Users’ consumption of healthcare videos on hospital web sites

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Abstract

Purpose – While hospitals have done much over the last five years to push new media marketing, little research has been done to find out whether such endeavors are justified by users’ healthcare online information consumption. This study attempts to find evidence for or against such endeavors.

Design/methodology/approach – Using the Delphi technique, this study investigated both users’ healthcare video consumption behavior and their underlying rationales through three rounds of questions among 30 users of varied demographic backgrounds as a purposive sample.

Findings – Most participants did not watch videos hospital web sites because of their stereotypical understanding that hospital web sites provide no more than clerical information and because of videos’ perceived inefficiency in delivering relevant and personalized information. However, most participants expressed their willingness to watch videos if the presentation is improved.

Research limitations/implications – Although the Delphi technique is arguably the best approach when there is no defined population for sampling, a small sample may still be inadvertently biased toward the participants.

Practical implications – Hospitals need to make users aware of the abundant healthcare information in multimedia formats including video on their web sites, present the relevant content, and make such presentations easily digestible.

Social implications – Hospitals’ move into online new media marketing may help hospitals establish levels of trust with their online users comparable to the levels doctors currently enjoy and encourage consumers to visit hospital web sites as part of their healthcare decision-making process.

Originality/value – For the very first time, this study has answered from the users’ perspective and with evidential support the question whether hospitals’ march into new media marketing is justified.

Keywords Hospitals, Worldwide web, Marketing, Videos, Audiovisual media, User studies

Paper type Research paper

Introduction

Studies have shown that healthcare web sites are one of the most frequently searched categories of web sites (Boseley, 1999; Grossman, 1999; Pew Research Center, 2001; Anagnostelis, 2002). As early as 2003, Romano (2003) predicted that hospital web sites, as a huge, untapped market of potential customers searching for information they can trust, would become the next big battleground on the marketing front (Romano, 2003). Under-budgeting for interactive marketing, however, has been an issue for hospitals for years (Buckley, 2007). Many hospital web sites provide little more than basic general facility information such as phone numbers, directions, visiting hours, etc. – essentially shoveling their brochure content online (Campbell et al., 2002; Randeree and Rao, 2004) without taking advantage of interactivity and multimedia, two important features for online presentation.

An earlier version of this paper was presented at the Northeast Business and Economics Association (NBEA) Annual Conference in Morristown, NJ, on October 1, 2010.
Video, as a prominent Web 2.0 feature, is widely used online today to provide entertainment, training, marketing materials, and other information. Researchers and media professionals from different backgrounds have demonstrated that using videos to do healthcare marketing is an important trend (Hermann, 2002; Johnson, 2007; Akagi, 2008; Poller et al., 2009) and argue that such videos can provide a highly positive first impression and further influence how a user judges subsequent experience and enjoyment with that site – a phenomenon that is sometimes referred to as a “halo effect” (Lindgaard et al., 2006). Witteveen (2007), an executive of a marketing and interactive video technologies company, calls leveraging the power of video a smart move for today’s marketing and says that companies should integrate Webcasting into their overall marketing efforts.

By the end of 2008, 86 per cent of the hospitals in the USA had a web site, and 33 per cent of all USA hospital web sites were using at least one video for marketing while some sites were extending such efforts to other areas, such as patient education (Huang, 2009a). It is clear that a critical mass for using videos on hospital web sites has been reached (Huang, 2009a) according to Roger’s (1995) diffusion of innovation theory. “These 33 per cent of the hospitals are very likely to produce more videos and to put pressure on other hospitals to do the same” (Huang, 2009a).

The year 2009 was marked as a breakthrough year for new media adoption by the healthcare industry. According to Health Leaders Media, in 2007, the organization did not even have a new media category for its marketing awards; in 2008, the newly established new media category attracted the smallest number of entries; in 2009, however, new media marketing became one of the most crowded fields both in terms of quantity and quality (Shaw, 2009). As of November 2009, of the 473 USA hospitals that had incorporated social networking tools, 218 had a YouTube channel (Bennett, 2009). In comparison, in March 2009, there were only 216 of such hospital web sites, and only 126 hospitals had a YouTube channel (Rottler, 2009). Also in 2009, the first Annual Healthcare New Media Marketing Conference was held in Phoenix, Arizona. Healthcare new media development, especially video usage, seriously took off in 2009.

