Viral Marketing

Social Media and Web Analytics

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Learning Goals for this Week

- Define the term "Viral Marketing"
- Explain why Viral Marketing is important for firms
- Assess what aspects of an ad increase its virality
- Define Improvised Marketing Interventions (IMI)
- Assess effectiveness of IMI
- Critically evaluate marketing implications of research results

What is Viral Marketing?

Viral Marketing

Virality: achieving a large number of views in a short time period due to consumers sharing content online.

Why do we care about virality?

- Ability to reach vast audiences in a short period of time at low cost
- Increases brand visibility and recognition $\rightarrow$ brand equity
- (Increase in sales?)

Today's Agenda

Two papers:

- What Drives Virality (Sharing) of Online Digital Content? The Critical Role of Information, Emotion, and Brand Prominence
  - Tellis, MacInnis, Tirunallai and Zhang (2019, Journal of Marketing)
- Improvised Marketing Interventions in Social Media
  - Borah, Banerjee, Lin, Jain and Eisingerich (2020, Journal of Marketing)

What Drives Virality?

What Drives Online Sharing?

Motivation: What characteristics of an ad enhance its shareability?

Specific Questions:

- Does information focussed content limit sharing?
- Does brand prominence decrease sharing?
- Do positive emotions increase sharing?

How?: Online video ads on YouTube

- Note: Paper is descriptive / predictive rather than causal

YouTube Advertising Data

All video ads between Nov 25, 2013 and March 4, 2014

- Approx 1,962 video ads

Info they get via Youtube's API:

- Shares on Facebook, Twitter, Google +, LinkedIn over first 30 days

Info about Ads: sample of 360 of ads collected, covers 79 brands

- Got coders (i.e. paid some people) to watch ads and write down whats in it

Ad Characteristics

Table 2. Important Ad Characteristics that Drive Social Shares.

Video Characteristics	Type of Measure or Cue
Information and Risk Characteristics	
Argument	Six-point scale (0 = "very weak," and 5 = "very strong") "To what extent does the ad use logical reasoning, factual claims, or offers?"
New product	Binary scale (0 indicates absence; 1 indicates presence) "Is the ad about the introduction of a new product/service?"
Price	Categorical: 1 = "low" (e.g., consumer packaged goods), 2 = "intermediate" (e.g., consumer electronic goods), and 3 = "high" (e.g., automobiles) "Is the product price low (more like a consumer packaged good), moderate (more like a consumer electronic good) or high (more like an automobile)?"
Emotional Characteristics	
Love, pride, courage, joy, triumph, warmth, excitement, sadness, shame, fear, humor, anger, disgust, hatred, deprivation, failure	Six-point scale (0 = "very weak," and 5 = "very strong") "To what extent does the ad arouse the specified emotion?"
Drivers of Emotions	
Surprise, suspense, drama, narrative, character, plot, sex	Six-point scale (1 = "very weak," and 5 = "very strong") "To what extent does the ad have the specified driver of emotion?"
Surprise location	Categorical: no element, at beginning, at middle, at end, throughout "Where in the ad does the surprising outcome occur?"
Baby, animal, cartoon, celebrity	Binary scale (0 indicates absence; 1 indicates presence) "Does the ad use the specified ad element?"
Commercial Features	
Brand timing: early, end, intermittent, none	Binary scale (0 indicates absence; 1 indicates presence of the brand in the ad)
Brand duration	Duration of a brand's appearance in the ad (in seconds)
Control Characteristics	
Ad length	Total duration of the video ad (in seconds)
Number of subscribers	Total number of subscribers to the channel
Timeliness	Binary scale (0 indicates absence; 1 indicates presence) "Is the ad related to a contemporary event?"

