Reconsidering Models of Influence: The Relationship between Consumer Social Networks and Word-of-Mouth Effectiveness

TED SMITH
CNET Networks
ted.smith@media researchlab.com

JAMES R. COYLE
Richard T. Farmer School of Business, Miami University
coylejr@muohio.edu

ELIZABETH LIGHTFOOT
CNET Networks Business
Liz.Lightfoot@cnet.com

AMY SCOTT
MedTrackAlert
ascott@medtrackalert.com

In today's fragmented media landscape, generating positive word of mouth (WOM) among consumers has become an important tool for marketers. Marketers are challenged with identifying influential individuals in social networks and connecting with them in ways that encourage WOM message movement. In this article, we explore the nature of social networks, their role in influence, and the characteristics of the most influential individuals. We also examine the characteristics of viral marketing messages. Our findings contradict the commonly accepted notion that WOM influence comes from an elite, highly-connected few. Rather our research suggests that most people are moderately connected and are as willing as the highly connected to share marketing messages with others. Also, we find that influence is motivated by our basic human need to be helpful by giving advice, and that people share a common enjoyment in seeking out valuable information. The implications of these findings for marketers are discussed.

In today's highly fragmented media landscape, generating positive word of mouth (WOM) among consumers has become a very important tool for marketers (Bowman and Narayandas, 2001; Godes and Mayzlin, 2004; Liu, 2006), and this is especially so in digital media (Huang and Chen, 2006). Traditional marketing methods simply do not reach their target audiences with the same effectiveness as they did just a decade ago. Instead, WOM has become an increasingly useful channel to share information in our society and should continue to grow in importance (Keller and Berry, 2003). Thus, there has been a recent surge of interest in how marketers can take advantage of social networks to generate buzz.

Marketers are faced with the challenge of identifying influential individuals in social networks and connecting with them in ways that encourage WOM message movement. While there have been several best sellers discussing theoretical frameworks of influence (Barabasi, 2002; Gladwell, 2002; Keller and Berry, 2003), academic researchers have only recently begun examining WOM effectiveness and buzz, or viral, marketing (Sun, Youn, Wu, and Kuntaraporn, 2006).

The changing nature of the media and communications landscape adds to the complexity. For example, the internet is characterized by scale-free connectivity, meaning it is dominated by several large websites that are linked to a tremendous number of other websites. The spread of messages on scale-free networks does not succeed or fail depending upon passing a critical threshold of receivers, as diffusion models predict. Instead, the threshold is zero on scale-free networks, increasing the likelihood that messages disseminated online will spread rapidly and persist over time (Barabasi, 2002; Barabasi and Bonabeau, 2003).

Through a series of three studies, we use various research methods to study viral marketing

DOI: 10.2501/S0021849907070407

effects on several audiences. In the first two, we explore the nature of social networks, the role they play in influence, and characteristics of the most influential individuals. In our last study, we look at the characteristics of marketing messages that may make some more viral than others. Before introducing the studies, we review the relevant marketing, information technology, and communication literature. We conclude by discussing the managerial implications for effective marketing communications efforts, our study's limitations, and recommendations for future research.

STUDY 1

In study 1, we conducted a survey to investigate the nature of social networks, communications, and influence, and the role played by specific sites in facilitating influence via social networks. We also analyzed website usage patterns as they relate to social network size.

The structure of social networks

Conventional wisdom holds that influence is not widespread, but is the domain of a few high-profile individuals who have deep expertise in a certain subject matter, have an extraordinary number of contacts in their social network, or are exceptionally persuasive (Gladwell, 2002). This notion that "In America, the few act for the many" (Keller and Berry, 2003, p. 2) has informally shaped media and marketing models that depict the influence process as a pyramid in which a few highly influential individuals occupy the top layer. The mass of others who consume, but do not advise, make up the larger layers below them. This pyramid-shaped model has been widely adopted by marketers and public relations professionals. This has led to a lot of marketing communications resources and energy spent focusing on the elite few at the top of the pyramid.

Early communication literature has pointed to opinion leaders (Katz and Lazarsfeld, 1955) and close social ties (Czepiel, 1974) as being the primary disseminators of information in social networks. In the marketing literature, such individuals are known as market mavens, "individuals who have information about many kinds of products, places to shop, and other facets of marketers, and initiate discussions with consumers and respond to requests from consumers for market information" (Feick and Price, 1987, p. 85).

