WHAT TRIGGERS SHARING IN VIRAL MARKETING? THE ROLE OF EMOTION AND SOCIAL FEATURE

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Abstract

Viral marketing has attracted attention from both academics and practitioners. With the rise of user-generated content (UGC) and broadcasting networks, viral online video advertising campaigns (viral advertising in short) are an emerging trend in viral marketing. Previous literature mainly studied the influence of network structure on viral advertising. Here, we extend such works by decomposing the diffusion network into individual sharing behavior. We based our work on theories of emotion and social networks by proposing a framework that specifies the role of emotion and social feature on individuals' sharing of online video advertisements in viral marketing campaigns. The framework will be tested using real-world data extracted from online broadcasting networks in the future work.

Keywords: Viral marketing, content sharing, emotions, social network.

1 INTRODUCTION

The rise of social media has dramatically changed the way people receive, process, and spread information. By weakening, if not removing the physical barriers of communication, social media services, especially the social broadcasting networks, can create more opportunities for messages to be shared and become viral. Such potential of virality evokes what is known as viral marketing.

Although initially, the main approach of viral marketing is e-mail promotion (Phelps et al. 2004), the boom of broadcasting service and user-generated content (UGC) boosts online viral video advertising campaigns. In this research, we focus the definition of viral advertising on the online viral video advertising campaigns in broadcasting networks. As an emerging stream of viral marketing, a successful viral advertising campaign can benefit the brand and sales by increasing customer awareness, promoting brand image and generating purchase intention (Phelps et al. 2004). Compared to advertising in traditional media, viral advertising online has higher speed of propagation, wider range of influence and more intimate sense of communication (Bampo et al. 2008). However, not all viral advertising campaigns turned out to be successful. Some of them might be shared numerously in social media platform, while others diminish before rippling through the social medium.

What shapes the success of viral advertising in social broadcasting networks? Bampo et al. (2008) modelled virality as being influenced by network structure, individual's behavioral characteristics and initial seeding. While previous research has studied viral advertising from whole network point of view (e.g. Susarla et al. 2012), the focus of this paper is the individuals in the sharing communities. We decompose the virality of online advertising as a large-scale electronic word-of mouth (eWOM), and treat each eWOM as one individual's content sharing. Therefore, this study intends to address the following research question:

How does one individual's sharing of online advertisement generate further sharing of the advertisement?

In order to answer the above question, we conceptualize individual's sharing of advertisement into two dimensions: the sharing of advertisement itself, as well as the sharing of individual-generated content. We also consider the influence of individual's social feature on further sharing. We design our study by taking emotion and social network related theories as our foundation before forming a systematic framework to explain the sharing behavior of individuals and how a person's role in a network contributes to the further sharing of video commercials. Messages about online video commercials or advertising from broadcasting networks will be extracted and analyzed to test our framework. The number of content forwarding will be used to quantify the measure of sharing. The larger number of forwarding a message has, the more this message is influential in stimulating further sharing behaviors. By examining the influences of emotional and social factors on the sharing behavior within broadcasting networks, we provide a useful insight into the diffusion of viral advertising and thereby, contributing to theories on emotions and viral marketing. The findings in this paper are also helpful for marketers and practitioners to design better viral online advertising campaigns, and can be used to amplify the influential power of their campaigns.

The structure of the paper is like follows. The next section gives brief introduction on the concept of viral advertising. In Section 3, we summarize the current status of previous literature. We then develop our conceptual model and hypotheses. Finally, the future work plan briefly explains the work to be done in order to complete this study.

2 VIRAL MARKETING AND VIRAL ADVERTISING

The invention of the term viral marketing can be traced back to Steve Jurvetson and Tim Drapper in 1997 (Camarero & San José 2011; Knight 1999). Viral marketing essentially relies on word-of-mouth (WOM). Although some scholars, such as Modzelewski (2000), think the value that customer get from

further propagation makes viral marketing different from traditional word-of-mouth, viral marketing is increasingly seen as equivalent to word-of-mouth advertising (Phelps et al. 2004). In this study, we advocate the definition from Bampo et al. (2008), and refer viral marketing as 'a form of peer-to-peer communication in which individuals are encouraged to pass on promotional messages' that creates explosive exposure within online networks (Bampo et al. 2008, pp. 273).