Regression Equation

$$\log(\text{shares}) = \alpha_{\text{brand}} + \beta_1 \times \text{information} + \beta_2 \times \text{new product}$$
$$+ \beta_3 \times \text{information} \times \text{new product/ service}$$
$$+ \beta_4 \times \text{information} \times \text{price level}$$
$$+ \beta_5 \times \text{positive emotion: inspiration}$$
$$+ \beta_6 \times \text{positive emotion: warmth}$$
$$+ \beta_7 \times \text{positive emotion: amusement}$$
$$+ \beta_8 \times \text{negative emotion: fear}$$
$$+ \beta_9 \times \text{negative emotion: shame}$$
$$+ \beta_{10} \times \text{positive emotion: excitement}$$
$$+ \beta_{11} \times \log(\text{subscribers})$$
$$+ \beta_{12} \times \text{timeliness} + \beta_{13} \times \text{brand frequency}$$
$$+ \beta_{14} \times \text{brand early} + \beta_{15} \times \text{brand none}$$
$$+ \beta_{16} \times \text{brand intermittent} + \beta_{17} \times \text{ad length}$$
$$+ \beta_{18} \times \text{ad length}^2 + \beta_{19} \times \text{price level} + \epsilon, (1)$$

Note: Think of this as a **descriptive** regression

- They'll also use it for prediction on an (unseen) sample
- "Are these features predictive of shares?"
    - My Q: If they really want to predict though, why not go machine learning route?

Estimation Results

Table 3. Estimated Effects of Ad Characteristics on Social Shares from Mixed-Effects Model (Study 1. Dependent Variable is Log of Shares).

	Beta Coefficient	Effect Size (%)	Standard Error	p-Value
Information-Focused Content				
Extent of argument	−.39	−32.56	.13	.002**
New product	.46	57.78	.13	.002**
Argument × new product	.25	27.76	.12	.042*
Price (moderate)	−.12	−11.22	.15	.43
Price (high)	.01	1.11	.18	.94
Argument × moderate	.28	31.92	.13	.030*
Argument × high	.33	39.38	.15	.028*
Emotion-Focused Content				
Extent of inspiration	.11	11.52	.05	.018**
Extent of warmth	.13	14.00	.05	.002**
Extent of amusement	.20	21.53	.04	.001**
Extent of fear	−.05	−5.26	.04	.19
Extent of shame	.07	7.36	.04	.06
Extent of excitement	.12	13.09	.04	.008**
Commercial Content				
Brand duration	.01	.50	.14	.46
Brand none	−.67	−48.73	.43	.10
Brand early	−.36	−29.88	.12	.002**
Brand intermittent	−.31	−26.51	.11	.008**
Ad length	.12	12.98	.05	.024*
Ad length sq	−.10	−9.06	.03	.004**
log(subscribers)	.39	48.14	.06	.001**
Timeliness	−.11	−10.06	.14	.46

The parameter in the first row is the effect of argument when used for old and low-priced products (when new product = 0 and price = low). Effect sizes are in percentage terms, as they are estimates of a log linear model. They represent the percent change in shares due to unit change in the dependent variable. For small values, they are close to the coefficient value expressed as a percentage. Significance levels: *** .001, ** .01, and *.05.

Main Findings in Regression

- Information decreases shares

    - But not for a new products
    - And less for high price products

- Positive emotions lead to more shares

    - High arousal emotions not more effective than low arousal

- Timing of brand appearence and length of ad matters

A critical eye: They are cutting the data many ways for only 346 observations!

(Paper also discusses predictive power of model)

Dramatic Elements and Emotions

Table 4. Estimated Effects of Drama-Based Elements on Emotions (Study 1).

Characteristics	Extent of Inspiration		Extent of Warmth		Extent of Amusement		Extent of Excitement	
	Mean	p-Value	Mean	p-Value	Mean	p-Value	Mean	p-Value
Dramatization	.17	.004**	.13	.024**	.54	.000**	.02	.699
Extent of surprise	−.13	.015**	.04	.433	.18	.000**	.1	.073*
Use of celebrity	.36	.003**	−.14	.242	−.10	.283	.26	.035**
Use of baby/animal	.59	.035**	1.24	.000**	.45	.043**	.04	.876
Use of cartoon	−.23	.233	−.24	.211	.54	.001**	.04	.862
Use of sex appeal	−.25	.355	−.23	.396	.08	.732	−.26	.349
Extent of suspense	.04	.505	−.09	.108	−.04	.409	.10	.074*

Significance levels: *** .001, ** .01, and *.05.

Marketing Implications

Drivers of sharing important to understand to help ads get shared

- This sounds *a little too causal*
- ... as will a lot of their implications

The authors want us to believe:

- Less information
- More positive emotions
- More careful brand placement

are important to promote online sharing

Improvised Marketing Interventions

Improvised Marketing Interventions

Improvised Marketing Interventions (IMI): composition and execution of a real-time marketing communication proximal to an external event

Motivation: Are IMI's effective at generating online sharing?