Researchers studying the role of the internet in facilitating WOM communications have hypothesized that such communications will spread online quickly within strong tie communities (Godes and Mayzlin, 2004) and that the main disseminators of information will be online opinion leaders known as "e-influentials" (Burson-Marsteller, 2001). However, recent research found no significant relationship between strong ties and online opinion leadership (Sun, Youn, Wu, and Kuntaraporn, 2006).

One reason for these conflicting findings may be due to the different roles that strong and weak ties may play in WOM influence. The strength of a tie is a function of time, emotional intensity, intimacy, and reciprocity that characterizes the tie (Granovetter, 1973). Not surprisingly, it appears that strong ties are more influential than weak ties in information being shared at the micro level (i.e., between small groups) of referral behavior, while weak ties are more influential than strong ties in information being shared at the macro level (i.e., flow of communication across groups) (Brown and Reingen, 1987; Granovetter, 1973).

The motivators to influence

Altruism has been found to be an antecedent to marketing helping behavior, and the market maven construct mediates this relationship (Price, Feick, and Guskey, 1995). In a study of why consumers express their opinion in online consumer opinion platforms (e.g., epinions.com), there were four primary factors: consumers' desire for social interaction, their desire for economic incentives, their concern for other consumers, and the potential to enhance their self-worth (Hennig-Thurau, Gwinner, Walsh, and Gremler, 2004).

Areas of influence

An important difference between market mavens and opinion leaders is their scope of influence. While market mavens are sources of information about the marketplace in general, opinion leaders tend to be influential within specific categories (Clark and Goldsmith, 2005; Feick and Price, 1987). In this study, we look at the relationship between the number of areas of influence and the size of one's social network.

Participants

To meet the objectives of study 1, a sample from CNET Network brand site visitors was chosen based on the following criteria:

- Respondent took action to indicate he or she wanted to receive information from the brand.
- Respondent visited the brand in the last 120 days and had valid web cookie data for his or her visit.

These visitors were selected from the following CNET Network sites:

- CNET.com (shopping section visitors)
- GameSpot
- TV.com
- Webshots (travel section visitors)
- BNET
- TechRepublic
- ZDNet (enterprise technology section visitors).

TABLE 1
Survey Respondents by Group

Group	Number of Respondents
BNET	663
CNET.com	1,194
GameSpot	1,527
TechRepublic	2,513
TV.com	1,362
Webshots	1,807
ZDNet	2,725
Total	**11,791**

In all, we surveyed 11,791 participants. Table 1 details the number of respondents from each CNET Networks brand. There were 8,617 males (73 percent) and 3,174 (27 percent) females in our sample.

Measures

To measure personal network size and composition, participants were asked to indicate the number of people they communicated with at least once a month and categorize them into the following groups:

- close, personal friends
- casual friends
- neighbors
- adult family members (immediate and extended)
- co-workers, employees, work supervisors, or clients
- church and civic organization members.

We also asked participants how they communicated with their network members. Specifically, we asked each participant how many of those people in their network they communicated with by email, instant messaging, sending a text message, talking on the phone, or seeing in person. Participants could choose more than one of these types of communication if applicable. For example, if a participant communicated with a person by email and talking on the phone, she would choose both.

To explore motivators to influence, we asked respondents to indicate how much they agreed or disagreed with the following statement:

> I love to tell other people about something new I've learned.

We also asked them to think about the people closest to them and indicate how much they agreed with the following statement:

> They ask my opinion and often follow my advice.

To learn more about the number of topics that our participants were interested in, we asked them to indicate which of the following topics they were involved in:

1. cars and automotive trends
2. clothes and fashion
3. professional and/or college sports
4. money and investing
5. travel
6. clubs, bars, and night life
7. music
8. exercise and personal fitness
9. wellness and healthy living
10. cooking
11. electronics
12. wine, beer, or other alcoholic beverages (scotch, bourbon, etc.)
13. outdoor sports (hiking, camping, fishing, hunting, etc.)
14. athletics and active sports
15. video/console and/or PC gaming
16. restaurants/eating out
17. sports/fitness nutrition foods and beverages
18. television and film
19. entertainment news and popular culture
20. technology or consumer electronics.

