What Makes Content Viral Online: A Study of Micro Blogs on Sina Weibo

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ABSTRACT
Social networking sites (SNSs) such as Facebook, Twitter and Sina Weibo have attracted millions of users and it makes social interaction become important and frequent in people’s daily life. They enjoy sharing Weibo posts with their friends. However, different posts gain different levels of attention. Why are certain contents on SNSs more viral than others? This question has attracted many researchers. Our research aims to examine what makes online contents viral on Sina Weibo. We find that if a Sina Weibo post is featuring with ease of engagement by users, or visual effect, or new knowledge, then it is more viral than other posts. Otherwise, we concluded several popular kinds of engagement from Sina Weibo: moral encouragement (e.g. good luck from micro-blogs forwarding), material reward (e.g. lucky draw) and topic discussion (e.g. product design; seeking for resonance; emotional appeal). Choosing suitable kind to manage online content can help enterprises operate Weibo marketing much better.

Keywords: Viral Online Content, Social Transmission, Micro Blog, Sina Weibo

INTRODUCTION
With the growth and evolution of Web 2.0 technology, the Internet is able to dramatically facilitate interconnections among users [28], especially on social networking sites (SNSs). People post comments on restaurants, share photos and experiences with others, post forward and praise micro blogs on social networking sites. Their daily life is enriched by sharing behaviors. The sharing behaviors and social interactions also affect branding strategies of enterprises. This is because social media sites help firms to identify preferences of target consumers, their opinions and perceptions of the brand[1]. A well-known Chinese mobile vendor XiaoMi obtained big success by micro-blog marketing. The micro-blog, known as Weibo, is a Chinese microblogging service similar to Twitter. Large Chinese IT firms such as Sina, Tencent and Sohu provide Weibo services. Among them, Sina Weibo is the most influential in China. On December 19th 2012, XiaoMi posted a post on its official Sina Weibo account. The post encouraged Sina Weibo users to share the “first social shopping on Sina Weibo” with their friends. A Sina Weibo user has a chance of lucky draw to win a free smart phone after forwarding this Weibo post to his/her friends. According to Weiboreach, this Weibo post was forwarded 2.6 million times by the end of December 31th. Nearly 1.5 million users forwarded this Weibo post. In addition, the number of Xiaomi’s fans rose to 1.5 million from 0.7million in just 2 days. XiaoMi was the first company to market smart phones on Sina Weibo in 2012. It gained high brand recognition from Weibo marketing.

For Sina Weibo users, social interaction is important and frequent in their daily life. They enjoy sharing Weibo posts with their friends. However, different posts gain different levels of attention. Some posts are forwarded and shared like the growth of virus. They increase their reach exponentially. Some are rarely shared among Sina Weibo users. Some posts about consumer experience receive passionate responses while others obtain sparse followers. Some posts top the ranking list of hot topics while others languish. Today many companies create online advertisements, hoping that they would encourage consumers to generate and share contents about the company. However, this strategy is not always successful[8][34]. The key problem is to understand why some contents are viral while others are not.

Our research investigates which elements affect online content virality from three aspects: the publisher of content, the content itself, and the context of the content. We use Sina Weibo, the most popular social networking site in China, as my research platform to explore the influence factors. Our findings shed light on Weibo marketing strategy for companies which want to market their products and promote their brand on Sina Weibo platform.

The objectives of my research are as follows:

(1) Explore the characteristics of online content that make micro blogs viral in Sina Weibo.

(2) Provide suggestions to companies for successful viral marketing on Weibo.

LITERATURE REVIEW
Definition of Viral and Virality
Simmons (2006) described the term viral as “how the content- be it a joke, picture, game or video- gets around” [38]. On one hand, the word “viral” appeared most frequently together with “marketing” and there existed various definitions for viral marketing. On the other hand, researchers considered it as “virality”. Without one standard definition of virality there have developed several different opinions. Some researchers assessed that virality referred to the number of people who accessed the given content in a given time interval[21]. Others proposed that virality meant the probability that a piece of message would be
passed along[22]. Otherwise, Guerini (2011) proposed that “virality is a complex phenomenon which can be decomposed into several components: appreciation, spreading, buzz, white and black buzz, raising discussion and controversy”[21]. However, to start, my research worked with the definition that virality refers to “the number of people who accessed the given content in a given time piece[21]. However, considering that the transmission of micro blogs in Sina Weibo quickly arrive a bottleneck period and the increment of forward gets smaller, we have not set a “given time piece” in my research.

