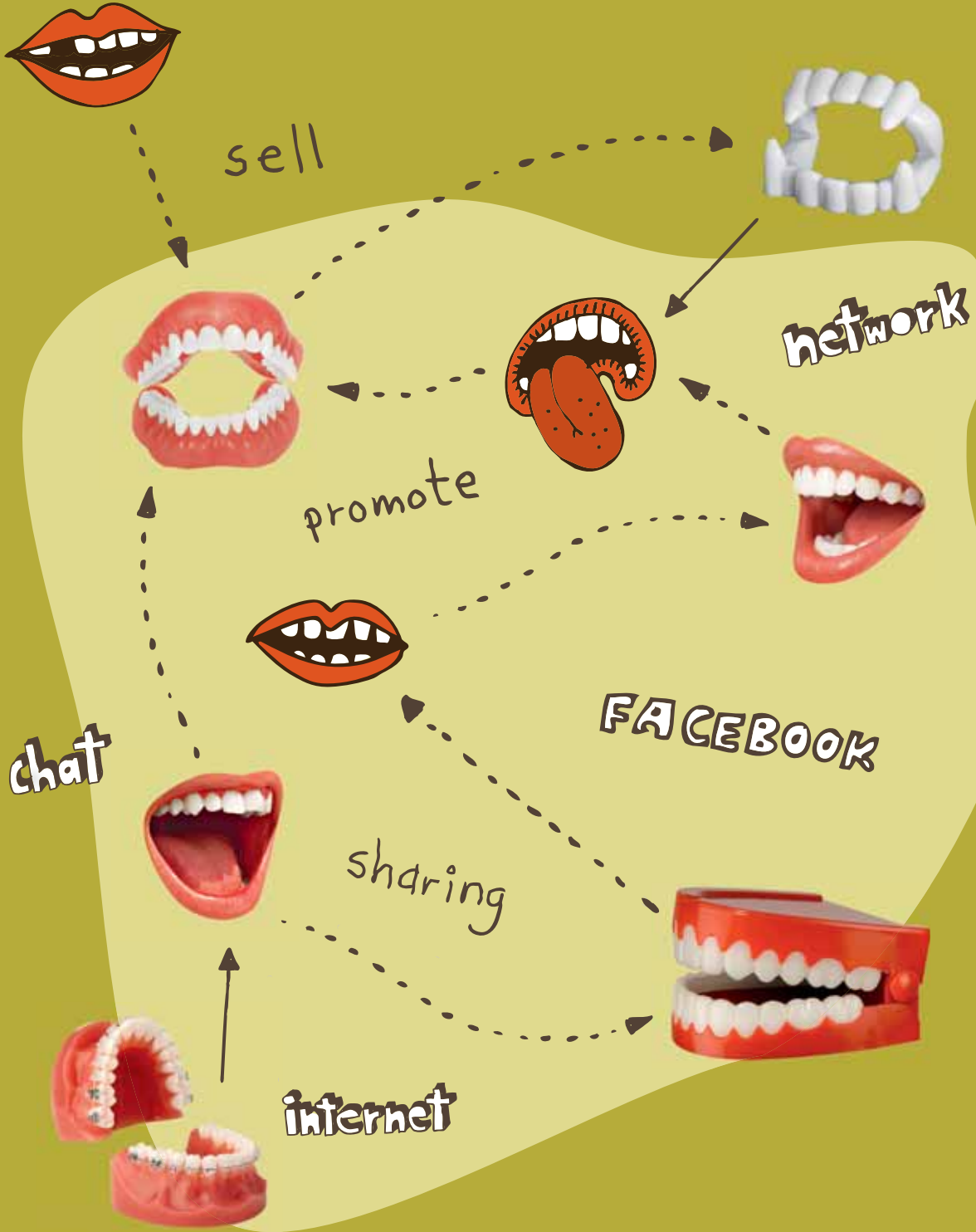


{ New Strategies }



# Do you want to be my “friend”?

## MONETARY VALUE OF WORD-OF-MOUTH MARKETING IN ONLINE COMMUNITIES

*Michael Trusov, Randolph E. Bucklin and Koen Pauwels*

How large and lasting are the effects of word-of-mouth (WOM) referrals versus paid marketing? What is the \$ / € worth of a WOM-referral to an Internet social networking site? This study finds that word-of-mouth referrals have substantially longer carryover effects than traditional marketing actions. The long-run elasticity of WOM on site signups is 0.53; about 20 times higher than that of marketing events, and 30 times that of media appearances. Based on revenue from advertising impressions served to a new member of the site, the monetary value of a WOM referral is about \$0.75 per year. By sending out 10 referrals, each network member thus brings in \$7.50 to the firm; which represents the maximum reward the firm could consider to incentivize word-of-mouth referrals. Managers can use this approach and findings to benchmark metrics for both WOM and traditional marketing, to test changes in online WOM referral content, and to decide on the appropriate size of financial incentives to stimulate WOM.

### **Word-of-Mouth: The Most Effective, yet Least Understood Marketing Strategy?**

Word-of-mouth (WOM) marketing has recently attracted a great deal of managerial attention. WOM is more and more touted as a viable alternative to traditional marketing communication tools. One calls it “the world’s most effective, yet least understood marketing strategy.” Marketers are particularly interested in better understanding word-of-mouth as traditional forms of communication may be losing effectiveness. For example, one survey showed consumer attitudes toward advertising plummeting between September 2002 and June 2004. Other survey results show that 40% fewer respondents agree that ads are a good way to learn about new products, 59% fewer say they buy products because of their ads, and 49% fewer find ads entertaining.

WOM communication strategies are appealing because they combine the prospect of overcoming consumer resistance with significantly lower costs and fast delivery — especially through technology such as the Internet. Indeed, the Internet provides numerous venues for

consumers to share their views, preferences, or experiences with others as well as opportunities for firms to take advantage of WOM marketing. In the words of commentator Whitman: “Instead of tossing away millions of dollars on Superbowl ads, fledging dot-com companies are trying to catch attention through much cheaper marketing strategies such as blogging and word-of-mouth campaigns.” Thus, it is vital to managers to understand whether word-of-mouth is truly effective on the Internet and, if so, how its impact compares to traditional marketing activities.

