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THE IMPACT OF E-GOVERNMENT USE OF SOCIAL NETWORKING MEDIA ON GOVERNMENT TRANSPARENCY AND PUBLIC PARTICIPATION

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Abstract: This study assessed the U.S. state e-government use of social networking media for government transparency and public participation. Data were collected from the e-government sites of the 50 U.S. states and Washington, D.C. The findings indicate that (a) Email, Twitter, and Facebook were available on most of the state e-government sites whereas Suggestion box, Chat, Flickr, YouTube, Mobile Web service, Blog, LinkedIn, and Vimeo were only on the minority of the sites; (b) Twitter, Facebook, Flickr, and YouTube carried current and active communications for sharing government decisions, current issues, new initiatives, announcements, as well as enabling users to leave comments; (c) government officials' communications on YouTube, Twitter, Flickr, Chat, Facebook, and Vimeo were clear to online readers, but their email response rate and speed via *Contact Us* were disappointing; and (d) overall, the participants reported positive experience with the majority of the state e-government social networking media.

The world has witnessed how the Internet-connected social networking media, such as Facebook, Twitter, and YouTube, have empowered people from all backgrounds to engage in economic, social, and political movements across a state, a nation, and even around the globe. These social networking media enable citizens at grassroots to form online interest groups or communities, to communicate and share information without time and geographic boundaries, and to participate in their interest movements instantaneously. Recognizing the power of social networking media, many companies, political organizations, and governments have began to use the social networking media to their advantages. For example, Kia Motors, Best Buy, Viacom, Cisco Systems, and Intuit corporations use Facebook, Twitter, and YouTube to engage customers in their product development, branding, pricing, and continuous improvement by analyzing customers' continuous, real-time input they shared on the companies' social networking media (King, 2011).

Similarly, the U.S. Tea Party uses YouTube, Facebook, and Twitter on its Web site (www.theteaparty.net) to mobilize a grassroots movement of millions of like-minded Americans from all backgrounds and political parties for "limited federal government, individual freedoms, personal responsibility, free markets, and returning political power to the states and the people" (Tea Party, 2011).

In the nations where mass media are censored, young people have bypassed the censored media with social networking media. In Tunisia and Egypt, for instance, desperate citizens mobilized the nation-wide democracy movements in just a few days through the use of Facebook, Twitter, YouTube, and Flickr on their computers and smartphones. By using such tools, Tunisians and Egyptians sent out vital information about where demonstrations were taking place and the second-by-second footages from those in the middle of the protests (e.g., Arnstine, 2011; Tavoularis, 2011). Very quickly, Tunisians (in 27 days) and Egyptians (in 18 days) overthrew their corrupted totalitarian governments, respectively.

While the totalitarian governments view the social networking media as big threats to their regimes and try to censor them, the democratic governments consider them as opportunities for better engaging their people in government affairs. Governments in the Western world use the social networking media to consult with ordinary citizens and to give them a voice in the democratic process (Evans, 2010). For example, on January 21, 2009, the U.S. President Barack Obama issued a memorandum calling for the establishment of a system to promote the government commitments to transparency, public participation, and collaboration. To engage the public, the U.S. federal agencies are increasingly using Internet-based technologies, such as blogs, wikis, and social networks, as a means for presenting solicitations for public comment and for conducting virtual public meetings (Sunstein, 2010).

Inspired by President Barack Obama's success in the 2008 U.S. Presidency election and his millions of fans on Facebook, Mr. Cameron, Prime Minister of United Kingdom, set up his Facebook and Twitter pages to reach supporters in his 2010 U.K. Election campaign. After being the elected leader, Mr. Cameron also pioneered to post video clips and photos on YouTube and Flicker pages to communicate with his people interactively (Swaine, 2010; the Prime Minister's Office, 2011).

Obviously, the social networking media are valuable tools for governments to promote transparency, public participation, and collaboration. However, no national study has been documented in the literature to determine the state governments' use of social networking media. This research gap suggests a need for an empirical study. This paper describes a study that assessed how the 50 U.S. state governments and Washington, D.C. use the social networking media on their e-government sites for government transparency and public participation.

■ PROBLEM AND PURPOSE OF THE STUDY

The problem addressed in this study was to assess how e-government sites use social networking media for interactive online communication between government and people as a means to government transparency and public participation. In order to solve the problem, we raised the following four research questions:

- What social networking media are available on the state e-government sites?
- How current and active are the social networking activities on the state e-government sites?
- How quickly and clearly do state government officials communicate with people online?
- What is participants' experience of the state e-government use of social networking media?

The purpose of the study is to provide the government officials with the findings that they need for continuously improving their use of social networking media for government transparency and public participation. In addition, the findings would enable educators to update their curricular by adding effective ways of using social networking media so that students will be able to choose the right social networking media to meet their online communication needs.

■ RESEARCH METHODS

The population of this study was the official e-government sites of the 50 U.S. states and Washington, D.C. These 51 sites were all used in the study according to the requirement for sample size (Cochran, 1977). Web content analysis is commonly used in assessing organizations' strategies, deliveries, and interactions to customers, employees, investor, and other stakeholders on their Web sites (e.g., Boggs & Walters, 2006; Campbell & Beck, 2004; Wilkinson & Cappel, 2005; Zhao & Zhao, 2004; Zhao, Truell, & Alexander, 2006). To systematically and objectively record how e-government sites use social networking media to facilitate online interactive communication between government and people, we developed an instrument based on the review of related literature and social networking sites.