Despite the healthcare industry’s enthusiasm, it is not clear how and if users have taken advantage of these new media – including videos for their healthcare. So far, no study has been conducted that demonstrates hospitals’ potentially expensive march into new media marketing is justified. “For most hospitals, the big question, now and well into the future, is whether web sites can or will deliver an acceptable return on investment,” said Romano (2003). In Huang’s, 2010 case study, which included six cases, five out of the six hospitals that were exemplary in implementing videos for marketing did not have a monitoring system to gauge their return on investment (ROI). To address this gap, this study investigated the following research questions.

1. Are users viewing videos on hospital web sites at all?
2. If they are, are these videos influencing their opinions about their own health and further influencing their medical decisions?
3. What are users’ preferences for consuming healthcare videos?
4. Does users’ hospital web site consumption behavior justify the hospitals’ move into their new media marketing?
There has been much wishful thinking at the corporate level about the efficacy of the new media, but little empirical evidence exists regarding healthcare online information seekers (Zeidner, 2007). Answers to such questions may subvert or justify USA hospitals’ current online marketing strategies and their short-term and long-term development plan to promote their missions.

**Literature review**

An extensive literature search over a period of six months in the second half of 2009 returned very few usable empirical studies on the use of new media in the healthcare industry that could inform this study. The research designs in two related studies are discussed here.

In her 2007 study, Lustria from Florida State University asked a simple question: can interactivity influence users’ comprehension of and attitudes toward online health content. In the experiment, Lustria designed two-skin cancer web sites with different levels of interactivity and then exposed the sites to participants. Like most healthcare studies that use the survey method, Lustria’s study used a convenience sample – 441 undergraduate students at a large southeastern university. The findings suggest that interactivity can significantly affect comprehension as well attitudes toward health web sites. However, Lustria noticed an apparent disconnection between the features information designers found to be compelling about interactive media such as flash animations and interactive activities and what health information seekers needed. “The challenges, therefore,” Lustria (2007, p. 773) concluded:

> [...] is how to strike a balance between providing an engaging and visually appealing web site, and providing a site that the least competent information seeker could easily navigate without too much guesswork.

In their 2009 article, Loiselle and Dubois (2009) in Canada reported on a quasi-experimental longitudinal study they conducted on the impact of a comprehensive cancer informational intervention system using information technology on healthcare service for individuals newly diagnosed with cancer. A convenience sample of 205 women with breast cancer and 45 men with prostate cancer were recruited from four university hospitals in Montreal, Quebec, Canada. While the intervention group was exposed to a CD-ROM on cancer and a list of reputable cancer-related web sites, the control group received usual care. Three self-reported questionnaires were completed at the beginning, one week after intervention and three months after intervention. The analysis included tools pertaining to perceived cancer informational support and patients’ reliance on healthcare services.

The intervention group reported significantly more satisfaction with cancer information received compared to the control group. Women as opposed to men spent more time with nurses, were more satisfied with cancer information received, and relied more heavily on health services. The authors called for further exploration of whether the latter observations reflected genuine sex differences or were more contingent on the specific cancer diagnosis.

**Methodology**

As found in the research articles cited above, “although non-random sampling techniques are less scientifically valid, they are the type most commonly used for health care research” (Panacek and Thompson, 2007) since there is rarely a defined
patient population. Participants are usually recruited in a clinic or a hospital to participate in a survey. As a result, no matter how many participants are included in a survey, the findings and conclusions cannot be extended to a larger population. Because of healthcare surveys’ typical lack of external validity and because of the high cost involved in conducting an inherently defective healthcare survey based on a large convenience sample from the statistical standpoint, and also because the purpose of this study was mainly to find out the reasons why users consumed multimedia in a certain pattern, this study used the Delphi technique to collect data.

The Delphi technique is a forecasting methodology for generating expert opinion on any given subject (Allen, 1978). It can be used to find out the hows and whys of users’ healthcare media consumption. Policymakers typically rely on experts’ judgments to make decisions. The problem is that experts often disagree on issues. Heated arguments resulting from strong personalities, egos, hidden agendas, power, seniority, or vociferation in a face-to-face meeting sometimes results in a compromised decision that probably none of the experts really supports. In 1963, Dalkey and Helmer (1963) of the Rand Corporation in California first designed the method to eliminate interpersonal interactions as the controlling variables. The use of questionnaires as the sole means of communication among the experts renders a low-risk or threat-free environment. Opinions and judgments from the experts through the questionnaires are systematically collected, tabulated, and then returned in the form of feedback to the same experts. Any dubious answers in the initial rounds of interviews get explained in the later rounds of interviews. Throughout the whole process, the authors of the opinions are never identified. As a result, the focus of such communication is on real problem solving instead of who said what. Through multiple rounds of opinion exchanges via questionnaires, certain agreement or consensus instead of compromise on an issue gradually emerges. The primary objective of Delphi “is not to produce ‘right’ answers as much as it is to produce a communication climate most conductive for rational and objective thought” Dalkey and Helmer (1963). Consequently, opinion dominance, social desirability, individualistic thinking, anecdotal experiences, guesswork, and fuzzy conclusions can all be minimized.