Unfortunately, empirical evidence remains limited regarding just how effective WOM marketing is in attracting customers over time. Managers who need to allocate firm resources require better measures for the monetary effects of both WOM *and* traditional marketing. A second benefit of such measures is allowing managers to benchmark different WOM/referral content options. Finally, a growing practice in both offline and online markets is to offer financial incentives to existing customers to provide WOM referrals (e.g., Netflix has incented

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current subscribers to recruit new ones). The key question is how much to pay for such WOM referral. To decide on the maximum amount to pay for such WOM referral, managers need to quantify how much additional revenue it brings to the firm.

Quantifying the full effects of WOM referrals and marketing requires us to account for the interplay of these communication mechanisms. Managers and researchers alike realize that WOM not only influences new customer acquisition but is itself affected by the number of new customers. Likewise, traditional marketing activities may stimulate WOM; they should be credited for this indirect effect as well as the direct effect they may have on customer acquisition. Also, all these communication mechanisms may have permanent effects on customer acquisition. For instance, WOM may be passed along beyond its originally intended audience and thus increase the site's potential to recruit signups in the future. Network externalities can also imply that signup gains today may translate into higher signup gains tomorrow, even in the absence of marketing actions. In the presence of all these effects, separating out the monetary value of word-of-mouth requires excellent longitudinal data, which are provided in the context of Internet social networking sites.

#### Do You Want to be my "Friend"?

Social networking sites have become extremely popular, with the majority of US Internet users visiting at least one of the top 15 social networking sites. About 50 social networking websites each have more than one million registered users and several dozen smaller, though significant, sites cater to specific niches. As of June 2009, the largest online social networking site, Facebook.com, boasts 122 million unique visitors per month.

