BEYOND LIKES AND TWEETS:
MEASURING THE IMPACT OF SOCIAL MEDIA

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What Drives Market Performance?

• Marketing: offline (e.g. TV, radio, print) & online (paid, owned)

• Word-of-mouth: offline and online (earned, e.g. social media)

• Both: Two-step flow of communication (Katz & Lazarsfeld 1955) Marketing affects influencers, whose WOM drives outcomes

• And we get influenced by observation of what others do: Social interactions (a) are taken by person not involved in selling & (b) impact other’s expected buying utility (Godes et al. 2005)
Massive Opportunity Not Being Fully Leveraged by Most

- Social media is the largest source of unfiltered information ever available about how consumers truly think and feel.

- The vast majority of companies have yet to take advantage of this intelligence to influence their business decisions.
Volume metrics are omnipresent in social media: number of Facebook fans, likes, comments, of (re)Tweets, of friend referrals (Trusov et al. 2009),…

Valence seen as important: movie reviews, Tweets,… (Chevalier & Mayzlin 2006, Godes & Mayzlin 2004, Liu 2006)

Content only starting to get attention: does it matter 1) that senders like the advertising or the brand ? 2) that senders hate Ipad features or data provider?
Valence Alone is Only a Small Part of the Picture

Blogs & Forums iPad Opinions

12,500 mentions

Positive 36%  
Negative 54%  
Neutral 11%

Excited for Content &... 12%  
Netbook/Kindle Killer 7%  
Likes the iPad 17%  
Wrong Feature/Size... 14%  
Just a Big iPhone 9%  
Data Plan/Provider... 10%  
Unimpressed 21%  
Wait & See 11%
Data: Major Retailer Store Traffic
Social Media Data: Crimson Hexagon

- Answers targeted business questions based on contextualized analysis of social media conversation
- Achieves up to 97% accuracy using algorithmic approach
- Filters noise and focuses on relevant opinions, with relevance defined by the user
- Analyzes any and all languages
- Includes Facebook (likes, comments), Twitter (tweets)
Crimson Hexagon

- Went to store/Made a purchase
I love store\brand
Paid, Owned, and Earned Media
Methodology: Old Approach

TV
Radio
Circular
Online

→ Store Traffic
Our Approach

TV
SEM
Circulars
Radio

WOM
Natural Search

Website Traffic
Store Traffic
Vector Autoregression Model

- Traffic driven by marketing, paid, owned and earned media in turn can drive WOM interaction & feed back into marketing
- 10 endogenous variables in logs, 1 lag for parsimony (BIC)
  Exogenous: controls for general retail index, Christmas
- Generalized Impulse response function reveals over-time effect of a change in the impulse variable to response variable
- Variance Decomposition reveals importance of past changes to each variable in driving business (dynamic $R^2$)
- ‘Content’ model fits better than pos/neg Tweets, FB likes,....
Results: Impulse Response of “Went/Purchased” Posts to TV

- TV ads drive online posts about going to the store or making a purchase
Response of Traffic Growth to “Went/Purchased” Posts

- Posts about going to the store of buying merchandise drive traffic to stores, representing indirect TV effects
POE Media Drive Store Traffic

Model controls for general retail traffic level
POE Media and Store Visits
Drive Emotion

- Ads
- Went/Purchased
- Natural Search
- Online Traffic
- Store Traffic
- SEM
- Radio
- TV
- Circulars
Purchase WOM Driven Less by Paid Media

- Ads
- Love
- Natural Search
- Online Traffic
- Store Traffic
- Went/Purchased
- SEM
- Radio
- TV
- Circulars

Purchase WOM is driven less by paid media.
TV Exposure Drives Advertising WOM

- Love
- Went/Purchased
- Natural Search
- Online Traffic
- Store Traffic
- Ads
- SEM
- Radio
- TV
- Circulars

TV Exposure Drives Advertising WOM
POE Media Drive Online Search

- Ads
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- SEM
- Radio
- TV
- Circulars
- Online Traffic
- Store Traffic
Store Traffic: Permanent Effect of Ad Conversations

- Ad Conversations have about 25x effect of that of TV ads on Store Traffic
Comparison of Advertising Total Elasticities

<table>
<thead>
<tr>
<th></th>
<th>Store Traffic</th>
<th>Online Traffic</th>
<th>Google Search</th>
<th>Love Posts</th>
<th>Ad Posts</th>
<th>Went/ Purchased Posts</th>
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<tr>
<td>Tv</td>
<td>68%</td>
<td>23%</td>
<td>10%</td>
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<td>7%</td>
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Comparison of Different WOM Measures’ Elasticities on Store Traffic

*FB Daily Likes were not a statistically significant driver of Store Traffic*
Comparison of Different WOM Measures’ Elasticities on Website Traffic
Drivers of Offline Store Traffic

- Baseline
- Earned Media
- Paid Media
- Natural Search

Ads
Love
Went/Purchased
So What Can Businesses Do?

- Track the content, not just volume and valence of social interaction, and relate to marketing and sales.
- While business may not want a moderator, mediator or participant role in social media (Godes et al. 2005), it should move beyond observer role by targeting paid marketing to stimulate specific social interactions.
- Encourage virtuous circle of social interactions leading to purchase, which further induces social interactions about purchase (e.g. Kohls Facebook).
Limitations and Future Research

- Looked at Volume, valence & content, but dispersion of opinions may also matter (Godes and Mayzlin 2004)
- No data on purchase or life time value of consumers attracted in different ways (Villanueva et al. 2008)
- No competitive data, no experimental manipulation
- One retailer in one country: how do results depend on category/country social media penetration?
• Knowing “what” consumers say matters!
• Traffic reacts more to WOM than paid or owned media
• Total effects of paid media are underestimated without including indirect effects on traffic through WOM
• Visits to the store drive more WOM conversations
• Marketing differs in ratio of direct to indirect effects