Site usage methodology

Survey respondents were investigated for site usage patterns. To enable this, their email address or their encrypted global ID was stored with their survey results. This allowed us to link their survey data with their site activity data.

These data gave us the opportunity to measure influence behavior. To do this, we captured the frequency with which participants contributed content such as forum posts or product reviews in the last 90 days, and the number of tags in their profile.

Analysis and results

The size of one's personal network can vary widely. Figure 1 shows this distribution and that it approximates a normal curve once adjusted for the very few cases of extremely large personal networks. For subsequent analyses, we categorized those people with 10 or fewer connections as Less Connected, those with 11 to 99 connections as Moderately Connected, and those with 100 or more connections as Highly Connected.

As can be seen in Table 2, we find a significant relationship between self-reported influence activity and network size ($\chi^2[2, N = 11{,}791] = 185.305$, $p < 0.01$). Less than half of those who have 10 or fewer connections in their network agreed that others asked their opinion and often followed their advice, compared to 65 percent of those with 11–99 connections and 76 percent of those with 100 or more connections.

Table 3 presents the relationship between network structure and size, while Table 4 illustrates the role of technology

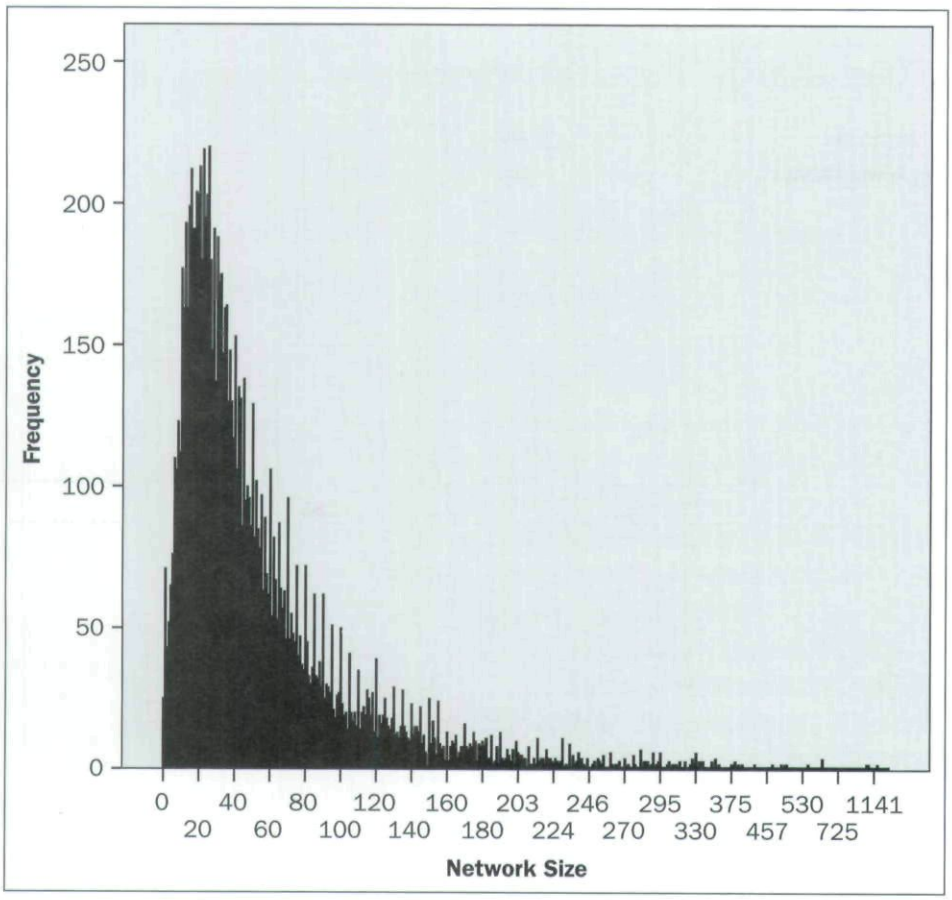

Figure 1 Distribution of Respondents by Personal Network Size

in staying connected as network size increases.

Finally, Table 5 displays the mean number of topics of interest by social network size. Respondents with highly (11.63) and moderately (11.33) connected networks are interested in significantly more topics than respondents with less connected networks ($M = 9.88$) ($F[2, 11{,}788] = 54.27$, $p < 0.01$).

