes@iitd.ac.in

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role of SM in several aspects of a business. However, there are inadequate studies focusing on how a firm's sole effort on SM strategies can directly affect its stock prices. This perspective is important for businesses to plan judicious investment in SM activities. This paper addresses the relationship between SM adoption of a firm and its stock price.

The analysis in this paper reflects whether stock prices are affected by the SM activities of the leading firms in India. Some of the examples where well-reported SM events had affected stock prices of companies include the following: United Breaks Guitars: Musician Dave Carroll's guitar broke during a trip with United Airlines in 2008. He claimed for the compensation several times but was declined persistently. After this, Dave recorded songs titled "United Breaks Guitars" and uploaded on Youtube. This SM activity created a huge loss for the company [5]. The stock price fell by 10% costing $180 million to the shareholders. United Express Flight 3411 Incident: On 9th April 2017, a passenger was thrown out by the airport security. Later, a video recorded by one of the passengers went viral, recording 6.8 million views in less than a day. The stock prices were reduced by 0.2% due to negative publicity [6]. Getaway Industries: Robert F.X. Sillerman bought Getaway Industries in 2011. He stated in SM that the new company would work as a launching pad for his new venture. The company's stock increased from 2 cents to nearly 3$ in one day [7]. This sudden 25000% spike in the stock price of the company can be well attributed to SM. Under Armour: In 2015, the sports apparel company Under Armour was endorsed by famous golfer Jordan Speith. In a matter of months, Jordan Speith won the Masters Tournament and the U.S. Open [8]. This should have merely increased the product sales for a while. However, later the golfer also went on to claim his trophies and his green jacket in upcoming months. His activities indirectly marketed Under Armour and started influencing the stock prices soon, rising from $64.22 in early 2015 to $104 in September 2015.

2. Review of literature

SM is 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 [9-11]. Some authors including Culnan et al. [12] and Ilavarasan and Rathore [13] laid out systematic guidelines for fruitful implementation of SM strategies for businesses. They identified different functional blocks of SM and their efficiency for a variety of SM platforms. They highlighted the differences in ideal SM strategies for different industry sectors. They concentrated on the importance of 'mindful adoption' and 'community-building'. Regardless, they did not directly put up concrete quantitative studies of direct and sole impact of SM activities on stock prices. Oh and Sheng [14] investigated only stock microblogging platforms and came out with the result that the investors are strongly influenced by trending sentiment on stock microblogging platforms. Zhang et al. [15] dealt with correlating the emotional outbursts of audiences on twitter with the next-day stock prices of firms. However, stock microblogging activities and emotional outbursts on twitter cannot be controlled by firms themselves, hence there is a need to study those SM platforms and activities which are sensitive to firms' strategies.

Ruiz et al. [16] addressed correlation of traded volume change and stock price change of a company with the company's twitter activity. They were able to find out a convincing correlation between the same-day traded volume and a feature which quantified the number of connected posts on twitter. However, correlation with stock prices came out inconclusive. Finding out a relationship with stock prices has wide implications. This paper will deal with deep SM analysis and specifically relate stock price changes.

Paniagua and Sapena [17] elaborated on how SM can outsource information regarding new promising products, initiatives and policies announced by firms. They argued that anticipation of a good product drives investment in stocks, hence having a positive impact on stock prices. This process is enhanced by SM nowadays. This does not necessarily mean that the concerned company has improved its SM strategies. Maybe there is no change in SM activities of the company but the new product is good, hence people are investing