Viral email marketing is the main stream viral marketing campaigns in the earlier days. In e-mail viral campaigns, information flow is often sender-selective. That is, the receiver of information is often chosen by the sender (Sundararajan 2013). While in the context of broadcasting network, sender's sharing is broadcasted to all his or her audiences. Even so, social choice is still involved in the viral campaigns because the sender (initially a receiver) still has the option on whether to broadcast the content to subscribers or not. In such context, the content of sharing plays a more significant role in influencing further sharing behavior. Another difference between viral advertising in broadcasting networks and more conventional viral email marketing is that, the content of communication is not necessarily created by the marketer. In broadcasting networks, the content of peer-to-peer communication does not have to be hundred percent marketer-generated or purely consumer-generated. Instead, marketer-generated content, such as video advertisement, can serve as the original source embedded in further consumer-generated word-of-mouth. In such case, the content of communication among consumer networks consists both the marketer-generated advertisement and the consumer-generated comment. The uniqueness of viral advertising in broadcasting networks highlights the importance of content. Despite the broadcasting feature, viral advertising still essentially involves interpersonal communication, and thus, social features should not be neglected. Moreover, because of the great power interpersonal communication has in persuasion, viral advertising in broadcasting network has stronger persuasiveness than traditional mass media (Phelps et al. 2004; Rogers 1995). This strengthens the value of understanding viral advertising.

3   LITERATURE REVIEW

Many previous studies have focused on the role of social features in viral marketing and content sharing, such as network structure, social influence and social interaction. Network theories are widely applied to diffusion research (Vilpponen et al. 2006). When studying the virality, scholars often take the complete network of diffusion as the focus of analysis. For example, Bampo et al. (2008) examined the viral marketing campaign by looking at the digital network structure in an email forwarding campaign. Susarla et al. (2012) studied the diffusion of user-generated content in a complete network in YouTube, and found that social interactions have significant influence on the magnitude as well as the success of contagion. Degree distribution, node centrality, distance and clustering are examples of the commonly-used measures of social network. Studying the complete network structure have certain advantages. For example, it can provide better understanding over the whole picture and can consider the effect of non-adjacent nodes. However, the structure of network is not static, rather, the network structure changes while content spreads (Sundararajan et al. 2013; Kossinets & Watts 2006). In this research, rather than assuming the network structure as static, we put the whole diffusion network structure aside, and focus our research on each individual unit of sharing (as shown in Figure 1). Such a unit consists a sender, a receiver and a tie. Previous studies have identified tie strength as an important factor of information dissemination (e.g. Vilpponen et al. 2006; Levin & Cross, 2004). For example, Oh et al. (2013) suggested that strong tie can increase information sharing because of high level of trust. Bakshy et al. (2012), however, argued that weak ties can stimulate more sharing because weak ties often share novel information. However, tie strength (weak vs. strong) is a feature of the 'edge'. This study aims to focus on the influence of the individual sender; thus, 'node-level' social features such as centrality are more appropriate variable in the conceptual model (Borgatti et al. 2009).