Site usage

For this part of the analysis, we looked specifically at TechRepublic user behavior data, which were available from 77 percent of the TechRepublic survey respondents. There appears to be a positive correlation between network size and amount of contributed content, and between network size and number of tags in profiles. More connected users are more likely to contribute content like forum posts and product reviews than less connected users. More connected users are also more likely to create tags to assign information to a particular category of interest than less connected users.

Discussion

In terms of influence, the distribution of social network size allows us to evaluate whether the pyramid model is applicable. The pyramid model suggests that influence comes from a few highly connected people who advise the unconnected masses. However, our study finds that the distribution of personal network size is approximately normal when adjusted for the very few outliers of extreme connectivity. It is the moderately connected majority, not the much smaller number of highly connected people, who hold the greatest potential for influence. Thus, in our study the pyramid model of influence was not a good fit.

TABLE 2
Self-Reported Influence Activity and Social Network Size

	Less Connected (10 or Fewer Connections)	Moderately Connected (11 to 99 Connections)	Highly Connected (100 or More Connections)
People ask my opinion and often follow my advice—**Agree**	479 (49.9%)	5,851 (64.7%)	1,349 (75.6%)
People ask my opinion and often follow my advice—**Do not agree**	481 (50.1%)	3,196 (35.3%)	435 (24.4%)
Total	**960**	**9,047**	**1,784**

TABLE 3

Mean Number of People Stayed in Contact with by Social Network Size and Network Structure

	Less Connected (10 or Fewer Connections)	Moderately Connected (11 to 99 Connections)	Highly Connected (100 or More Connections)
Close personal friends	2	8	24
Casual friends	2	10	41
Neighbors	1	3	10
Adult family members	2	6	16
Co-workers, employees, work supervisors, or clients	2	11	60
Church and civic organization members	1	4	32
Total	**10**	**42**	**183**

TABLE 4

Mean Number of People Stayed in Contact with by Social Network Size and Method of Communication

	Less Connected (10 or Fewer Connections)	Moderately Connected (11 to 99 Connections)	Highly Connected (100 or More Connections)
Email	5	21	84
See in person	4	20	88
Talk on phone	4	14	46
Instant message	1	5	16
Text message	1	4	15
Total	**15**	**64**	**249**

TABLE 5

ANOVA of Mean Number of Topics of Interest by Social Network Size

Less Connected (10 or Fewer Connections)	Moderately Connected (11 to 99 Connections)	Highly Connected (100 or More Connections)	*F* Value	*p* Value
9.88[a]	11.33[b]	11.63[b]	54.27	0.00

Note: Means with different superscripts indicate significant differences as indicated by Tukey post hoc tests.

To answer questions about whether there are many or few who are highly influential, the survey explored respondents' personal network size and structure. Our research supports the notion of a "Weak Link" effect: as personal network size grows, the proportion of informal members shows the greatest increase. This is an indication of the importance of connections to informal members in a person's network because it is these weak links that are often the connecting nodes between different network structures. In other words, it is likely the casual friend who acts as a pollinator of a message, carrying buzz from one group of close friends to a separate group of close friends.

Regarding WOM influence, the most commonly accepted notion has been that such influence comes from an elite few. Countless hours and dollars have been spent trying to reach this perceived all-powerful group at the top of the influence pyramid.

Another perception challenged by our research is that a person is influential in only one area of interest or knowledge, as the opinion leader research would suggest. We found, instead, that our participants claimed to follow about 10–12 areas of interest, regardless of the size of their network. Thus, to assume that a person who visits, for example, a technology site cares only about technology-related messages fails to take advantage of a dozen other opportunities for communication. Instead, new media may make it easier for more individuals to acquire the breadth of knowledge that marketing mavens are known for, rather than the specialized knowledge characteristic of opinion leaders. Also, respondents with moderately sized networks expressed interest in the same number of topics as those with large networks.

The study also reveals the importance of technology in making personal networks possible. Technology enables the maintenance and frequency of a large number of connections. Because of the ease of distributing messages via the internet, we see highly connected people making great use of technologies like email, instant messaging, and text messaging to stay in touch. The site usage data suggest that contrary to conventional wisdom that points to self-promoting activities such as blogging as indicators of influence, we found that as social network size grows, so does the use of website features that enable altruistic behavior like rating. Additionally, features such as tagging or social bookmarking are also associated with greater personal network size, and we postulate that these tools are used explicitly to aid in subsequent helping behavior because they help the individual locate information for future use.