**Factors that impact on online content virality**

Thus, far, researchers have explored virality of online content in three general groups: the nature of the content itself, the nature of the publisher (or spreader) who spread the content and the context/environment of the content.

The first stream of research focuses on the nature of the content

Some researchers held the opinion that the valence (positive or negative) of the content directly affected the virality[3][11][6][10][32]. Some researchers proposed that whether positive or negative, viral social transmission was in part driven by arousal emotions, such as surprise[16][13][29], excitement[34], interest[23][31][24][28], and humor[34]. In addition, researchers took the motivations to transmit information into consideration, which were classified into two types: ego-ism[15][18][6][7] and altruism[39][30][12].

Different from previous research on content itself, our research laid more stress on “ease of engagement for users”. Researchers proposed that viral content should encourage ease of use[17]. Research on the influence of brand community commonly used terms such as “engage” or “engagement”[2][36]. Recent research has paid more attention to consumer engagement as it is now regarded as a competitive advantage and a driver of business performance[33][37]. In fact, engagement (sense of participation) played an important role in Weibo marketing. For example, one content that is ease to engage with for users issued by XiaoMi company on Sina Weibo was forwarded 2.6 million times, and the number of Xiaomi’s fans reached to 1.5 million from 0.7million in only 2 days. However, few studies concluded the importance of “ease of engagement”. Our research further demonstrates the importance of ease of engagement in regards to virality and viral marketing.

Based on the above literature review this research will test the following hypotheses:

**H1a:** Content that is easy to engage with is likely to go viral on Sina Weibo

**H1b:** While the content is altruistic, the content is likely to go viral.

**H1c:** While the content is egotistic, the content is likely to go viral.

**H1d:** While the content is arousing, the content is likely to go viral.

The second stream of research focuses on the nature of the publisher

Previous studies showed that the types, the influence and the gender of the publisher were relevant with the virality of the online content. Some researchers held the opinion that types of publisher had an important impact on virality[19][28][20]. Some researchers supposed that influential users would lead viral topics or marketing[35][9][4]. Some researchers suggested that the gender of the user also affected the viral effect of the content and many of them held the opinion that messages are more likely to be forwarded by male recipients than female recipients[16][4].

As to the content publishers, we continued to study gender and popularity, but changed the types of publisher according to Sina Weibo.

**H2a:** While the publisher is a male, the content will be more viral than a female.

**H2b:** While the popularity of the publisher is higher, the content is likely to go viral.

**H2c:** While the publisher belongs to the few (media, scholar or writers, business people and entertainment stars), the content will be more viral than the publisher who is a common person.

The third stream of research focuses on the context/environment of the content

Gladwell (2006) proposes the power of context in such that the environment (the circumstance and conditions of the places and times in which it occur) strongly influences human behavior[19]. Some researchers see the context as the structure of the network and community[5]. Other researchers propose that seeding an infectious message to disconnected subcultures such as virtual social worlds are much more important than the quantity of seeds[26][27].

In addition, enterprises began to use news-value events to attract media, social communities and consumers’ attention to promote their brand image and sales via the internet more and more in China. Chinese people also attach great importance to special dates such as holidays and memorial dates. In our research, we took all of the aforementioned into consideration.

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**H3a:** Content that is related to a current event is likely to go viral.

**H3b:** Content that is related to a special date is likely to go viral.

### The Current Research

We examined what makes online content viral in social networking sites. We studied transmission in three ways. First, I investigated the virality of almost 3000 micro blogs from Sina Weibo (Study 1). We controlled for some factors such as publisher’s popularity, publisher’s type and publisher’s gender, and we examined how ease of engagement for users, altruism, egoism, arousal, current events and special dates used by a micro blog affected the possibility of making it rank the top 100 Weibo list. Second we conducted a series of experiments. I chose some micro blogs that contain factors positively related with virality that Study 1 has verified and created the corresponding micro blogs that excluded these factors. Then we did lab experiments in a college and a company to further verify my hypothesis that these micro blogs with tested factors in Study 1 tended to be transmitted more (Study 2). Third we investigated 11 weeks’ top 100 micro blogs, that is, 1100 pieces of micro blogs in total (Study 3). In this study, we focused on the influence of the publisher on virality of Weibo.