» Instead of tossing away millions of dollars on Superbowl ads, fledging dot-com companies are trying to catch attention through much cheaper marketing strategies such as blogging and word-of-mouth campaigns. «

Social networking sites allow a user to build and maintain a network of friends for social or professional interaction. The core of a social networking site consists of personalized user profiles. Individual profiles are usually a combination of users' images (or avatars), list of interests, music, books, movies preferences, and links to affiliated profiles ("friends"). Different sites impose different levels of privacy in terms of what information is revealed through profile pages to non-affiliated visitors and how far "strangers" vs. "friends" can traverse through the network of a profile's friends. Profile holders acquire new "friends" by browsing and searching through the site and sending requests to be added as a friend.

Typically, sites facilitate referrals by offering users a convenient interface for sending invitations to non-members to join. Figure 1 shows how a popular social networking site, Facebook.com, implements the referral process.

The social network setting offers an appealing context in which to study word-of-mouth. The sites provide easy-to-use tools for current users to invite others to join the network. The electronic recording of these outbound referrals opens a new window into the effects of WOM, giving us an unobtrusive trace of this often hard-to-study activity. When combined with data that also tracks new member signups, it becomes possible to model the dynamic relationship between this form of word-of-mouth and the addition of new members to the social networking site. These members are, in a real sense, also "customers" of the social networking site, as their exposure to advertising while using the site produces revenue for the firm.

#### What Drives the Growth of Your Site?

Figure 2 displays the daily signups (new members) for a social networking site from February 1 to October 16, 2005. Besides the seasonal patterns of day of the week and holidays, the graph clearly shows the growth in customer acquisition.

The key question for management is: to what is this growth attributable? The interplay of several forces drives a growth process of a typical social networking site. On the firm's end these are traditional marketing activities like advertising, event marketing (directly paid for by the social networking site) and media appearances (induced by PR), while on the consumers' end it is primarily word-of-mouth (WOM) referrals. As visualized in Figure 3, WOM referrals lead to new signups and (following the reverse arrow) new signups lead to more WOM referrals, and therefore indirectly to more new