STUDY 2

In study 2, we conducted in-depth interviews designed to elicit a deeper understanding of personal motivations to influence.

Participants

Interviews were conducted with people reporting moderate to large networks who actively give advice. Specifically, respondents who ranked in the top third of self-identified scores of influence and who reported having moderate to large social networks were recontacted and asked to participate in an interview. Influence scores were measured in study 1 and were based on two items. First, respondents indicated their agreement with the statement, "I love to tell other people about something new I've learned." Second, respondents were asked to think about the people closest to them and indicate how much they agreed with the statement, "They ask my opinion and often follow my advice." Table 6 shows the number of interview respondents from each CNET Networks brand.

TABLE 6
Interview Respondents by Group

Group	Number of Respondents
CNET.com	5
GameSpot	5
TV.com	4
Webshots	4
Total	**18**

Interview methodology

Respondents were asked to share a story about a recent referral or recommendation they had made. Once the memories of this moment of influence were retrieved, interviewers focused the discussion on the thoughts and feelings the influence experience evoked from the respondent. If necessary, interviewers referred respondents to a word list consisting of descriptors of various emotions. Each interview lasted between 30 and 45 minutes.

Discussion

This portion of our research finds that influencers are primarily motivated by a desire to help others. People like to be needed and valued, and influencers appear to derive a sense of self-worth and validation from giving good advice. When this advice is well received, it gives them confidence to continue and expand their efforts. This is consistent with the market maven literature, which finds that in the physical marketplace market mavens display higher levels of helping behavior than those not considered market mavens (Price, Feick, and Guskey, 1995).

STUDY 3

In study 3, we conducted a survey to explore whether message characteristics

may make some marketing messages more viral than others. To do this, we focused on health care communications because there has been a great deal of research that has been conducted on how people respond to this type of communication. We tried to extend this research to determine what kinds of health communications were likely to generate WOM effects among interested consumers. In other words, we ask the question, "Do some of the same elements that make a health message persuasive to its target also persuade one to pass that message along to others in a social network?"

Word-of-mouth message characteristics

Health messages are often more effective when they are tailored to match important characteristics of the recipient (Kreuter, Strecher, and Glassman, 1999; Updegraff, Sherman, Lyster, and Mann, 2007). Health messages have also been found to be more effective when the message recipient perceives that he or she has the necessary skills and abilities to perform the necessary behavior that a particular message communicates is necessary (Fishbein, 2000; Fishbein et al., 2001).

Another area of health communications effectiveness concerns how a health message is framed. Gain-framed messages communicate the benefits of adopting a health behavior, and loss-framed messages communicate the consequences of not adopting a particular behavior. Whether gain-framed or loss-framed messages are more effective depends on the target audience's perception of the risk associated with adopting the recommended behavior (Salovey, Schneider, and Apanovitch, 2002; Salovey and Williams-Piehota, 2004; Visawanath and Emmons, 2006).

Also, some health research suggests that social pressure derived from the belief that others are performing a particular health behavior or that others think that one should perform that health behavior can positively affect the target audience's likelihood of performing that behavior (Fishbein and Cappella, 2006).

More generally, it may be that monetary incentives will persuade people to forward messages to others (Welker, 2002). In support of this idea is research that finds marketing mavens to be heavy coupon users and very active in sharing coupons with others (Price, Feick, and Guskey-Federouch, 1988).

Participants

We surveyed 4,947 respondents who were members of the www.medtrackalert.com website. These consumers are self-identified health-concerned individuals who range in ages between 35 and 65.

Measures

Our measure of personal network size and composition was the same as in study 1. There were 598 respondents categorized as less connected, 3,855 as moderately connected, and 494 as highly connected.

To determine level of WOM effectiveness, we included seven questions based on literature described previously. First, to explore the effectiveness of tailored health messages, we asked participants to use a 7-point Likert-type scale anchored by Very Likely and Very Unlikely to answer the following question:

> If you see an advertisement about a health product that you think would be useful to someone you know, how likely would you be to share information from the advertisement with others?

To determine the efficacy of health messages that communicate that the target has the necessary skills and abilities to use the medication by discussing its ease of use, we asked participants to use a 7-point Likert-type scale anchored by Very Likely and Very Unlikely to answer the following question:

> If you see an advertisement that focuses on how easy a medicine is to use, how likely would you be to share information from the advertisement with others?