**Study 1: A Field Study to verify my research framework in Sina Weibo**

Our first study investigated what types of micro blogs in Sina Weibo were highly shared. Since Sina Weibo has a massive user base and is comprised of many different types of users (e.g., stars, writers, ordinary people) and a wide range of topics (e.g., amusement, gossip, politics, economics), it becomes an ideal platform for studying content virality. Sina Weibo reports the top 100 micro blogs ranking list in the last week (hot.Weibo.com) and we examined influencing factors which affect whether this micro blog ranked among the top 100 micro blogs list.

**Data Collection**

Since existing software for collecting data from Twitter is not available in Sina Weibo (the problem of authorization and privacy protection), the first step was to develop appropriate web crawler software to obtain micro blogs automatically from Sina Weibo based on current software and web crawler technology. Sina Weibo, as an open social networking site, offers reliable API and related documents to users. First we applied for an account to use API (open.Weibo.com), and then we called a certain interface when required by the integration of SDK and API offered by Sina Weibo official. The interface accomplished the process of data acquisition and operation and returned the corresponding JSON file. For instance, an interface named “status-es/timeline batch” batches acquired lists of micro blogs of specified users.

The top 100 micro blogs ranking list in the past week updated at 0:00 every day. In order to ensure the non-repeatability of data, we collected the top 100 micro blogs every Friday from November 14th (the first Friday), 2014 to January 8th, 2016 (hot.Weibo.com), 61 weeks in total. All in all, there were a total of 2200 corresponding common micro blogs (not ranking in the weekly top 100 micro blogs list) in Sina Weibo (Weibo.com) from the same publishers who belonged to 1100 hot micro blogs’ publishers (two pieces of common micro blogs one publisher) and from the same week, that is, 3066 micro blogs in total since some publishers had not posted three micro blogs in the same week.

**Data Description**

We collected data through a web crawler software based on the API of Sina Weibo. We captured the micro blog content, the time of publishing, the recorded time, the number of times praised, and the number of comments. We also captured the content publisher’s information such as gender, verified or not, fans amount and publisher tags. In order to record data better, we made screen-shots of the content and saved the pictures the micro blog used. The above factors are shown as table 1.

<table>
<thead>
<tr>
<th>Factor Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>The micro blog content</td>
<td>The content of the micro blog has two parts: words and pictures (videos). Such as “This is my family photo and we are very happy” with a photo.</td>
</tr>
<tr>
<td>The publish time</td>
<td>The date the micro blog is posted.</td>
</tr>
<tr>
<td>The recorded time</td>
<td>The date the micro blog is recorded.</td>
</tr>
</tbody>
</table>

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The praised times: The number the micro blog is praised. In Sina Weibo, you can praise a micro blog by clicking the sign “thumb”.

The resend times: The number of times the micro blog is forwarded.

Comments times: The number of comments the micro blog obtains.

Publisher’s gender: The gender of the publisher: male or female.

Verified: Whether the publisher get verification from Sina Weibo: Yes or not.

Fans amount: The number of fans of the publisher.

Publisher tags: The tags publisher filled in to describe themselves.

Data Coding
We coded the micro blogs on several dimensions. According to The 2015 Report of CNNIC (China Internet Network Information Center), the male netizen: female netizen = 55: 45. The proportion of ages of netizens is as following: Age 10 - 19 is 23%, Age 20-29 is 32%, Age 30-39 is 23%, and Age 40-49 is 13%. So I selected 5 people to help me rate my micro blogs. Age 10-19: 1 person, Age 20-29: 2 people, Age 30-49: 2 people. 3 individuals were male, and 2 individuals were female. They were blind to our hypotheses. They received a five-point Likert scale excel file which contained the content and the publish time of these micro blogs, items they needed coding and a folder which contained corresponding pictures or videos these micro blogs illustrated. They coded micro blogs according to the extent they agree with “this piece of micro blog presented this character” (“1” means strongly disagree and “5” means strongly agree).