FIGURE 1:  
Referrals Process at  
Facebook.com

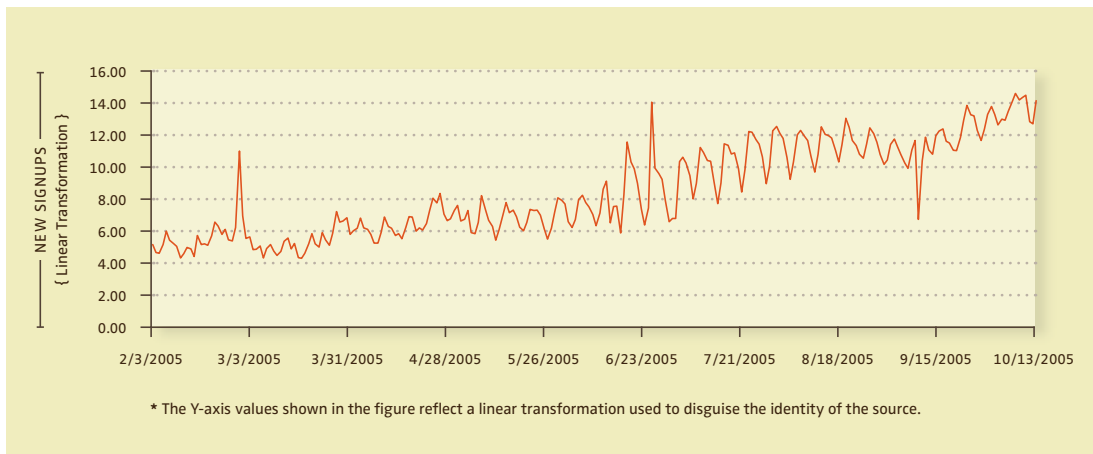


FIGURE 2:  
The Growth of a Social  
Networking Site

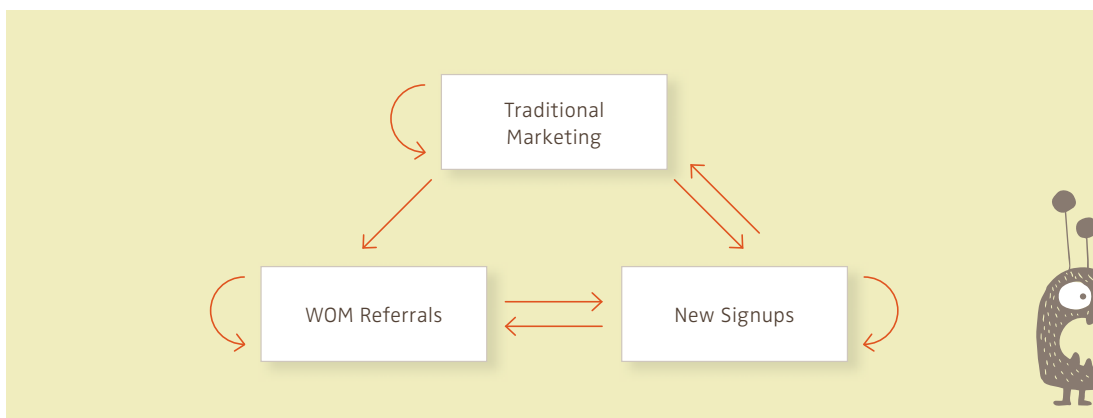
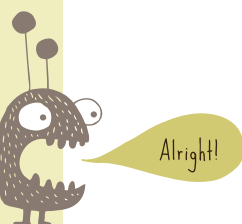
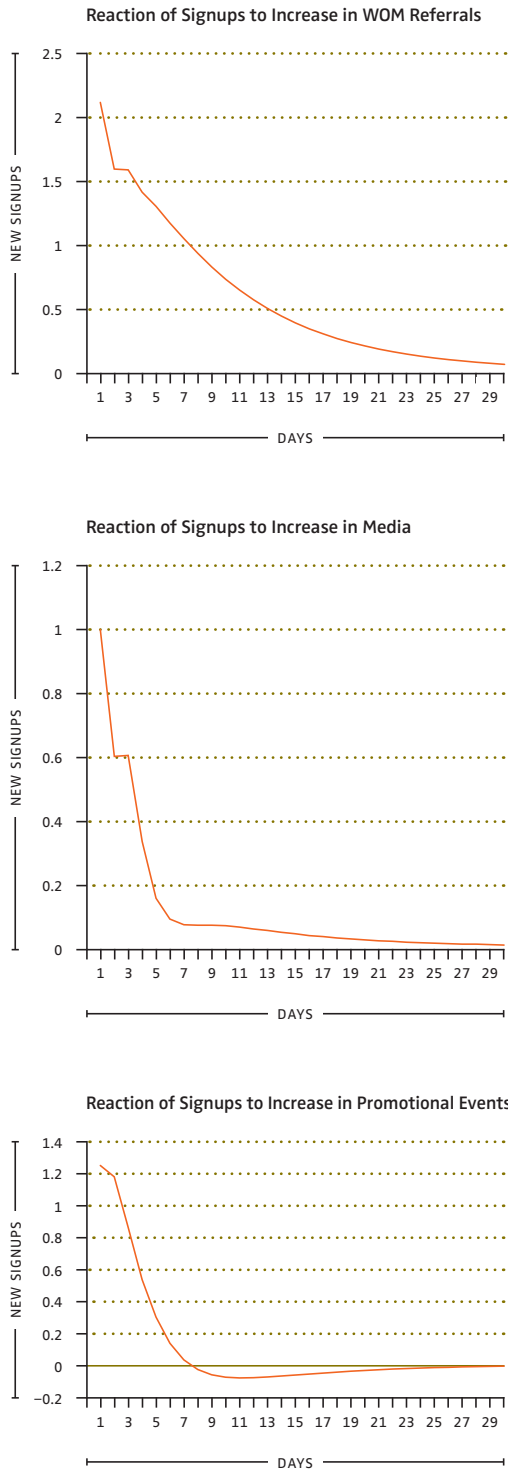