To explore how gain-framed and loss-framed messages might affect people's propensity to forward health-related messages and/or to use a medical product, we asked participants to use a 7-point Likert-type scale anchored by Very Likely and Very Unlikely to answer the following questions:

1. If you see an advertisement that focuses on the symptoms of a disease or disorder that may be experienced by someone you know, how likely would you be to share information from the advertisement with others?
2. If you see an advertisement that focuses on the positive outcomes of a medicine or treatment, how likely would you be to share information from the advertisement with others?

Influence is not, in fact, exclusive, but is something we all share. Influence is not a function of charisma or expertise so much as a function of human nature—people are alike in more ways than they differ.

3. If you see an advertisement that focuses on how to better control a disease or disorder, how likely would you be to share information from the advertisement with others?

To determine the role of normative beliefs in the likelihood of forwarding health-related messages and/or purchasing medical products, we asked participants to use a 7-point Likert-type scale anchored by Very Likely and Very Unlikely to answer the following question:

If you see an advertisement that mentions how patients are getting good results from a medication or treatment, how likely would you be to share information from the advertisement with others?

To investigate whether the mention of cost savings in a message persuades people to forward health-related messages and/or purchase medical products, we asked participants to use a 7-point Likert-type scale anchored by Very Likely and Very Unlikely to answer the following questions:

If an advertisement offers a discount or coupon for a particular drug, how likely would you be to share information from the advertisement with others?

Table 7 shows the means for each of the seven items. The items were then summed to create a scale measuring WOM message effectiveness. The Cronbach's alpha statistic for this scale was 0.95,

TABLE 7
Group Means for WOM Message Effectiveness Items

Survey Item	Less Connected	Moderately Connected	Highly Connected
If an advertisement offers a discount or coupon for a particular drug, how likely would you be to share the advertisement with others?	4.90	5.25	5.38
If you see an advertisement about a health product that you think would be useful to someone you know, how likely would you be to share information from the advertisement with others?	5.55	5.97	6.05
If you see an advertisement that focuses on how easy a medicine is to use, how likely would you be to share information from the advertisement with others?	4.96	5.27	5.45
If you see an advertisement that focuses on the symptoms of a disease disorder that may be experienced by someone you know, how likely would you be to share information from the advertisement with others?	5.60	5.92	5.95
If you see an advertisement that focuses on the positive outcomes of a medicine or treatment, how likely would you be to share information from the advertisement with others?	5.37	5.70	5.79
If you see an advertisement that focuses on how to better control a disease or disorder, how likely would you be to share information from the advertisement with others?	5.43	5.77	5.85
If you see an advertisement that mentions how patients are getting good results from a medication or treatment, how likely would you be to share information from the advertisement with others?	5.38	5.68	5.77

Today's media and marketing models underestimate the great potential in most consumers and, instead, focus mainly on the highly connected few.

indicating a high level of internal scale reliability.

Analysis and results

To explore how willing respondents with different social network sizes were to pass along messages, we conducted a one-way analysis of variance on the group means of WOM message effectiveness. Table 8 shows the means for each group and F value for the one-way ANOVA. In addition, Tukey *post hoc* tests were conducted to identify significant differences between groups. These results are also found in Table 8. We found that respondents whose social network sizes were small indicated significantly less willingness ($M = 5.31$) to share information that they saw in an advertisement than respondents whose social network sizes were moderate (5.65) or large ($M = 5.75$) ($F[2, 4{,}944] = 19.99$, $p < 0.01$). There was no significant difference between respondents whose social network sizes were moderate and respondents whose network sizes were large.

Discussion

With this research, we were able to demonstrate that moderately and highly connected respondents are more willing to forward marketing messages and were virtually equal in their willingness to do so. This is consistent with our finding in study 1 that the percentage of moderately (72 percent) and highly connected respondents (76 percent) who indicated that they love to tell people about something new they have learned were approximately equal. Taken together, there does not appear to be much difference between the two groups' desire to and likelihood of passing along marketing messages.