Before formal rating, we gave these 5 raters a test set of micro blogs and kept giving them feedback on their coding until it was clear that they understood the relevant construct. That is, the interrater reliability between these five raters should be high on all dimensions (all α’s>0.7), indicating that content tends to evoke similar emotions across people. Then we used serial correlation method to analyze interrater reliability between these five raters through SPSS. Results showed that the interrater reliability was very high (α=0.7) which represented that the content of the micro blog evoked same feeling and judgment across ten raters. Then they coded the 3066 pieces of micro blogs. We averaged scores across raters and standardized them (for data processing, see Table2; for sample, micro blogs that rated highly on the different dimensions, see Table3; and for coding instructions, see the Appendix).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Resources of variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of engagement (for users)</td>
<td>Artificial scoring (1point-5point)</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Artificial scoring (1point-5point)</td>
</tr>
<tr>
<td>Public Welfare</td>
<td>Artificial scoring (1point-5point)</td>
</tr>
<tr>
<td>Humor</td>
<td>Artificial scoring (1point-5point)</td>
</tr>
<tr>
<td>Visual Effect</td>
<td>Artificial scoring (1point-5point)</td>
</tr>
<tr>
<td>Content/Environment</td>
<td>Surprise</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td>Self-Promotion</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
</tr>
<tr>
<td></td>
<td>Search Notices</td>
</tr>
<tr>
<td></td>
<td>Current Events</td>
</tr>
<tr>
<td></td>
<td>Special Dates</td>
</tr>
</tbody>
</table>

Table 3: micro blogs that rated highly on the different dimensions

**Primary Predictors**

**Ease of engagement for users**
- “Samsung posted a micro blog with words “Upload your family photos and @ Samsung to win a free phone”. Every user has the same opportunity to win the prize and the only thing users must do is post a micro blog with their family photo. This micro blog was forwarded more than 100,000 times.”

**Knowledge**
- “A fingerprint lock is much safer than coded lock and sliding screen lock. Please learn how to set the fingerprint lock from Samsung.”

**Public Welfare**
- “The number that this micro blog is forwarded, we will give the same amount of money to charity”

**Humor**
- “a note from my dad: ’my dear son, I am very happy that tonight you will take your girlfriend back home. I know that something might happen but do not forget to be a responsible man. Safety first.’” with some Durex condoms attached to the note.

**Surprise**
- “Changing your laptop to a tablet computer, Lenovo helps your dream come true. Yoga can rotate 360 degrees”

**Self-promotion**
- “A group of Chinese people had a trip in UK, they sang a song to praise our motherland- China together in front of the building of UK government”
Analysis Strategy
In order to research the relationship between the predictor variables and dependent variables –viral, we relied on the following logistic regression specification as (1) which was used in viral analysis by Berger and Milkman (2011).

Virality is the dependent variable that takes value 1 if the micro blog is viral and 0 otherwise. If the micro blog is on Top 100 hot micro blogs ranking list, we assigned it value 1. Otherwise, we assigned it value 0.

Then use SPSS to do multivariate logistic regression analysis, results are shown in table 4:

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wals</th>
<th>df</th>
<th>Sig.</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Engagement</td>
<td>-.237</td>
<td>.100</td>
<td>5.636</td>
<td>1</td>
<td>.018</td>
<td>.789</td>
</tr>
<tr>
<td>Knowledge</td>
<td>.483</td>
<td>.220</td>
<td>4.816</td>
<td>1</td>
<td>.028</td>
<td>1.621</td>
</tr>
<tr>
<td>Public Welfare</td>
<td>.473</td>
<td>.274</td>
<td>2.985</td>
<td>1</td>
<td>.84</td>
<td>1.605</td>
</tr>
<tr>
<td>Humor</td>
<td>.009</td>
<td>.115</td>
<td>.006</td>
<td>1</td>
<td>.94</td>
<td>1.009</td>
</tr>
<tr>
<td>Visual Effect</td>
<td>.276</td>
<td>.098</td>
<td>7.860</td>
<td>1</td>
<td>.05</td>
<td>1.317</td>
</tr>
<tr>
<td>Surprise</td>
<td>.155</td>
<td>.107</td>
<td>2.071</td>
<td>1</td>
<td>.50</td>
<td>1.167</td>
</tr>
<tr>
<td>Self-promotion</td>
<td>.160</td>
<td>.095</td>
<td>2.805</td>
<td>1</td>
<td>.94</td>
<td>1.173</td>
</tr>
<tr>
<td>Positive</td>
<td>.032</td>
<td>.098</td>
<td>.105</td>
<td>1</td>
<td>.46</td>
<td>1.032</td>
</tr>
<tr>
<td>Negative</td>
<td>.177</td>
<td>.112</td>
<td>2.490</td>
<td>1</td>
<td>.15</td>
<td>1.193</td>
</tr>
<tr>
<td>Search Notices</td>
<td>-.475</td>
<td>.704</td>
<td>.456</td>
<td>1</td>
<td>.50</td>
<td>.622</td>
</tr>
<tr>
<td>Current Events</td>
<td>-.067</td>
<td>.224</td>
<td>.090</td>
<td>1</td>
<td>.64</td>
<td>.935</td>
</tr>
<tr>
<td>Special Dates</td>
<td>.028</td>
<td>.258</td>
<td>.012</td>
<td>1</td>
<td>.914</td>
<td>1.028</td>
</tr>
<tr>
<td>Constant</td>
<td>-.924</td>
<td>.105</td>
<td>76.74</td>
<td>0</td>
<td>.00</td>
<td>.397</td>
</tr>
</tbody>
</table>