Specific Questions:

- Do IMI's result in greater virality?
- What type of IMI yields greater virality?
- Do IMIs enhance firm value?

How?: A mix of experiment, quasi-experiment and observational data

- We'll look at a subset of their results, focusing on the first two questions

IMIs and Virality

Context: Superbowl blackout, 2013

Virality of Oreo Tweet
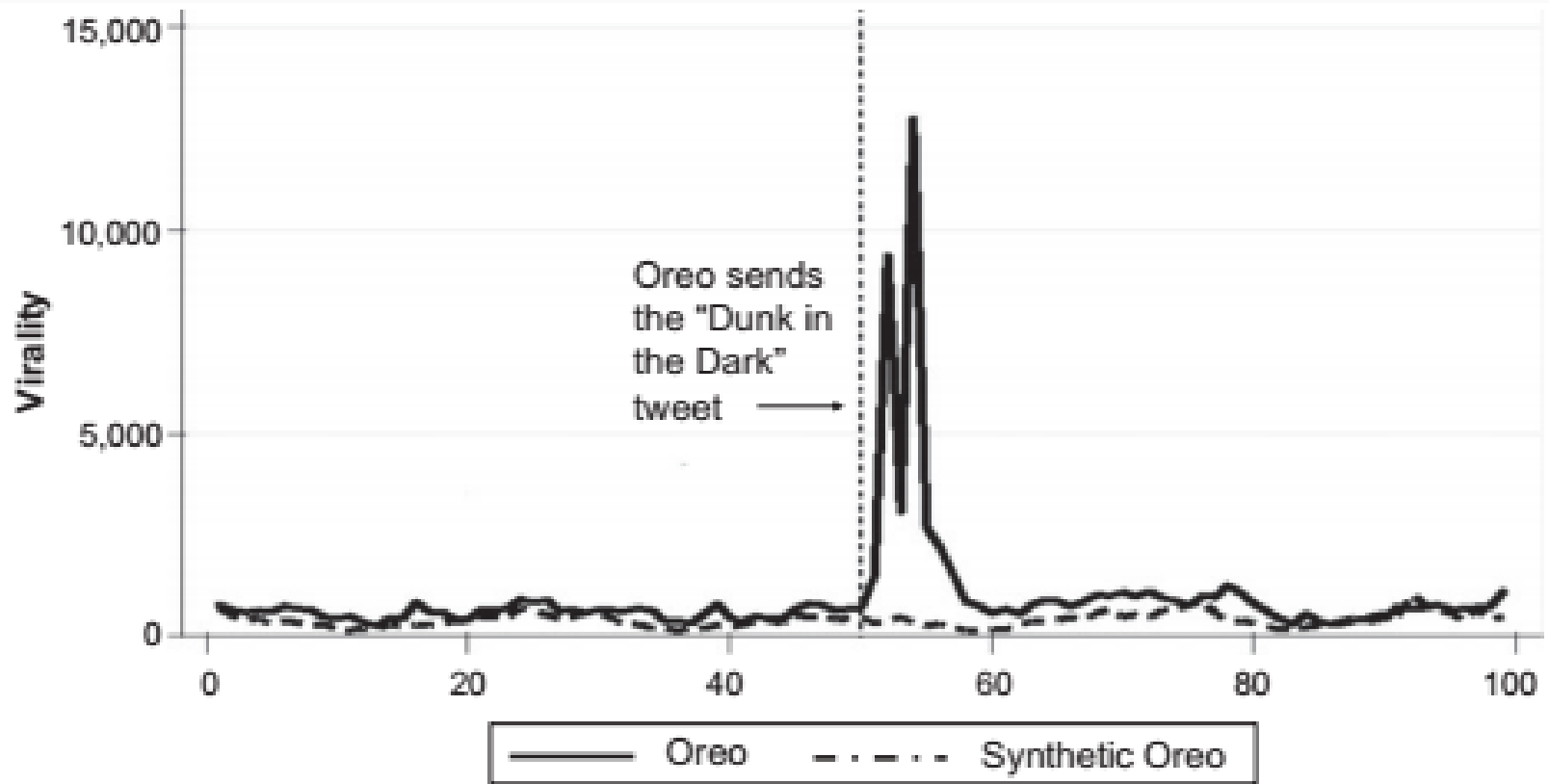
Virality of Oreo Tweet