IMPLICATIONS

Regarding WOM influence, the most commonly accepted notion has been that such influence comes from an elite few. Countless hours and dollars have been spent trying to reach this perceived all-powerful group at the top of the influence pyramid. However, our results directly challenge this model and, in particular, the notion that the individual differences that make market mavens and opinion leaders unique are what drive one's helping behavior. Influence is not, in fact, exclusive, but is something we all share. Influence is not a function of charisma or expertise so much as a function of human nature—people are alike in more ways than they differ. This is consistent with the longitudinal research that suggests that we are becoming a nation that increasingly relies upon and engages in WOM communication (Keller and Berry, 2003).

This theme of commonality shows up repeatedly in our research. Our study of network structure reveals that network sizes approximate a bell curve, with the vast majority of people being moderately connected. Today's media and marketing models underestimate the great potential in most consumers and, instead, focus mainly on the highly connected few. We find that nearly everyone, regardless of their level of connection, is interested in about the same number of topics, that influence is motivated by our basic human need to be helpful by giving advice, and that people share a common enjoyment in seeking out valuable information.

We also find that influencers tend to pass along information that they consider both unique and trusted. This is consistent with the finding that consumers can differentiate between expert and consumer online recommendations, but they perceive consumer recommendations as more trustworthy than those of experts (Huang and Chen, 2006). A site that can be relied on for providing unique and trustworthy information has enormous potential to drive influence. This insight offers clues into how influence can be activated and where consumers can be

TABLE 8

ANOVA of Mean WOM Message Effectiveness by Network Size

Less Connected (10 or Fewer Connections)	Moderately Connected (11 to 99 Connections)	Highly Connected (100 or More Connections)	*F* Value	*p* Value
5.31^a	5.65^b	5.75^b	19.99	0.00

Note: Means with different superscripts indicate significant differences as indicated by Tukey post hoc tests.

A site that can be relied on for providing unique and trustworthy information has enormous potential to drive influence.

found. The goal of marketers and advertisers wishing to achieve viral marketing effects should target the places influential people go and cater to the information and community needs they have.

LIMITATIONS AND FUTURE RESEARCH

This research explores the relationship between social network size and composition, and WOM marketing across new *and* traditional media. We speculate on the possible changes in WOM marketing that have been spurred by the internet. Future research should explore the unique characteristics of the internet, like its scale-free connectivity, to try to determine the impact that it makes on consumers' abilities and tendencies to disseminate marketing messages.

In our third study, we focused on health care marketing messages because of the wealth of research that has been conducted on the effectiveness of particular types of health care messages. Research in viral marketing message effectiveness in other industries is obviously important. As such research is conducted, patterns of viral marketing message effectiveness across industries might come to light. JAR

Ted Smith is a research fellow at CNET Networks and is president of MedTrackAlert. Dr. Smith has over a decade of experience in high technology and interactive media with a focus on behavioral data and large-scale website product design and development.

James Coyle is an assistant professor of marketing and interactive media studies at Miami University. His research interests include how consumers process online content in digital media environments, viral marketing, and music piracy.

Elizabeth Lightfoot is director of community research for CNET Networks, Inc. She specializes in marketing research and business intelligence in the IT and interactive media sectors through the use of web-based tools and analytics.

Amy Scott is director of healthcare product development at MedTrackAlert. She has over a decade of experience in information technology and healthcare.

REFERENCES

Barabasi, Albert-Laszlo. *Linked: The New Science of Networks*. Cambridge, MA: Perseus Publishing, 2002.

——, and Eric Bonabeau. "Scale-Free Networks." *Scientific American*, May 2003.

Bowman, D., and D. Narayandas. "Managing Customer-Initiated Contacts and Manufacturers: The Impact on Share of Category Requirements and Word-of-Mouth Behavior." *Journal of Marketing Research* 38, 3 (2001): 281–97.

Brown, Jacqueline Johnson, and Peter H. Reingen. "Social Ties and Word-of-Mouth Referral Behavior." *Journal of Consumer Research* 14, 3 (1987): 350–62.

Burson-Marsteller. "Influential Internet Users Rely on Company Web Sites as They Spread Word of Brands, Products and Services," 2001: [URL: http://www.efluentials.com/documents/PressRelease.pdf], retrieved June 6, 2007.

Clark, Ronald A., and Ronald E. Goldsmith. "Market Mavens: Psychological Influences." *Psychology and Marketing* 22, 4 (2005): 289–312.

Czepiel, John A. "Word-of-Mouth Processes in the Diffusion of a Major Technological Innovation." *Journal of Marketing Research* 11, 2 (1974): 172–80.