Sig. < 0.1, significant at the 10% level
Sig. < 0.05, significant at the 5% level

Results and Discussion
According to logistic regression results, we found some conclusions relevant with our research.

We found that ease of engagement is a very important factor. When the topic of Weibo content utilizes ease of engagement for users, the content will be more viral. (H1a is accepted.)

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We found that knowledge is also a very important factor. When the topic of Weibo content contains knowledge, the content will be more viral. (Part of H1b (knowledge) is accepted and part of H1b (public welfare, search notices) is rejected. H1c is rejected.

We found that visual effects play an important role in viral content. When the Weibo content shows visual effect, the content will be more viral. (Part of H1d (visual effect) is accepted and part of H1d is rejected (surprise and humor).) H1a (ease of engagement), part of H1b (knowledge) and part of H1d (visual effect) are accepted, other hypotheses are rejected. Research results illustrate that content characteristics (ease of engagement, visual effects and knowledge) are significantly relevant with virality of the micro blog. Part of H1b (public welfare and search notices) is rejected because the micro blogs study 1 used do not contain much information about public welfare and search notices, the same to monetary benefits. H1c is rejected. As to self-promotion, it was significant at the 10% level and we think it was because some Weibo users compelled them not transmit certain official types of micro blogs, such as patriotism among young people. Positive content does not show to be much more viral than negative content, because people in Sina Weibo are also concerned about negative news.

I did not test H2a, H2b and H2c in Study 1.

H3a and H3b are rejected.

**Study 2: Lab Experiments- How ease of engagement, knowledge and visual effect affect transmission**

Findings of Study 1 have important marketing implications. Online content in Sina Weibo which contains characteristics such as knowledge, visual effects and ease of engagement will be much more viral. Considering these specific characteristics can help enterprises increase their profit if they use SNSs for marketing. It is also useful for enterprises to design their micro blogs content if they want to receive attention and attract customers in SNSs. Findings of Study 1 can also help enterprises to develop their marketing strategy through creating a new topic in Sina Weibo to attract users. As our findings show, topics which incorporate ease of engagement are much more viral. So, companies should focus on reducing the difficulty to engage with the topic discussion.

**Experiment 1: Ease of engagement**

Participants (N=80) were randomly divided into two groups: Group 1 and Group 2. We then designed two sets of micro blogs: Set 1 and Set 2. The two sets of micro blogs have same characteristics except that Set 1 includes the feature: ease of engagement and Set 2 does not have this feature. We gave Set 1 micro blogs to Group 1 and Set 2 to Group 2. After reading about the micro blogs, participants were asked how likely they would be to share it with others (1=”not at all likely,” and 5=”extremely likely”).

Example of two sets of micro blogs:

Set 1: Contents of micro blogs like “Here are top ten ranking movies of 2015”.

Set 2: Contents of micro blogs like “Here are top ten ranking movies of 2015, have you watched some of them and which one did you like best?”.

**Experiment 2: Knowledge**

Participants (N=80) were randomly divided into two groups: Group 1 and Group 2. We then designed two versions of micro blogs: Version 1 and Version 2. We pretested the two versions of micro blogs to ensure only Version 1 of them presented knowledge (rich and useful information). We gave Version 1 micro blogs to Group 1 and Version 2 to Group 2. After reading about the micro blogs, participants were asked how likely they would be to share it with others (1=”not at all likely,” and 5=”extremely likely”).

