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Characteristics and stock prices of firms flamed on the Internet: The evidence from Japan

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ABSTRACT

In this study, we investigate the economic impact of flaming on the Internet using Japanese data. In examining the data on firms that experienced flaming between 2006 and September 2013, we establish the following three main findings. First, large firms and ones with negative net income are more likely to be flamed on the Internet. Second, flaming alone may be too weak to impact the stock prices of target firms in the short-term, although it can lower the stock price of target firms at a later period, or when newspapers report the same event. Third, the negative market reaction grows when the flaming content is serious.

1. Introduction

In this study, we examine the economic impact of flaming on the Internet using Japanese data. The phenomenon of flaming has received a lot of attention from both practitioners and academic researchers over the past 20 years. Many studies associate flaming with computer-mediated communication (O'Sullivan and Flanagin, 2003; Siegel et al., 1986). A typical definition of flaming is "the expression of strong and inflammatory opinions to others electronically" (O'Sullivan and Flanagin, 2003, p. 161). However, other researchers argue that defining flaming in the context of online behavior assumes technological determinism and confuses the behavior with its causes (Thompsen and Foulger, 1996). Here, we basically follow the definition of Moor et al. (2010, p. 1537), that flaming involves "displaying hostility by insulting, swearing or using otherwise offensive language" towards a person or entity.

Although flaming has been around for decades, its incidence has increased dramatically since 2011, when social network services (SNS), such as Twitter, Facebook, LINE, etc., became more common due to the use of smartphones and tablet computers.

Despite its convenience and usefulness for communication and the instant sharing of information with a large number of people, SNS tends to intensify negative online behaviors such as flaming. The result can be serious risk to flamed firms and people. For instance, when an employee at a fast food chain posted a photo of himself in the refrigerator of his workplace on Twitter,[1] it led to a half-day suspension of business while foodstuffs were discarded and the store disinfected. Another tweet with a photo of naked men in a famous restaurant chain resulted in closure of the restaurant and damage to the company's reputation.[2]

To reduce the risk of being flamed, a number of large Japanese companies set SNS guidelines for their employees that prohibit employees from posting confidential company information, as well as inconsiderate or negative comments about products, services, clients, supervisors, or competitors, etc. Other companies have developed businesses that manage the online reputation of client firms. Industries and states have exerted considerable effort to reduce the risk of flaming and construct better Internet governance. However, legal rules may exercise undesirable external power over participants and providers of virtual communities, and outcomes are often unsatisfactory because of international borders with different laws and legislative processes that are slower than technological changes. Acknowledging these difficulties, researchers stress the importance of industry self-regulation, including guidelines on Internet sites (Wall and Williams, 2007; Suzor, 2010).

Although there have been many social-psychological studies on flaming, to the best of our knowledge, no research has examined whether and how flaming affects a firm's value measured by stock

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[1] This event happened at Hotto Motto in August 2013.
[2] This event happened at Ohsho Food Services, Co. in September 2013.

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price responses. Stock prices are often used to measure a firm's value, because they theoretically reflect the present value of the firm's future cash flow or profits. Flaming can damage such values because the display of hostility against a firm may damage its reputation and brand, resulting in decreased sales and market share, and increased costs of capital and crisis management.[3] These negative impacts have been intensified by the diffusion of SNS, which can widely and immediately spread negative news regarding target firms.[4]

To address this gap, we examine the economic impact of flaming. Specifically, we examine data on flamed firms listed on the first and second sections of the Tokyo Stock Exchange (TSE) between 2006 and September 2013. We find that large firms with negative net income are more likely to be flamed on the Internet. Other findings include: (1) flaming alone may be too weak to impact the stock prices of target firms in the short-term, although it can lower the stock price of target firms at a later period, or when newspapers report the same event; and (2) negative market reactions are intensified with the seriousness of the flaming contents.

The rest of this article is organized as follows. Section 2 provides background information, a literature review, and our working hypotheses. Section 3 describes the methodology and data. Sections 4 and 5 explain and discuss the empirical results, respectively. Concluding remarks are provided in Section 6.

2. Background, literature review and hypotheses

2.1. Background

As shown in Fig. 1, the number of flaming incidents has recently increased remarkably, causing serious problems to the target, be they firms or people. While flaming is sometimes caused by employee misconduct, as described in Section 1, even company executives can trigger flaming. For instance, Watami Co., Ltd., a chain of restaurants, became a target of flaming when an employee committed suicide. In particular, the founder and chairman of Watami announced the company's ideology to be "24 Hours a Day, 365 Days a Year, Work to the Death," which drew intense criticism. Appendix 1 shows that the stock price movements of Watami have been below those of its control firm, Kagome, during the period when Watami was flamed.