Compared to the popularity of social factors, fewer literature has studied the content that actually flows in a network (Sundararajan et al. 2013). However, in order to achieve virality, the content should be able

to attract attention and stimulate its receivers' further sharing intentions. Thus, contagious content is an influential factor in determining sharing in viral campaigns (Bampo et al. 2008). In those works that study the content of message, emotion is identified as an important factor influencing sharing. Although previous literature has tried to specify the role of emotions on sharing behavior and diffusion (e.g., Armstrong and Sambamurthy 1999), the findings are conflicting (Berger & Milkman 2012). This brought the call for more rigorous study on emotions and transmission (Godes & Mayzlin 2004).
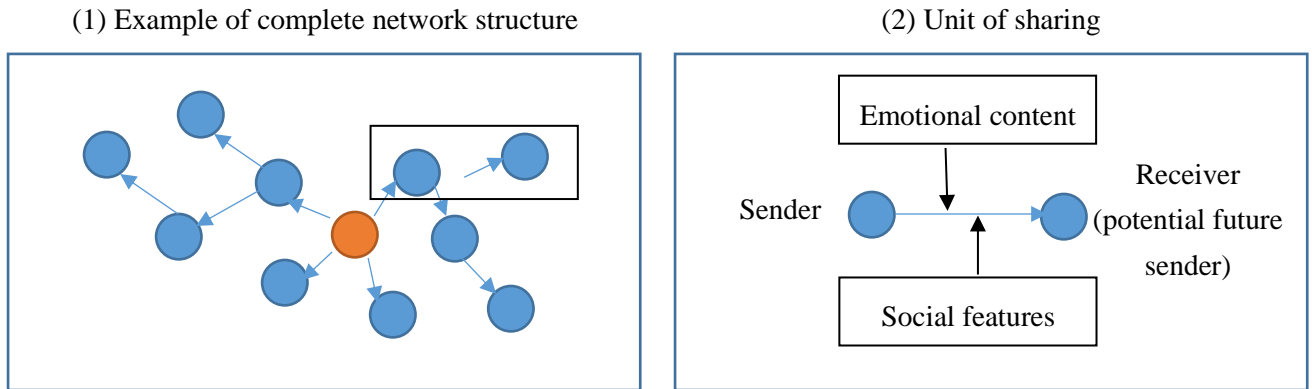
(1) Example of complete network structure   (2) Unit of sharing

Figure 1.   *Unit of study in this paper. (1) shows an example of a complete network structure with 11 nodes. Supposing this is a network of viral advertising, for each node, it shares the message further to others in their own social groups (Eckler & Bolls 2011). Those others are potential future senders and thus its potential adjacent node. Such relationship can be modelled as a unit of content sharing, as shown in (2). Such unit of sharing in (2) is the unit studied in this paper. Within such unit, the role of emotional content and social features are examined in this study.*

Seeding strategy has also been identified as an influential element that affects the success of viral campaigns. In some campaigns like the viral e-mail promotion, it is the marketer who determines initial targeted propagators (seeds) (Bampo et al. 2008). However, in terms of viral video advertising on broadcasting network, marketer's influence on the 'seeds' is limited because, in broadcasting network, the exposure to message is based on subscribers' previous subscribing choices. Compared with viral emails campaigns where marketers can proactively select their seeds, the role of marketers in targeting video advertisings receivers is smaller. Thus, in the broadcasting context, this study will not take seeding strategy as the variable of viral campaign.

Therefore, this study looks at individual's sharing in viral advertising, and explores the effects of emotional and social factors on attention, memorability, emotional contagion and influence, and how they affect the sharing afterwards.

4   CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

4.1   Emotion of Digital Content

Content of message is an important yet often overlooked element that influences diffusion of information. Firms are capable of stimulating brand-related content sharing online by smartly arranging content in social media (Sundararajan et al. 2013). Good content can efficiently attract attention and properly generate influence flow in online communities. There are two possible dimensions of content involved

in the sharing of viral advertising: the advertisement itself, and the additional consumer-generated content apart from the advertisement. For both dimensions, emotion plays an important role in linking the content with the sharing behavior. As stated by Berger and Milkman (2012), 'Emotionally evocative content may be particularly viral' (pp. 2).

4.1.1 Emotion of Advertisement Content and the Sharing of the Message

Making the content attractive and memorable can facilitate virality (Phelps et al. 2004). In traditional advertising, it is commonly believed that emotional content plays an important role in drawing attention and increasing the message attractiveness (Hazlett & Hazlett 1999). Meanwhile, emotion of advertisement can also enhance information processing and increase the memorability of contagious content, thereby increasing the sharing propensity (Phelps et al. 2004).