According to Olaf Helmer, the co-inventor of the Delphi technique, the methodology is suitable to any problem and subsequent policymaking requiring expert judgment as a necessary input. Delphi has been used in business, science, and government “to generate policy options, measure the impact of such options, and identify market conditions for industry” (Allen, 1978). For some reason, the Delphi technique has been rarely used in media studies. Massey (1996) used it in a study, “Cyberjournalism: A look at the future of newspapers and print education.” In that study, Massey recruited 21 media professionals as experts in three rounds of surveys about the future of newspapers. European Perspectives on the Information Society (EPIS)’s 2007 Delphi Report conducted by the European Commission’s Joint Research Centre (2007) used this technique. In his 2009 study on youths’ news consumption behaviors, Huang (2009b) also used Delphi among 28 participants to collect data in three rounds of interview.

In the Delphi technique, experts do not have to be professors, high-ranking officials, scientists, and so on; “the term ‘expert’ simply means someone who is familiar with the stated problem. This could mean students, teachers, educational administrators, and so on, if the subject were secondary education” (Allen, 1978). For this study, the recruited experts were those healthcare information seekers over 18 years old who had sought information on healthcare web sites for healthcare assistance in the past two months.
The Delphi technique usually involves a panel of ten to 30 experts, as Allen suggested. The main point is that they “have information to share, are motivated to work on the problem, and the time to complete the tasks involved with the procedure” (Allen, 1978, p. 123). Since the Delphi technique does not require systematic random sampling and since not all adults qualified for this study, based on the above expert definition, a purposive sample was derived with the understanding that it was not going to represent a general population. The authors issued a call for participants through multiple online healthcare forums and several local online networks. Among all the volunteers, 20 qualified participants were kept in the study for three rounds of online interviews. A list of both close-ended and open-ended questions was sent along with the consent form in the first round of interviews.

After the analysis of the respondents’ answers to the first round of questions, the respondents were asked in the second round of interview mainly to explain their choices. The questions for the second round were dominantly open-ended. In the last round of interviews, the respondents were asked to rank their explanations and solutions that they individually provided so as to reach a potential agreement about what were the top reasons and top solutions. The questions were all close-ended. In short, the questions in the three rounds of interviews were logically progressive.

The three rounds of data collection lasted for about one-and-a-half months in early 2010 using Google Docs as the data-collecting tool. To standardize the participants’ reporting, the participants were asked to report their healthcare information consumption behavior only in the two months preceding the first round of interview.

Although all statistical measurements can be applied for deciding the general direction of opinions on an issue in a small purposive sample in a Delphi procedure[1], statistics from such a small sample can only provide an overall picture rather than a precise estimate of a pattern in a larger population. Therefore, this study applied descriptive statistics only when numbers were involved. The data, including the numerical data and textual data, were all tabulated in a Microsoft Excel sheet. Relative frequencies were calculated for the close-ended questions. Such relative frequencies were derived not only for this report writing, but also for generating and justifying the interview questions for the later rounds of interviews. Textual analyses were done to the answers to the open-ended questions to identify different themes and dominant opinion. The purpose of this qualitatively driven study is not to extend its external validity, but, by digging deep into the whys and hows regarding these users’ healthcare media consumption, to encourage the readers of this study to contemplate how hospital web sites can best serve their users with multimedia based on users’ behavior and expectations.

Findings
The pattern reported below is based on the data obtained from the 20 interview participants over three rounds. The value of the report, however, lies not in the reported consumption behavior pattern, but in the participants’ consensus or lack of consensus in their explanations of their consumption behavior. The data from the three rounds of interviews have been woven together to present a holistic picture of these participants’ healthcare information consumption behavior.

Participant demographics
The participants who were picked from across the country included half women and half men typically (40 per cent) between 26 and 35 years old who were mostly
White (55 per cent). Typically, these participants had a bachelor’s degree (35 per cent), and some had a master’s degree (30 per cent). The majority had a fast internet connection at home (80 per cent). The basic demographic profile of the participants highly corresponds to the most recent demographic data collected by Pew Research Center (2010) regarding internet users in terms of their gender, age and educational level (Table I).