Example of two versions of micro blogs:

Version 1: “iPhone 7 will come to the market next month”.

Version 2: “iPhone 7 will come to the market next month, and the difference between iPhone 7 and iPhone 6s are …”.

**Experiment 3: Visual Effect**

Participants (N=80) were randomly divided into two groups: Group 1 and Group 2. We then designed several pairs of sets of micro blogs.

(1)Set 1 and Set 2: The two sets of micro blogs have same characteristics except that Set 1 is illustrated with pictures or videos and Set 2 is not illustrated with any pictures or videos.
(2) Set3 and Set4: The two sets of micro blogs have same content and they both have visual effect. What the difference between them is one is illustrated with pictures and another one is illustrated with video.

After reading about the micro blogs, participants were asked how likely they would be to share it with others (1=“not at all likely,” and 5=“extremely likely”).

Results and Discussion

<table>
<thead>
<tr>
<th>Version 1 of Questionnaire</th>
<th>Version 2 of Questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 3.54 Knowledge-scientific knowledge</td>
<td>Q1 1.92</td>
</tr>
<tr>
<td>Q2 2.28 no</td>
<td>Q2 2.11 Knowledge-life knowledge</td>
</tr>
<tr>
<td>Q3 3.15 Knowledge-life knowledge</td>
<td>Q3 2.08 no</td>
</tr>
<tr>
<td>Q4 2.33 no</td>
<td>Q4 3.55 Engagement-topic discussion</td>
</tr>
<tr>
<td>Q5 3.64 Engagement-topic discussion</td>
<td>Q5 2.55 no</td>
</tr>
<tr>
<td>Q6 2.26 no</td>
<td>Q6 1.92 Engagement-topic discussion</td>
</tr>
<tr>
<td>Q7 3.82 Engagement-lucky draw</td>
<td>Q7 1.47 no</td>
</tr>
<tr>
<td>Q8 2.31 Pictures, no video</td>
<td>Q8 3.66 Visual effect- Video</td>
</tr>
<tr>
<td>Q9 3.72 Visual effect- pictures</td>
<td>Q9 2.24 no</td>
</tr>
<tr>
<td>Q10 2.15 no</td>
<td>Q10 3.58 Public welfare</td>
</tr>
<tr>
<td>Q11 2.90 Self-promotion-values</td>
<td>Q11 2.26 no</td>
</tr>
<tr>
<td>Q12 4.00 Self-promotion- show off</td>
<td>Q12 2.18 no</td>
</tr>
<tr>
<td>Q13 1.51 Self-promotion-values</td>
<td>Q13 2.37 no</td>
</tr>
<tr>
<td>Q14 1.49 Self-promotion-comparable micro blogs</td>
<td>Q14 1.32 no</td>
</tr>
<tr>
<td>Q15 3.77 Engagement-forwarding luck</td>
<td>Q15 2.29 no</td>
</tr>
</tbody>
</table>

Results were showed as above table5. The experimental results reinforced the findings from my archival field study (Study 1), and supported my hypothesized process. First, consistent with my analysis of 3000 pieces of micro blogs in Sina Weibo, micro blogs which where ease of engagement evoked more transmission (Experiment 1). People would be more likely to share and forward a piece of micro blog when it contained knowledge (Experiment 2) and when it included a picture and a video even more (Experiment 3).

Study 3: An Extended Study from Study 1 Considering Publisher

We used the eleven weeks’ Top 100 hot micro blogs from Study 1, which consists of 1100 pieces of micro blogs as my data set, to study the influence of the publisher from November, 2014 to December, 2015.

Results and Discussion.

H2a: While the Weibo content publisher is a male, the content will be more viral than a female.
H2b: While the popularity of the publisher is higher, the content will be more viral.

H2c: While the Weibo content publisher belongs to the few (media, scholar or writers, business people and entertainment stars), the content will be more viral than the publisher who is a common person.

Gender:
Among the hot micro blogs data set, 788 pieces of micro blogs, or 71.6%, were posted by males. I suggested that male publishers tend to create and transform much more viral information than female publishers.

Popularity:
Among the data set, the number of publishers who had less than 10,000 fans was 22, which accounts for 2%; the number of publishers who had between 10,000 and 1 million fans was 160, or 14.5%; the number of publishers who had between 1 million and 10 million was 444, accounting for 40.4%; the number of publishers who had more than 10 million was 474, totaling 43.1%.