Emotion of advertisement content is the audience-perceived general affective state that the advertisement intends to communicate. It can be formed by the lines in the video commercials, the emotional tones and the actors' facial expressions, etc. Different from the mental affective experience of humans, emotion of advertisement is an emotional characteristic of the content based on audience's perceptions. Emotional valence is an influential factor for content sharing. It is a bipolar scale that measures the sentiment state from positive to negative (Heinrichs & Koob 2004). Some scholars argue that negative information is more likely to be spread out (Godes et al. 2005), others advocate that positive emotion will facilitate information propagation more. Berger and Milkman (2012) tested that positive content is more likely to be viral. In the context of viral video advertising, Eckler and Bolls (2011) studied the role of different emotional tones (pleasant, unpleasant, coactive) of video on consumers' attitudes and forwarding intentions. They found that pleasant emotional tone has the strongest effect on forming attitude and stimulating forwarding, while unpleasant emotional tone has the weakest effect. Considering that online content sharing often involves self-identity representation, the sharing of positive content tends to create positive effect on sender's identity, and thus more likely to occur (Berger & Milkman 2012). Therefore, it is possible that the valence of emotion (i.e. positive or negative emotion) plays an important role in influencing sharing of online advertising.

Apart from valence, the activation or the level of arousal is also a characteristic of emotion that may influence sharing behavior. Arousal is a 'mobilization' state; the high arousal (sometimes also known as activation) is a state of activity, whereas low arousal (sometimes also known as deactivation) is a state of relaxation (Berger & Milkman 2012, pp. 193). In terms of emotions, arousal and activation measure the affect expression intensity (Heinrichs & Koob 2004). High arousal emotions, such as anxiety and amusement, have stronger effects in driving sharing behavior than low arousal emotions like sadness and contentment (Berger 2011). Berger (2011) tested this using experiments, in which the manipulation of high arousal was to let students watch emotional videos. Therefore, it is reasonable to think the level of arousal in video advertisement can influence sharing behavior. Therefore, we propose that emotion of advertisement content will influence the sharing of the message. To be more specific, we hypothesize that:

H1a: The positive emotion in advertisement generates more sharing (number of forwarding) than negative emotion.

H1b: The high arousal emotion in advertisement generates more sharing (number of forwarding) than low arousal emotion.

4.1.2 Emotion of Advertisement Content and Emotion of Consumer-Generated Content

Advertisement will evoke emotional response from its audience (Hill & Mazis 1986). Emotional content in advertisement tends to transfer emotional stimuli to audience and elicit their emotions and feelings (Royo-Vela 2005). As illustrated by Pieters and Klerk-Warmerdam (1996), the audience of advertisement will generate similar emotions with the emotions displayed in advertisement content.

There is thus arguably a direct transference between the emotional characteristics in advertisement and the emotional characteristics responded by the sender as an audience. Therefore, the emotional stimuli in online advertisement may directly arouse corresponding emotions, and such emotions may be expressed in the consumer-generated content.

Moreover, emotional component in advertisement may also influence the cognitive evaluation of advertisement. As previous research suggests, positive and active emotions in advertisement content positively influence the audience's attitude towards the advertisement, and negative and passive emotions influence attitude negatively (Antonides & Ramadhin 1995). Because cognitive process can also result in affective consequence, such different evaluations of advertisement can then be reflected in the consumer-generated content with emotions. Referring to the above two possible processes, the following hypotheses were developed:

H2a: The consumer-generated content is more likely to show positive emotion when there is positive emotion in advertisement content.

H2b: The consumer-generated content is more likely to show negative emotion when there is negative emotion in advertisement content.

H2c: The consumer-generated content is more likely to show high arousal emotion when there is high arousal emotion in advertisement content.

