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Full Length Article

The role of social media and brand equity during a product recall crisis: A shareholder value perspective

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ABSTRACT

Utilizing an event study methodology of 185 product recall announcements, this study examines to what extent social media hurts a company's shareholder value in the event of a product recall. In addition, we explore whether a company's brand equity and engagement in online chatter potentially mitigate the negative effects of social media surrounding the recall. We operationalize four metrics of online word-of-mouth (WOM) that may moderate negative product recall effects: volume, valence, growth rate, and breadth. The findings suggest that product recalls result in significantly negative abnormal returns for firms. Furthermore, the volume, valence and growth rate of online WOM exacerbate this negative effect of a product recall on firm value. Most importantly, we find negative effects of the volume and the valence of online WOM on firm value are lower for brands with strong brand equity. Surprisingly, we find no effect of company involvement in mitigating the potential negative effects of social media during a product recall. Our findings highlight the threats of product recalls and demonstrate that building brand equity may help protect a company in the social media environment.

1. Introduction

> *The vehicles we make today are the best in memory and I'm confident that they will do fine, on their own merits. And our company's reputation won't be determined by the recall itself, but by how we address the problem going forward. What is important is taking great care of our customers and showing that it really is a new day at GM.*
>
> [Mary Barra CEO General Motors]

In her open letter to General Motors' employees, commenting on the massive recall of cars related to faulty ignition switches, Mary Barra stresses the importance of the company's brand equity in addressing the problem. One way GM has tackled the recall is via a social media strategy focused on Facebook and Twitter, communicating directly with individual consumer posts (Goel, 2014). In a social media environment, consumers not only post their opinions about the brand but they also observe how the brand reacts and treats others. How this environment affects the consequence of a product recall event and how to overcome a product recall crisis in the presence of online social media, has become an important strategic question for the firm.

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Based on USASearch's Product Recall Data, from January 2010 to December 2013 there were 5,861 product recall announcements across various industries. On average, four product recall announcements occur every day. Therefore, "it is probably only a matter of time for any product manufacturer to have one or more products recalled" (Berman, 1999, p. 69). Product recall events impose legal costs, affect sales, raise manufacturing costs, dilute brand equity, and hurt financial value, posing a significant threat for brands and companies (Chen, Ganesan, & Liu, 2009; Thirumalai & Sinha, 2011). There are substantial direct costs (e.g., cost of implementing the recall, lost inventory, and reversed sales) and indirect costs (e.g., product liability claims and negative brand image) incurred when a product is recalled due to the presence of unsafe, hazardous, or defective conditions (Pruitt & Peterson, 1986). It is imperative for companies to understand the potential damage product recalls may inflict while finding ways to mitigate their harm.

Empirical work examining product-harm crises is scant and scattered across a number of functional areas with most attention focused on positive and negative consequences of the recall. On the positive side, the resulting outcome consists of reducing the number of injuries and recalls in the future (Kalaignanam, Kushwaha, & Eilert, 2013). On the negative side, product recall announcements have been documented to reduce demand (Marsh, Schroeder, & Mintert, 2004) and decrease future purchase intentions (Siomkos & Kurzbard, 1994). Recalls have also resulted in significant shareholder losses for publicly traded companies in the automobile and the food and drug industries (Davidson & Worrell, 1992; Jarrell & Peltzman, 1985; Thomsen & McKenzie, 2001). More seriously, the loss of shareholder value is often substantially greater than the direct cost of the recall itself, including those associated with destroying or repairing defective products (Govindaraj, Jaggi, & Lin, 2004). This market overreaction is generally based on pessimistic expectations of all potential losses associated with a recall including opportunity losses related to future sales because of brand deterioration and private litigation (Rubel, Naik, & Srinivasan, 2011). Investors are particularly sensitive to market information and react abruptly to exposures that put expected future cash flow at risk (Govindaraj et al., 2004).

Still, extant work in the area of product recalls has yet to consider how the evolving social media environment affects marketplace responses. More specifically, the impact of online word-of-mouth (WOM) on the stock market in the event of a product recall crisis has yet to be explored. Social media has created new rules and challenges for marketing strategy (Deighton, 2010; Fournier & Avery, 2011). We are all too familiar with the popular social media platforms (e.g., WordPress, Twitter, YouTube, and Facebook) that have proliferated in the media landscape to yield significant influence on organizations under a product recall crisis. For example, when Toyota announced a product recall on January 26, 2010, in light of an accelerator pedal problem, sixty percent of the online chatter about Toyota during the subsequent week was associated with key words including "recall," "pedal," and "fix" (Brownsell, 2010). At the time, Toyota suffered a seventeen percent weekly plunge in share price (down from \$86.78 to \$71.78) as markets reacted to its enhanced risk exposure. Despite anecdotal evidence, an empirical gap remains with regard to the effects of social media on firm value within the context of a product recall crisis. The overarching goal of this study is to examine social media effects and their interaction with the role of brand on shareholder value during a product recall crisis.

This study delineates four metrics of online WOM that may exacerbate negative product recall effects: volume, valence, growth rate, and breadth. The majority of research in the online WOM area has explored two metrics, its volume and valence (Dellarocas & Narayan, 2006). New communication channels such as blogs and tweets represent potent threats to firms because small-scale WOM can inflict a large-scale impact on a company's brand equity and shareholder value (Gaines-Ross, 2010). Researchers have found that volume of online WOM plays an important role in influencing product sales (Chevalier & Mayzlin, 2006; Duan, Gu, & Whinston, 2008). The valence of online WOM has proven to have significant impact on companies (Chen, Liu, & Zhang, 2012; Chevalier & Mayzlin, 2006; Godes & Mayzlin, 2004; Tirunillai & Tellis, 2012). Empirical evidence has also shown that the market reactions to postings of rumors on the Internet can significantly influence stock returns and trading volume (Clarkson, Joyce, & Tutticci, 2006). Although speed of delivery and multiple information platforms are important features in the Web 2.0 environment (Kaplan & Haenlein, 2010) the growth rate and breadth of online WOM are largely ignored in the literature. Rust, Ambler, Carpenter, Kumar, and Srivastava (2004) stated that, "there is much yet to be learned about how the Internet environment affects the customer. In general, increased communications and computations capabilities change the nature of the relationship between the marketer and the consumer in ways that are not yet fully understood" (p. 84, emphasis added). A second goal of this study is to provide diagnostic insight into how different social media metrics may moderate the impact of a product recall announcement on firm value.

Additionally, we examine the level of company involvement in social media during a product recall crisis and how such actions may attenuate the negative effect on stock performance. Though prior research in the domain of product recalls has examined company response strategies (Chen et al., 2009), the aforementioned characteristics of the Web 2.0 environment may fundamentally alter a company's optimum product recall strategy. Although companies cannot control the spread of WOM on the Web, they can use social media to get involved in conversations and influence and shape discussions in the desirable direction of a company's mission.

Lastly, the influence of social media on stock performance may not be homogeneous across brands (Iyengar, Han, & Gupta, 2009). Conventionally, branding is viewed as a strategic tool for the planning and execution of a firm's risk management projects (Rego, Billett, & Morgan, 2009). However, a deep understanding of the risk mitigation properties of brands is largely underdeveloped, especially in the Web 2.0 environment. Two powerful forces confronting brands in this new environment are transparency and criticism (Fournier & Avery, 2011). Crisis events are especially evocative for these dimensions, and the social media environment exacerbates crisis effects. Companies with strong brand equity may command loyalty and price premiums, but they also demand responsiveness and transparency to a greater degree. This issue raises the question as to whether a company's brand equity