Visiting hospital web sites or non-hospital healthcare web sites

To understand participants’ new media consumption behavior, it is important to know their overall online healthcare information consumption behavior along with their healthcare needs. Half of the participants visited a medical institution, such as a clinic, doctor’s office, a hospital, or a pharmacy to seek healthcare assistance once or twice over the last two months (three times or more: 25 per cent; zero time: 25 per cent), but most of them had not visited a hospital web site (70 per cent). If they had, they had visited only once or twice (30 per cent). Some participants had visited non-hospital healthcare web sites such as WebMD.com or patientslikeme.com once or twice (35 per cent) to seek healthcare assistance; another 35 per cent visited three times or more. If they did search for online healthcare information, they did so either at home or at work or both (85 per cent).

Obviously, these participants relied much more on non-hospital healthcare web sites than on hospital web sites for healthcare assistance. Was it because they trusted the former more than the latter? No. Most of them trusted both kinds of web sites, and they trusted hospital web sites (80 per cent) even more than the non-hospital healthcare web sites (60 per cent). The reasons for this preference revealed in the second round of interviews were put to vote in the third. Here, are what they agreed or strongly agreed upon:

- A hospital web site is more of a marketing tool than a patient education tool (80 per cent).

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Table I. Participant demographics | None | 20
• If I visit a hospital web site, most likely I am searching for information that pertains to this particular hospital (78 per cent).
• If I visit a hospital web site, usually I do not expect to find patient education materials that do not pertain to that particular hospital though I appreciate the presence of such materials (70 per cent).
• It is easier to find healthcare information on a non-hospital healthcare web site such as WebMD or patientslikeme.com than on a hospital web site (70 per cent).

Therefore, most of them (70 per cent) did not choose hospital web sites as their first choice for searching for healthcare information online. Two participants elaborated on their preference. One wrote:

Interestingly, a hospital seems like a building to me, and not a Web-based repository of health information. Not that that is true. It is just an impression. I would typically think of going to a hospital site for information such as location, directions, which door to enter for services, etc.

The other participant wrote:

Web sites are only a starting point for information. If you need a hospital, you are going to GO there, not take the time to research it on the internet. Most insurance coverage dictates the hospital anyway (your in-network doctor generally practices at a certain hospital and you will go to the hospital that your primary physician goes to). No need to go to the hospital web site.

Online healthcare information search and decision-making
Over half of the participants (55 per cent) reported that their browsing of online healthcare information was not tied to a visit to a doctor and that they did not make any decision either regarding their healthcare needs after such browsing. Why? Most of them agreed or strongly agreed that browsing healthcare information online is more a window-shopping experience for assimilating information than a decision-making process (70 per cent) and that they trusted doctors much more than such web sites for healthcare-related decision making (80 per cent).

Healthcare online video consumption
In terms of these participants’ usage of healthcare video on any web sites, 65 per cent said that they did not watch any. If some did watch, they watched on social media web sites, such as Facebook, Twitter, Myspace, etc. (10 per cent) or on YouTube and other dedicated video web sites (10 per cent).

Half of the participants cited “more time-consuming to find them and watch them than reading text” and “no need” as the two major reasons for not watching videos. The participants almost unanimously agreed (90 per cent) that videos on a hospital web site, if any, should be easy for users to find. In the second round of interviews, the participants were asked what a healthcare web site can do to make them willingly and happily watch healthcare videos. Their proposed solutions were put to vote in the third round. The two solutions most participants agreed upon were:

(1) connecting videos to their respective patient stories, news stories or textual explanations (65 per cent); and
(2) clustering videos in a video gallery (60 per cent).
If a hospital would like to present information in online videos to the participants and if the participants can easily access such videos, the participants were asked to identify what kind of videos they would like to watch most. The top three kinds of videos voted for were:

1. videos informing or teaching patients about different kinds of symptoms, diseases and medical procedures (80 per cent) (Even though 70 per cent of the participants expressed that they did not expect any of such patient education videos on a hospital web site, 60 per cent of them expressed that they would be delighted to watch such videos if they are relevant and available on a hospital web site.);

2. videos with specific information regarding the hospital services (71 per cent); and

3. videos promoting a cause or a health habit (57 per cent).

Discussions and conclusions

The Delphi technique provided a clear picture of the participants’ healthcare online media consumption behavior. Such data, though based on a small purposive sample, can be more valid than data from a large convenience sample, which healthcare surveys have tended to use historically, because the latter commands no external validity and the numbers do not speak for themselves. On the other hand, small samples can inadvertently be biased toward the participants. Therefore, the findings and conclusions from this study should be read with discretion.