Publisher type:
Among the data set, the number of publishers who were common people (including famous grassroots micro bloggers) was 232, which accounts for 21.09%; the number of publishers who were business people was 16, which accounts for 1.45%; the number of publishers who were scholars or writers was 10, which accounts for 0.91%; the number of publishers who were media was 86, which accounts for 7.82%; the number of publishers who were entertainment stars was 756, which accounts for 68.73%.

According to the eleven weeks’ Top 100 hot micro blogs analysis, I found H2a, H2b, H2c were all verified to some extent.

**LIMITATIONS**

This study also has several limitations:

First, measurement of popularity of the Weibo user: we have not found a good way to measure popularity of the Weibo user. Originally we choose fans amount but zombie fans (Malicious registered users or bought by money) are widespread in Sina Weibo. In the future, we will try to use number of fans who have V (verification) offered by Sina to measure popularity.

Second, the data we collect brings biased elements. The data was collected from a specific group and over a specific period-publisher of weekly Top 100 micro blogs and the sample could be bigger other than just 3,000 pieces of micro blogs.
Third, quantitative study: we choose questionnaire to measure qualitative variables from 1 to 5, rather than try to use qualitative study, like text analysis. For instance, we can use text analysis method to distinguish whether the micro blog is positive. In the future research, we will try to solve these problems and test the whole research frame we have proposed in this study.

**IMPLICATIONS**

These findings have important marketing implications. Online content in Sina Weibo which contains characteristics: knowledge, visual effect and ease of engagement will be much more viral. Considering the specific characteristics can help enterprises increase their profit if they use SNSs to do advertising like Xiaomi. It is also useful for enterprises to design their micro blogs content if they want to get attention and attract customers in SNSs like Durex. Our findings also can help enterprises to develop their marketing strategy like creating a new topic in Sina Weibo to attract users like Samsung. Companies can post a topic relevant with their products and services. As our findings show, topic which is easiness for engagement is much more viral. So companies should reduce the difficulty to engage the topic discussion.

From our research findings, we concluded several popular kinds of engagement from Sina Weibo: moral encouragement (e.g. good luck from micro-blogs forwarding), material reward (e.g. lucky draw) and topic discussion (e.g. product design; seeking for resonance; emotional appeal). Enterprises should choose suitable kind to manage online content.
REFERENCES


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APPENDIX A: Coding Instructions

Gender

Popularity

Type

Ease of Engagement

Arousing

Altruism

Egoism

Current Events

Special Dates

Weibo Content
Publishers

Weibo Content
Characteristics

Viral Content

Context/Environment

(1) Gender: male or female.

(2) Popularity: the number of fans.

(3) Type: media, scholars or writers, business people, entertainment stars and common people.

(4) Ease of engagement for users

Definition: ease of engagement for users means that the threshold to engage with the topic a micro blog refers to is low. Ease of engagement contains two meanings: firstly whether this micro blog asks the reader to do something such as forward, share, upload or discuss; second is whether this task is easy to do.

Dobele, Toleman and Beverland (2005) propose that viral content should encourage ease of use. Every Weibo user should be able to participate in the event easily without limitations. For example, a typical topic which one piece of micro blogs from weekly Top 100 hot micro blogs in Sina Weibo refers to is using a phrase to describe the person you love.

According to the long-term observation of famous enterprise Weibo users, many enterprise Weibo accounts like to use the “event driven” method to communicate with their customers and potential customers in Sina Weibo.

(5) Altruism

Definition: Altruism means doing something that is helpful for others (knowledge, public welfare, and search notices). Knowledge can be defined as rich and useful information; public welfare refers to doing beneficial things for the public; search notices mean searching for somebody or something.

Previous research shows that altruism is one of the main motivations to transmit information. Several researchers contend that people will share useful information or content for altruistic reasons (Litvin et al, 2011). In my study, I define useful information as knowledge. Considering the characteristics of Sina Weibo, a public social network, it is easy for content with public welfare to become viral. As Sina Weibo has many users, search notices are always quick to be forwarded. Therefore, if a micro blog belongs to the above three kinds, I will define it as altruistic.