Many large Japanese companies issue SNS guidelines for their employees. These companies include McDonald's Japan, HP Japan, Coca-Cola Japan, IBM Japan, Intel Japan, Sony, NEC, Asahi Shimbun, and many others. Their guidelines prohibit employees from posting confidential business information, comments violating social ethics, inconsiderate or negative comments about products, services, customers, colleagues, or competitors. In response to the growing risks on the Internet, new businesses have emerged to manage the online reputation of firms. Such consulting companies watch for negative information or comments about clients and provide advice on managing a firm's reputation.

2.2. Literature review

Prior studies on flaming have focused mainly on its causes and characteristics. Early research attributes flaming to a lack of social or non-verbal context cues in computer-mediated communication (Kiesler and Sproull, 1992). Since then, a wider variety of explanations have been discussed, including deindividuation (Siegel et al., 1986), miscommunication (Derks et al., 2008; McKee, 2002), and reduced awareness of others (Kiesler and Sproull, 1992). Other studies have examined how flaming occurs in specific online media, including Affirmative Action discussion forums (McKee, 2002), Usenet (Vrooman, 2002), closed-group support systems (Reinig et al., 1998), and YouTube (Moor et al., 2010; Lindgern, 2010; Linkletter et al., 2010).

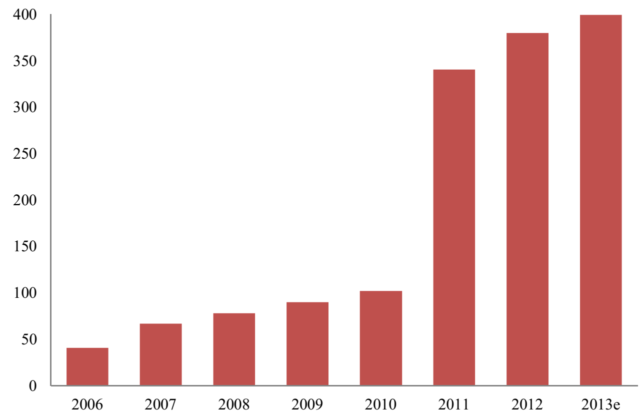

Fig. 1. The number of online flaming events in Japan.
Notes: 1. 2013e shows the estimate based on the year over year growth rate of the number of flaming events between January and September 2013; and
2. Complied by the authors from the data provided by Eltes Co., Ltd.

These studies reveal that freedom of expression can generate unexpected side effects, such as flames caused by comments that are irresponsible in their mode or intent. Industries and states have made an effort to reduce the negative byproducts of free expression, and to construct better Internet governance by creating a set of guiding rules and norms for activity on the Internet (Wilson, 2005).

Although it is true that freedom of expression is not unconditionally guaranteed, there has long been a debate as to whether regulations to stop flaming are needed and how they would be administered. For example, China is known to have taken measures to control the information environment within its borders by suppressing and filtering information on the Internet (Zittrain and Palfrey, 2008). Such content control online, which restricts Internet access to certain materials, is not limited to socialist countries. Other states have also set legal requirements blocking citizens from accessing or disseminating certain content on the Internet. Such content includes propaganda against the democratic order, hatred and violence against parts of the population, and erotic depictions of children.[5]

However, it is difficult to draft laws that adequately address the needs of participants and providers of virtual communities, due to different laws within international borders, legislation processes being slower than technological changes, and the right to privacy of Internet users. Recognizing that legal rules might exercise undesirable external power and generate unsatisfactory outcomes, several researchers have stressed the importance of self-regulation to reduce tensions among users and providers of the Internet. They recommend instead punishing the users who break the rules stipulated in terms of service or community guidelines on Internet sites (Wall and Williams, 2007; Suzor, 2010).

Although there have been many social, psychological, and legal studies on flaming, to the best of our knowledge, no paper has examined whether and how flaming affects a firm's value. To

[3] Such links between flaming and negative impact on business are discussed later in the context of the development of our hypotheses.

[4] Siegel et al. (1986) show that anonymous and simultaneous communication increases the frequency of uninhibited behavior, which is observed more commonly in computer-mediated than in face-to-face communications.

[5] These examples are from Article 4 of the "Interstate Treaty on the Protection of Human Dignity and Protection of Minors in Radio and Telemedia" (JMStV), a German treaty among all federal and regulated providers of Internet and television content to protect youth.