Feick, Lawrence F., and Linda L. Price. "The Market Maven: A Diffuser of Marketplace Information." *Journal of Marketing* 51, 1 (1987): 83–97.

Fishbein, Martin. "The Role of Theory in HIV Prevention." *AIDS Care* 12, 3 (2000): 273–78.

——, and Joseph N. Cappella. "The Role of Theory in Developing Effective Health Communications." *Journal of Communication* 56, Suppl. 1 (2006): S1–S17.

——, H. C. Triandis, F. H. Kanfer, M. H. Becker, S. E. Middlestadt, and A. Eichler. "Factors Influencing Behavior and Behavior Change." In *Handbook of Health Psychology*, A. Baum, T. R. Revenson, and J. E. Singer, eds. Mahway, NJ: Erlbaum, 2001.

Gladwell, Macolm. *The Tipping Point*. New York: Little, Brown and Company, 2002.

Godes, David, and Dina Mayzlin. "Using Online Conversations to Study Word-of-Mouth Communication." *Marketing Science* 23, 4 (2004): 545–60.

Granovetter, Mark. "The Strength of Weak Ties." *American Journal of Sociology* 78, 6 (1973): 1360–80.

Hennig-Thurau, Thorseten, Kevin P. Gwinner, Gianfranco Walsh, and Dwayne D. Gremler. "Electronic Word-of-Mouth Via Consumer-Opinion Platforms: What Motivates Consumers to Articulate Themselves on the

Internet." *Journal of Interactive Marketing* 18, 1 (2004): 38–52.

HUANG, JEN-HUNG, and YI-FEN CHEN. "Herding in Online Product Choice." *Psychology & Marketing* 23, 5 (2006): 413–28.

KATZ, ELIHU, and PAUL F. LAZARSFELD. *Personal Influence: The Part Played by People in the Flow of Mass Communication*. Glencoe, IL: The Free Press, 1955.

KELLER, ED, and JON BERRY. *The Influentials*. New York: The Free Press, 2003.

KREUTER, M. W., V. J. STRECHER, and B. GLASSMAN. "One Size Does Not Fit All: The Case for Tailoring Printed Materials." *Annals of Behavioral Medicine* 21 (1999): 276–83.

LIU, YONG. "Word of Mouth for Movies: Its Dynamics and Impact on Box Office Revenue." *Journal of Marketing* 70, 3 (2006): 74–89.

PRICE, LINDA L., LAWRENCE F. FEICK, and AUDREY GUSKEY. "Everyday Market Helping Behavior." *Journal of Public Policy & Marketing* 14, 2 (1995): 255–66.

——, ——, and AUDREY GUSKEY-FEDEROUCH. "Couponing Behaviors of the Market Maven: Profile of a Super Couponer." *Advances in Consumer Research* 15 (1988): 354–59.

SALOVEY, P., T. R. SCHNEIDER, and A. M. APANOVITCH. "Message Framing in the Prevention and Early Detection of Illness." In *The Persuasion Handbook: Theory and Practice*, J. P. Dillard and M. Pfau, eds. Thousand Oaks, CA: Sage, 2002.

——, and P. WILLIAMS-PIEHOTA. "Field Experiments in Social Psychology: Message Framing and the Promotion of Health Protective Behaviors." *American Behavioral Scientist* 47, 8 (2004): 488–505.

SUN, TAO, SEOUNMI YOUN, GUOHUA WU, and MANA KUNTARAPORN. "Online Word-of-Mouth (or Mouse): An Exploration of Its Antecedents and Consequences." *Journal of Computer-Mediated Communication* 11, 4 (2006): 1104–27.

UPDEGRAFF, JOHN A., DAVID K. SHERMAN, FAITH S. LYSTER, and TRACI L. MANN. "The Effects of Message Quality and Congruency on Perceptions of Tailored Health Communications." *Journal of Experimental Social Psychology* 43, 2 (2007): 249–57.

VISAWANATH, K., and KAREN M. EMMONS. "Message Effects and Social Determinants of Health: Its Application to Cancer Disparities." *Journal of Communication* 56, Suppl. 1 (2006): S238–60.

WELKER, CARL B. "The Paradigm of Viral Communication." *Information Services & Use* 22, 1 (2002): 3–8.