H2d: The consumer-generated content is more likely to show low arousal emotion when there is low arousal emotion in advertisement content.

4.1.3 Emotion of Consumer-Generated Content and the Sharing of the Message

Emotional contagion theory suggests that emotional state can be transferred; that is, exposure to person who expresses emotions can cause emotional change of the observer (Pugh 2001). Although this contagion is original thought to occur in face-to-face human interactions (Hatfield & Cacioppo 1994), more recent studies also observe emotional contagion in computer-mediated communication (e.g. Kramer et al. 2014; Hancock et al. 2008). The emotion embedded in consumer-generated content reflects the emotion of the sender, and the receiver might experience such emotional contagion. According to Berger and Milkman (2012), "sharing positive content may help boost others' mood" (pp. 2), while sharing upset information tend to make other people sad.

Moreover, people's emotions tend to influence their behaviors. Consumers with negative product-related emotions are more likely to generate word-of-mouth. However, in online content sharing, users with general positive emotion seem more likely to diffuse messages. Moreover, research suggests that high arousal emotions tend to elicit active behaviors. If emotional contagion occurs, receivers who are exposed to high arousal emotion from sender-generated content are more likely to pass along the message. On the contrary, receivers who are infected by low arousal emotion would probably not share. Therefore, we propose the hypotheses that the emotion of consumer-generated content will influence the sharing of the message:

H3a: The positive emotion of consumer-generated content generates more sharing (number of forwarding) than negative emotion.

H3b: The high arousal emotion of consumer-generated content generates more sharing (number of forwarding) than low arousal emotion.

4.2 Social Feature

Although viral marketing is traditionally thought to be difficult to manage, Bampo et al. (2008) studied the process of viral marketing and found that 'social structure of digital networks plays a critical role in

the spread of a viral message'. Susarla et al. (2012) studied the diffusion of user-generated content in YouTube and the findings supported the strong influence of social interactions on the success of videos. Therefore, social feature is an important variable in online viral video advertising. When focusing on individual's sharing, the individual's social features should be taken into account in the study.

The subscription-subscriber relationships in broadcasting network (e.g. following-follower relationship in Twitter) do not require mutual agreement from both parties. That is, a user can subscribe to a publisher without the publisher's agreement, and the publisher does not have to subscribe back; similarly, a user can get subscribed by a subscriber without the user's agreement and the user does not need to subscribe back. Therefore, both relationships can be characterized as one-way directional relationships. While subscription relationship is an outward tie from the user to the publisher, the subscriber relationship is inward, indicating a tie directed toward the user from a subscriber. Degree centrality is an important property of social network and is used to represent the number of directed connections a node has. In this study, we characterize the number of subscriptions a user has as his or her outdegree, while the number of subscribers as indegree.

In a broadcasting environment, the outdegree centrality indicates the opportunity the user has to expose to the video advertisement. Everything else being equal, the more subscriptions a user has, tand the more likely for the user to receive the advertisement from his or her subscriptions' broadcastings. Moreover, the indegree centrality suggests the total subscribers of the user, i.e. the aggregate connectedness. The higher indegree centrality, the more channels the user has to connect with others (Wasserman & Faust, 1994), the more opportunities there are for the subscribers to receive the shared video advertisement (Susarla et al. 2012), and the more likely for the video to be shared further, given other conditions the same. Also, the outdegree as well as indegree indicates the level of trustworthiness of the sender. As degree centrality indicates the level of connection, an increase in indegree and outdegree should increase the number of connections a user has, and thus its reliability. Based on the argument above, we hypothesize that:

H4: Sender's indegree is positively associated with sharing (number of forwarding).

H5: Sender's outdegree is positively associated with sharing (number of forwarding).