(6) Arousing

Definition: Arousing refers to calling forth emotions, feelings and responses (humor, visual effect and surprise). Humor refers to that the micro blog makes you laugh immediately or after a serious thought. Visual effect means attractive pictures or videos. Surprise refers to that the micro blog describes something which goes against your expectations.
Previous research shows that viral social transmission is in part driven by arousal (Jonah, 2011; Jonah, 2012). Jonah (2012) proves that content that evokes high-arousal positive (awe) or negative (anger or anxiety) emotions are more viral. Prior research also suggests that content will be more arousing with surprise, humor and other emotions and directly affects the virality of online content (Karen, 2013). I have studied a large amount of popular Weibo posts and found that humor and surprise are the main arousing emotions. My research differentiates itself from prior research as I take visual effects, pictures and videos, into consideration. Visual effects are used to capture people’s attention, but prior research hasn’t investigated its importance in SNS.

(7) **Egoism**

Definition: Egoism refers to an action that is helpful for oneself (self-promotion, monetary benefits and positive). Self-promotion means doing something which can help build a user’s own image such as expressing positive values, presenting merits, and promoting themselves or showing off. Monetary benefits means posting this micro blog in a user’s own Weibo could help them to acquire money, free products/services or awards. Positive means that the entire emotional tone of this micro blog is positive such as happy and satisfying.

Prior research suggests that self-enhancement is an important reason to transmit information and positive information is more viral than negative information (Dichter 1966; Gatignon and Robertson, 1986; Jonah and Katherine, 2012). Jonah and Katherine (2011) also propose that people may share information that reflects positively on the sender and prefer to share information that shows and promotes themselves (self-promotion). In addition, many business users in Sina Weibo choose to use monetary benefits to catch people’s attention. One example, observed from Sina Weibo, is the forwarding of a lucky draw is very popular. As I discussed in the Introduction, Xiaomi mobile loves to use this method and through it achieves high levels of success. I studied three aspects concerning egoism: self-promotion, monetary benefits and positivity.

(8) **Current Events**

Definition: Current events refers to recent events regarding politics and economics at home or abroad.

(9) **Special dates**: holidays and festivals; memorial days.

**APPENDIX B: Micro-blog marketing cases**

**Xiaomi Case**: first social shopping in Sina Weibo (Leijun, 2012)

**Durex Case 1: The elder brother of the shoe covers**

In June 2011, the heavy rains in Beijing were the hot point. On June 23rd, another heavy rain dropped from the sky. A Sina Weibo user named Di Kong Dao Dan posted a micro blog with words “Heavy rain in Beijing, thanks to these two durex condoms in my bag” and a picture that a pair of shoes with two shoe covers made by durex condoms. This micro blog was forwarded more than 10,000 times in an hour. In fact, Di Kong Dao Dan is a member of Durex Weibo operation team.
Durex Case 2: Pregnant event (Durex, 2011)
On April 12th, a famous grassroots micro blog named Homework posted a micro blog “People will get pregnant if they sleep before 1:00 tonight”. Durex immediately made comments “All right! Leave it to me” and forwarded it. Homework also replied Durex and forwarded Durex’s comments. On the night these three micro blogs were forwarded more than 7,000 times and Durex obtained more than 3,000 fans.

APPENDIX C: The data flowchart of Weibo collection
The data flowchart of Weibo collection is showed as follows:

Fig. Web crawler software based on the API of Sina Weibo

Steps were shown as following:
Step 1: I used the software to collect a list of users whose micro blog is in the weekly Top 100 (hot.Weibo.com) every Friday and created two text files. File_1_n: Information included publisher name, gender, verified or not, number of fans and status (e.g., famous presenter or actor). File_2_n: Information included the micro blog content (words and other parts like pictures and videos), the time of publishing, the recorded time, the number of times praised, the number of times resent and the number of comments (n referred to the nth week).

Step 2: I used an online random number generator to generate 11 numbers between 1 to 61, that is, my study randomly chose eleven weeks’ micro blogs during this time period, 1100 hot micro blogs totally.

Step 3: According to File_1_k, I used the software to collect each week’s corresponding micro blogs, which did not exist on the Top 100 ranking list (k referred to the kth week). That is, File_1_k included the publishers’ name who ranked the Top 100 list in week k. The software collected two pieces of micro blogs of the publishers from the File_1_k in the same week k one by one. Information includes gender, verified or not, number of fans, status, micro blog content (words and other parts like picture and video), the time of publishing, the recorded time, the number of times praised, the number of times resent and the number of comments.