FIGURE 3:  
Driving Forces  
of Growth



**FIGURE 4:**  
Response of Signups to Increase in Referrals, Media and Promotional Events



signups. A similar pattern of influence is observed for new signups and traditional marketing activity — traditional marketing stimulates WOM referrals, leading to another indirect effect on new signups. Lagged effects of traditional marketing, new signups, and WOM referrals are also included in the model (as indicated by the curved arrows).

A proper statistical analysis which accounts for these interactions allows us to quantify the impact each of the individual drivers has on all other components in the system (for details, see Trusov/Bucklin/Pauwels 2009). Of particular interest to site management is the short-run and long-run effects of WOM and traditional marketing actions on new customer acquisition.

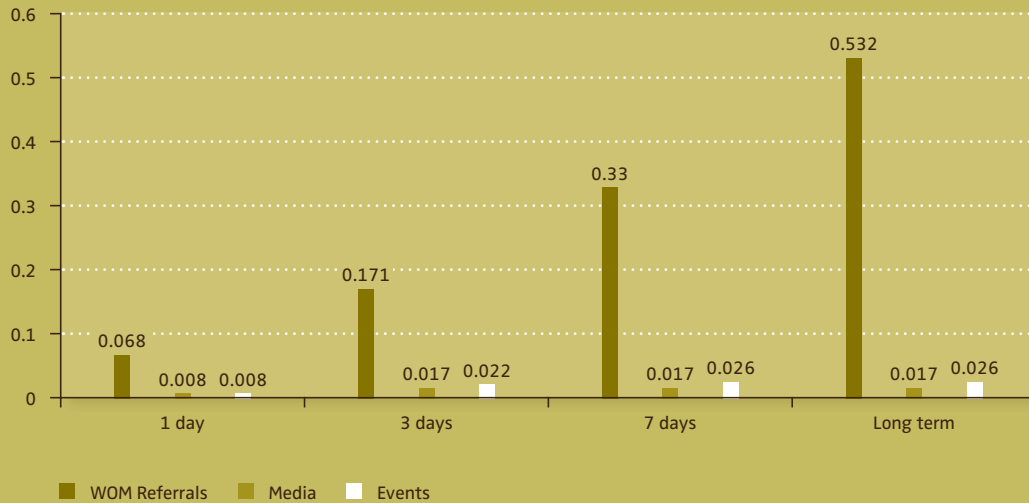
**Short-term and Long-Term Effects for WOM and Traditional Marketing Actions**

Based on the model estimates, Figure 4 plots the effect of WOM referrals, media, and events on new signups over time.

The top panel in Figure 4 shows that the effect of the one-time increase in WOM lasts for about three weeks. In contrast, the effects of media and events disappear within just a few days (middle and bottom panels of Figure 4). Promotional events even experience a “post-promotion dip” indicated by the (small) negative values for effects beyond 8 days. In other words, new members that would have signed up later, are encouraged by the promotional event to sign up now. Compared to traditional marketing activities, the WOM referrals induce both a larger short-term response as well as a substantially longer carryover effect.

As to the size of the effects, Figure 5 presents the estimated elasticity (i.e., percentage change in new signups to percentage change in a corresponding marketing driver) for WOM, events, and media. For managers interested in the timing of returns, we distinguish the elasticity at 1 day, 3 days, 7 days and long-run (summing up all effects over time).