**Table 3.** Effect of IMI on Social Media Metrics One Hour Before and After the Oreo Tweet.

Variables	(1) Volume of Retweets	(2) Volume of Tweets	(3) Volume of Favorites	(4) Sentiment of Chatter
IMI tweet (1 = IMI, 0 = non-IMI)	7.52	2.90	.78	1.85
	(.63)	(1.34)	(1.36)	(1.33)
Time after Oreo tweet (1 = after the tweet,	9.00	3.19	.96	2.01
0 = before the tweet)	(.63)	(1.15)	(1.26)	(1.14)
IMI tweet × Time after Oreo tweet	47.79***	8.28***	2.07***	5.31***
	(5.93)	(5.62)	(5.36)	(5.63)
Time during Super Bowl	−6.26	−1.69	−.42	−1.01
	(.78)	(1.17)	(1.12)	(1.20)
Outage event	−6.48	.35	.10	.18
	(.87)	(.25)	(.27)	(.20)
Intercept	3.81	−.10	−.07	−.29
	(.40)	(.06)	(.14)	(.25)
R-square	1.10%	12.27%	9.31%	11.86%
Overall test of significance (F-tests)	11.47	151.90	111.82	146.22
Wald test of significance	.000	.000	.000	.000
Time trend included			Yes	
Event fixed effects			Yes	
Day dummy included			Yes	
N			79,860	

***$p < .001$.

Notes: t-statistics in parentheses.

Study 2: mTurk Survey
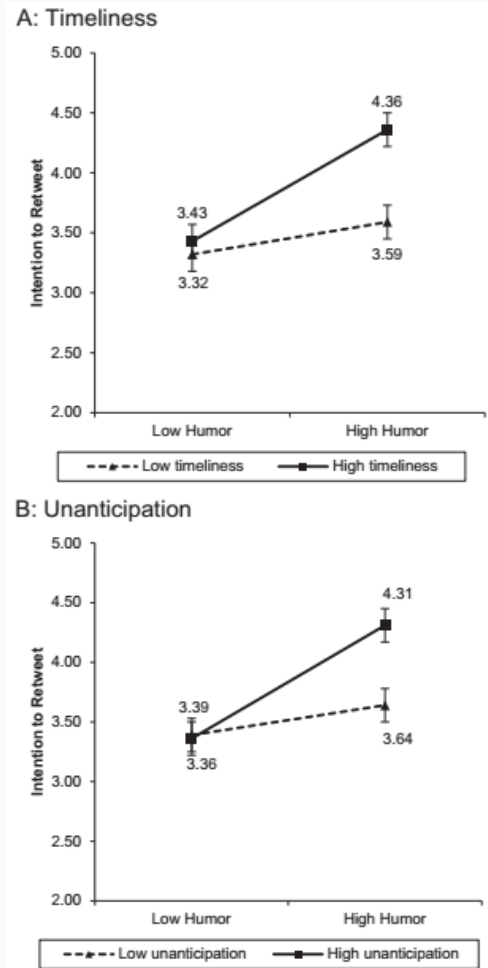
Marketing Implications

- IMI can help business connect with an audience weary of traditional advertising messages

- Humor and Timeliness important

- Keeping a close eye on trends and online chatter

    - ... and being able to formulate a witty post/response

- Warning: Need to be careful that don't offend

    - Example: Burger King on International Women's Day

Recap

Recap

- Viral Marketing is the rapid sharing of an ad online by consumers
- Features of ads that are associated with increased virality:
  - Feature positive emotions
  - Are less informative
  - There are exceptions here - new products, expensive products
  - Careful placement of brand name
- Improvised Marketing Interventions are heavily shared when they are timely and involve humor and aren't anticipated

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```
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      title={"Social Media and Web Analytics: Lecture 6 - Viral Marketing"},
      author={Lachlan Deer},
      year={2021},
      url = "https://github.com/tisem-digital-marketing/smwa-lecture-06"
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```


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