Hospitals have a long way to go to maximize the potential of new media marketing online. Call it prejudice or ignorance, the participants simply did not treat hospital web sites seriously. They regard hospital web sites as nothing more than self-promoting PR tools. They believe that such sites carry no information beyond items like hours of operation, location, doctor’s information, etc. As a result, they primarily rely on non-hospital healthcare web sites for online healthcare assistance. Users need to be made aware of the fact that today’s hospital web sites contain much more than basic hospital operating information and that patient education materials including videos and social media presence are usually featured. Such an awareness call needs to be made loudly and clearly on a hospital web sites home page. In short, hospitals need to better educate users about the abundance of healthcare information on their web sites.

The results also show that one of the main reasons for not watching healthcare videos is the perceived inefficiency of the video in delivering relevant and personalized information. Participants mentioned that generally written material is more efficient in delivering a large quantity of detailed information, and that it is difficult to get to a specific area of a long video. A noteworthy implication for the design of more efficient and usable healthcare videos is that long videos should be meaningfully fragmented into self-contained segments that are accessible through some form of topic index. This strategy would have two important benefits. First, the video content would be more transparent. Users would be able to easily identify relevant pieces of information covered by the video even before starting to watch it. Second, once users have identified a segment with relevant information, they could quickly access it without traversing the whole video.

Considering the fact that only 33 per cent of the hospital web sites in the USA carried one or more videos as of 2009 (Huang, 2009a, p. 353), some may view this as an example
of the chicken or the egg paradox. Since hospital web sites usually do not carry any videos, that is why most of these participants mentioned that they did not watch or did not like to watch videos on hospital web sites. Such an argument might be true, but internet users have fervently embraced videos on all kinds of web sites for several years (ComScore, 2007; Kelsey Group, 2008). Consequently, it is difficult to understand why these participants have singled out healthcare videos to ignore or even dislike. Again, it seems to be more a logical matter of increasing users’ awareness of the presence of the new media services on hospital web sites and improving the presentation of such services so that more users will take advantage of new media features.

As to how to make such improvements, the participants agreed that they like three kinds of hospital videos most: patient education videos, hospital-specific informational videos, and healthcare public service announcement videos. In terms of presentation, they like to have the videos connected to their respective stories or textual explanations and have the videos clustered in a video gallery for easy access.

Recently, hospital healthcare online videos may have a small market, but the moderate to strong interest in such videos expressed by the participants in this study suggests that the hospitals’ new media marketing endeavors are worthwhile though ROI could be patience testing. As several earlier studies have pointed out, video is a visual medium combining “entertaining, emotional and branding attributes” (Kelsey Group, 2008). Its “halo effect” can engage not only viewers’ minds but also their hearts, thus video constitutes an effective internet tool for marketing and patient education—the two major aspects of e-health (Solovy, 2003; Dickenson and Fuller, 2005). Hospitals’ move into online new media marketing may help hospitals establish levels of trust with their online users comparable to the levels doctors currently enjoy as well as encourage consumers to visit hospital web sites as part of their healthcare decision-making process.

Note
1. According to Allen (1978): “A brief note may be necessary on statistical techniques for analyzing the Delphi responses. If the responses constitute nominal data the appropriate statistical measurements are mode and frequency. If the data involve rankings or ordinal data then the appropriate statistics are median and percentile. If the data appear or are assumed to be interval then the statistical measurements are mean and standard deviation.”

References


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Edgar Huang is an Associate Professor at Indiana University, School of Informatics at IUPUI, Indianapolis. His articles on healthcare new media, youth news consumption, media convergence, streaming media, copyright issues concerning DVD ripping, online imaging, documentary photography history, digital imaging manipulation, and the internet and national development have been published in top journals, such as Convergence and Journalism and Communication Monographs. Huang has won National awards for his multimedia productions. Edgar Huang is the corresponding author and can be contacted at: ehuang@iupui.edu

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Josette F. Jones’s doctoral degree is in nursing informatics. Her current research program has evolved from the dissertation research and focuses on analyzing, formalizing and representing how healthcare providers, and healthcare consumers collect and manage data, process data into information and knowledge, and make knowledge-based decisions and inferences for health care. This empirical and experiential knowledge is used in order to broaden the scope and enhance the quality of professional practice as well as interactive patient self-management support. Her research also capitalizes on internet technology and its widespread acceptance as an information resource for providers and consumers alike.

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