The immediate (1 day) elasticity of WOM (0.068) is 8.5 times higher than that of traditional marketing actions (0.008). Moreover, this discrepancy grows over time. Indeed, the long-run elasticity indicates that WOM-referrals are akin to the “gift that keeps on giving,” especially when compared to the performance of traditional marketing activities. Figure 5 shows that the long-run elasticity of WOM referrals (0.53) is about 20 times higher than the elasticity for marketing events (0.53 vs. 0.026) and 30 times higher than the elasticity for media appear-



**FIGURE 5:**  
Short-Term Versus  
Long-Term Elasticity of  
Signups with Respect to  
WOM Referrals and  
Marketing Activities



ances (0.53 vs. 0.017). The estimated WOM elasticity of 0.53 substantially exceeds the range of values for advertising elasticities reported in the literature. This supports the notion that WOM may be among the most effective of marketing communication strategies. But of course the effectiveness of different marketing instruments is company specific — point elasticity comparisons do depend on a “base” level of these instruments. Therefore our findings should not be taken as generalization. On the other hand, in this paper we are dealing with a major social networking site, and therefore the scale of a membership base, media coverage and promotion events are representative for the industry leader.

#### Monetary Value of WOM Referrals

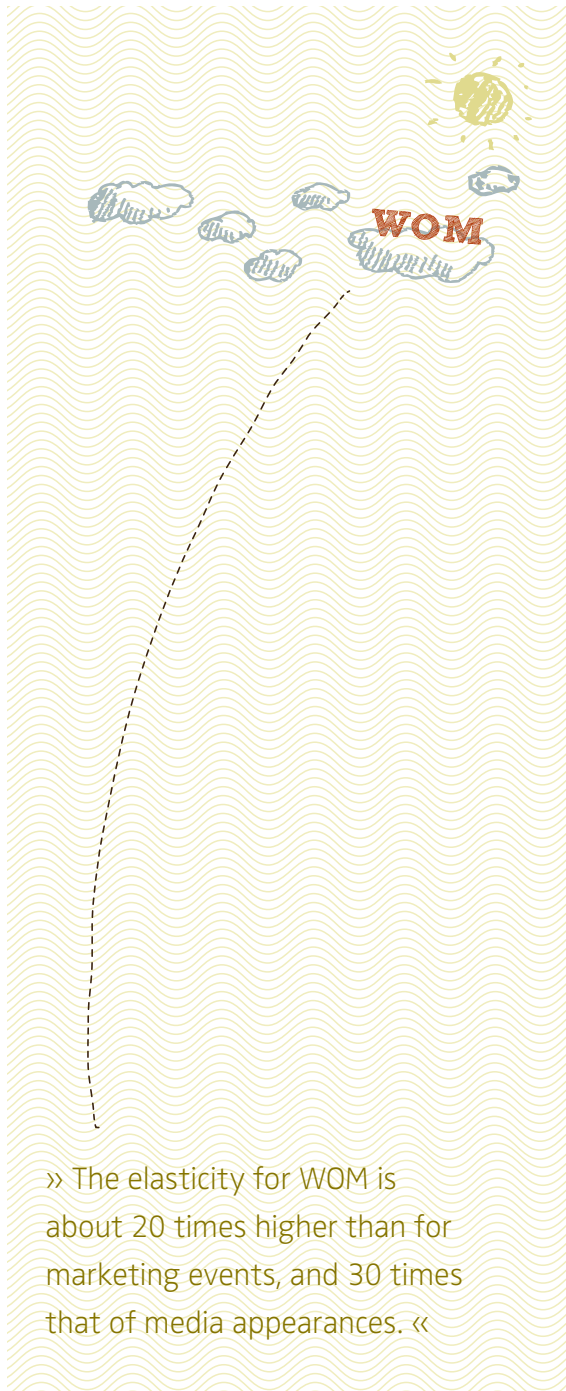
To calculate the monetary value of WOM, managers also need to know how much revenue each new member (signup) brings in for the firm. For the typically free social networking site, a new member brings in revenues due to future banner ad exposures. In the absence of firm-specific data, managers can use industry averages for cost per thousand impressions (CPM) and number of impressions per user / day while making assumptions regarding a customer’s projected lifetime with the firm. For CPM, we obtained price quotes from several social networking sites and concluded that about 40 cents is reasonable. For impressions, the average number of pages viewed on a community site by a unique visitor per month is about 130. Assuming the average page carries two to three ads, we calculate that the average user contributes approximately 13 cents per month or approximately \$1.50 a year. From our elasticity estimates, we know that 10