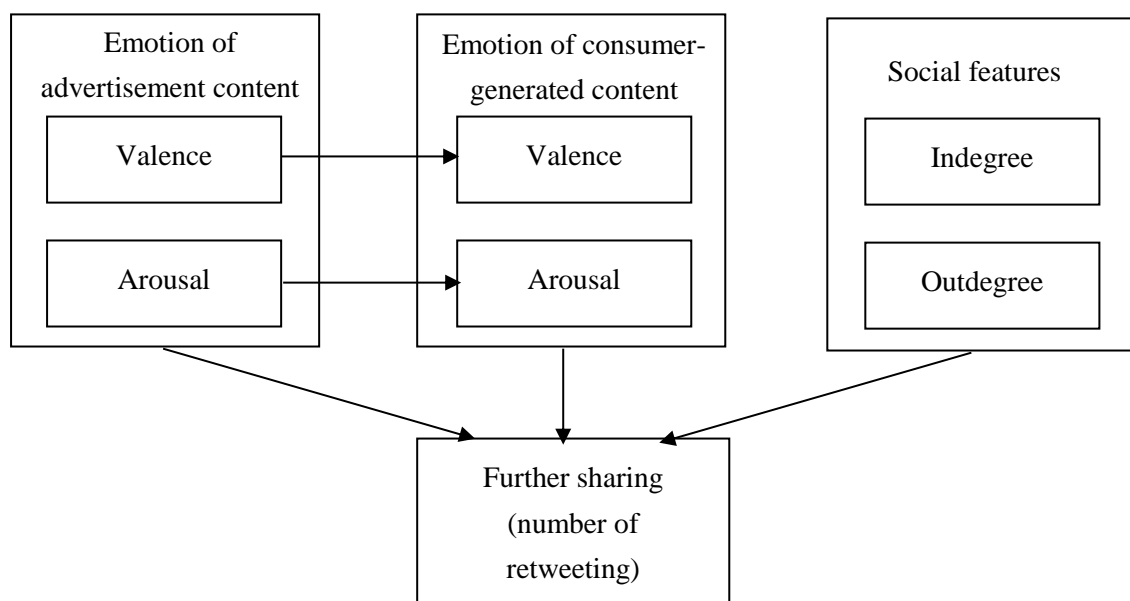The summary of conceptual framework is shown in Figure 2.

Figure 2.   *Conceptual framework*

5   FUTURE WORK

5.1   Data Collection

To complete this study, we will test the hypotheses using data extracted from Twitter, one of the most frequently used broadcasting network in the world. We will use Twitter Open API to extract Tweets containing "advertising", "advertisement", "commercial" and "campaign", together with the sender's corresponding number of followings and followers, and the number of retweeting. To choose those keywords, we manually selected Tweets relevant with online video advertising campaign from a large number of randomly extracted Tweets, and we summarized the most frequently used terms (except brand names) as keywords in data extraction. The data will then be cleaned to remove irrelevant Tweets. Apart from the Tweets, we will also collect the number of retweeting each Tweet has, together with the number of followers and number of followings of each Twitter user.

5.2   Data Analysis

To test the hypotheses, we will need to quantify the emotional valence and level of arousal of advertisement and consumer-generated content. To identify the emotional valence of consumer-generated content, we plan to conduct sentiment analysis using text mining API, python TKNL trainer and online lexicon collections. Small sample of manual coding on valence of consumer generated content will be done to evaluate the accuracy of sentiment analysis classifier. For the emotional valence of the advertisement and level of arousal of both advertisement and consumer-generated content, we plan to conduct manual coding to ensure the accuracy. In the process of manual coding, we will first develop a detailed coding scheme to measure valence and arousal. Then, at least two researchers will follow the coding scheme to code a pilot sample separately. We will then check the coders' interpersonal reliability using Kappa value, and keep revising the coding book until achieving high inter-coder reliability (i.e. Kappa value larger than 0.7). The coding scheme and coding book will then be used to code the whole data to quantify the valence and activation (level of arousal) variables. After these, the relationships between emotional valence, emotional activation (level of arousal), number of followings, number of followers and number of retweeting will be examined using regression to test the hypotheses.

6   ACKNOWLEDGEMENT

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