WOM-referrals bring in roughly an estimated 5 new site members over the course of 3 weeks. This suggests that each outbound referral is worth about 75 cents per year. By sending out 10 referrals, each network member could bring in about \$7.50 to the firm.

Two important caveats apply to this number. First, it is based on banner ad exposure. Other online advertising models such as pay per click (PPC), pay per lead (PPL), and pay per sale (PPS) could be analyzed by substituting appropriate conversion rates. Second, when a company

» ...the effect of the one-time increase in WOM lasts for about three weeks. In contrast, the effects of media and events disappear within just a few days. «





stimulates WOM activity with financial incentives, it is no longer “organic” word-of-mouth. Indeed, one might term it “fertilized” word-of-mouth. We do not know whether fertilized word-of-mouth would produce the same elasticity as the organic word-of-mouth observed in our data. If the paid nature of WOM activity is known to prospective members, fertilized word-of-mouth may be substantially less effective than organic word-of-mouth. In this respect, the monetary value calculations represent an upper bound of the money that could be generated by stimulating word-of-mouth. The key implication is that, if the firm cannot effectively generate additional referrals at less than 75 cents each, it should not pursue firm-stimulated WOM programs.

#### **What Have We Learned and What Do We Still Need to Learn?**

In today’s connected world, managers face many options to stimulate growth, including word-of-mouth referrals. Effective allocation of firm requires benchmarking of the monetary value of word-of-mouth referrals, in the context of other growth drivers and of complex feedback loops among WOM, marketing activity, and customer acquisition. Analysis for an online social networking site revealed that WOM referrals have a very strong impact on new customer acquisition. The long-run elasticity of signups with respect to WOM is estimated to be 0.53 (substantially larger than the average advertising elasticities reported in the literature). The elasticity for WOM is about 20 times higher than for marketing events, and 30 times that of media appearances. Thus, the outlined approach offers managers a tool to improve the metrics they use for assessing the effectiveness of traditional marketing when WOM effects are present.

Based on revenue from advertising impressions served to a new member of the site, the monetary value of a WOM referral is about 75 cents per year. Managers can use this approach to test changes in online WOM referral content, and to decide on the appropriate size of financial incentives to stimulate WOM.

Not all managerial questions could be addressed by the current data. First, it did not contain information on competing sites, and therefore did not allow an analysis of

the effects of competitive WOM-referrals and marketing activity. Second, the data tracks new signups and WOM at the aggregate level. Site members attracted in different ways (i.e. through WOM, events or media appearances) could differ in visit frequency and pages viewed, and thus yield different revenue benefits to the site. The lack of such individual-level data did not allow us to make this distinction in our revenue calculations. Third, the collaborating social networking site already had a well established brand among many online communities. Because social networking sites start out with a crucial mix of user-generated content and WOM of founders to friends, WOM may be even more important for small sites, which also typically do not have the funds for paid marketing events nor get much media attention.

Application of our approach to other settings will also reveal whether the "dominance of WOM" for a particular social networking site extends to other firms and industries. This may well be the case, as a review of 23 service categories reported that WOM had greater reported impact on brand choice than advertising or personal search.

In conclusion, this study has shed new light on "the world's most effective, yet least understood marketing strategy," providing the empirical evidence that word-of-mouth communication is a critical factor for firms seeking to acquire new customers and that WOM can have larger and longer-lasting effects than traditional marketing activity. •

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