Social networking media are the tools for social interaction, communication, and collaboration. These tools are developed with highly accessible, scalable Internet-based applications and mobile technologies, such as blog, online chat, Facebook, Flickr, LinkedIn, MySpace, Twitter, YouTube, and Vimeo, which can be used on any Internet-connected computers and smartphones.

A blog ( ) is a type of Web site or part of a Web site maintained by an individual person with regular entries of personal diaries, comments, news, or other materials such as graphics or videos on a particular subject for readers who share the same interest on the subject. Most blogs are interactive, allowing visitors to leave comments on the blogs (en.wikipedia.org/wiki/Blogging and www.blogger.com/tour_start.g).

Online chat ( ) refers to any kind of real-time one-to-one or one-to-group communication over the Internet (en.wikipedia.org/wiki?Chat_(online)). The online chat tools include Instant Messenger (www.download-messenger.me), Internet Relay Chat (www.irchelp.org), and Talkers (www.talkers.com). These tools allow millions of people around the world to communicate in real time with textual and graphical messages.

Facebook ( ) is a social networking Web site, which enables users to create personal accounts or profiles, add other users as friends, and exchange messages with automatic notifications when they update their profiles. In addition, users may join interest groups organized by workplace, school, professional association, or labor union. Facebook site is available in 10 languages: English, Spanish, Portuguese, France, German, Italian, Arabic, Hindi, Chinese, and Japanese. As of January 2011, Facebook has more than 600 million active users around the world (en.wikipedia.org/wiki/Facebook and www.facebook.com).

Flickr ( ) is a photo and video management and sharing Web site and online community. Users can upload photos and videos on Flickr site from their mobile devices, cell phones, computers, in RSS feeds, by email, and then hyperlink them to their own Web pages. Users can manage their photos and videos themselves or give their friends, family, and other contacts permission to organize their albums as well as to add comments, notes, tags or labels. Flicker site is available in 10 languages: English, Chinese, German, Spanish, Portuguese, France, Korean, Italian, Vietnamese, and Indonesia. As Flickr site shows, it has an average of five to six thousand uploads per minute (www.flickr.com/about and en.wikipedia.org/wiki/Flickr).

LinkedIn ( ) is a professional networking Web site, which allows registered users to maintain a list of contact people they know and trust in business. A user's contact network is built of his or her direct connections, second- and third-tier connections. This network enables a person to gain an introduction to someone this person wishes to know through a mutual, trusted contact. The network can be used to find jobs, people, and business opportunities recommended by someone in one's contact network. Employers can post job openings on the site and search for potential candidates. As of March 2011 LinkedIn reported more than 100 million registered users in more than 200 countries and territories worldwide. The site is available in

English, French, German, Italian, Portuguese and Spanish (press.linkedin.com/about and en.wikipedia.org/wiki/LinkedIn).

MySpace (), similar to Facebook, is a social networking Web site that enables users to create personal profiles, add other users as friends, exchange information, and join interest groups. As of April 2011, MySpace offers service in 31 countries and regions around the world (www.myspace.com).

Twitter () is a Web site that offers a social networking and micro-blogging service. It enables users to send and read messages, called tweets, in both real time and virtual time, thereby connecting people to the latest information about what they are interested in. Tweets are text messages, with each being not longer than 140 characters. Tweets can also be posted with photos and videos. Therefore, users often post tweets as short messages or headlines, and readers can receive them instantaneously via their computers and smartphones. Twitter site is available in seven languages: English, Italian, Spanish, Korean, France, German, and Japanese. As of September 2010, Twitter has 175 million registered users around the world (twitter.com/about and en.wikipedia.org/wiki/Twitter).

YouTube () is a video-sharing Web site that allows billions of people to upload, discover, view, and share originally-created videos. YouTube provides a public forum for people to connect, inform, and inspire others across the globe and acts as a distribution platform for original content creators and advertisers. As of May 2010, YouTube exceeds two billion views per day (en.wilipedia.org/wiki/YouTube and www.youtube.com/t/about_youtube).

Vimeo () is also a video-sharing Web site, which was originally created by filmmakers and video creators who want to share their creative works with personal comments of their everyday life. Gradually, the site has been attracting like-minded people to upload, share, and view their videos and to build a community with a wide range of video interests. As of March 2010, Vimeo has over three million members and an average of more than 16,000 new videos uploaded daily (www.vimeo.com/about and en.wikipedia.org/wiki/Vimeo).

To determine the availability of social networking media on e-government sites, we included all the above-reviewed media in the instrument and also added email, Web-based suggestion box, and mobile Web service, which enables users to access the e-government sites from mobile digital devices such as smartphone, iPodTouch, or iPad. Therefore, the instrument consisted of four types of measurements: (a) social networking media available on the e-government sites, (b) activities on e-government social networking media, (c) quickness and clarity of officials' online communication, and (d) participants' experience of e-government social networking media.

One hundred and two business students at a Midwestern state university participated in this study in February 2011 as an experiential-assessment exercise when learning business communication and new media technology. The students were trained to use the instrument and also understood that their participation in the study would be anonymous and not have an impact on their course grade, which was required by the university Institutional Review Board protocol. The 102 participating students were randomly formed in pairs, with each pair of two students assigned to one of the 51 sites for the exercise in a computer lab connected with the Internet. Each pair of students seated next to each other and collected data from the assigned site independently. When completing the data collection, they compared their collected data and reached agreement if there was any difference between them. When students encountered any difficulty and could not come to a team solution or agreement, they met with the lead researcher for problem solving and assurance of data quality. The collected data were coded and entered into Excel spreadsheet table for statistical analysis. Frequency counts, percentage distributions, and weighted means were prepared.
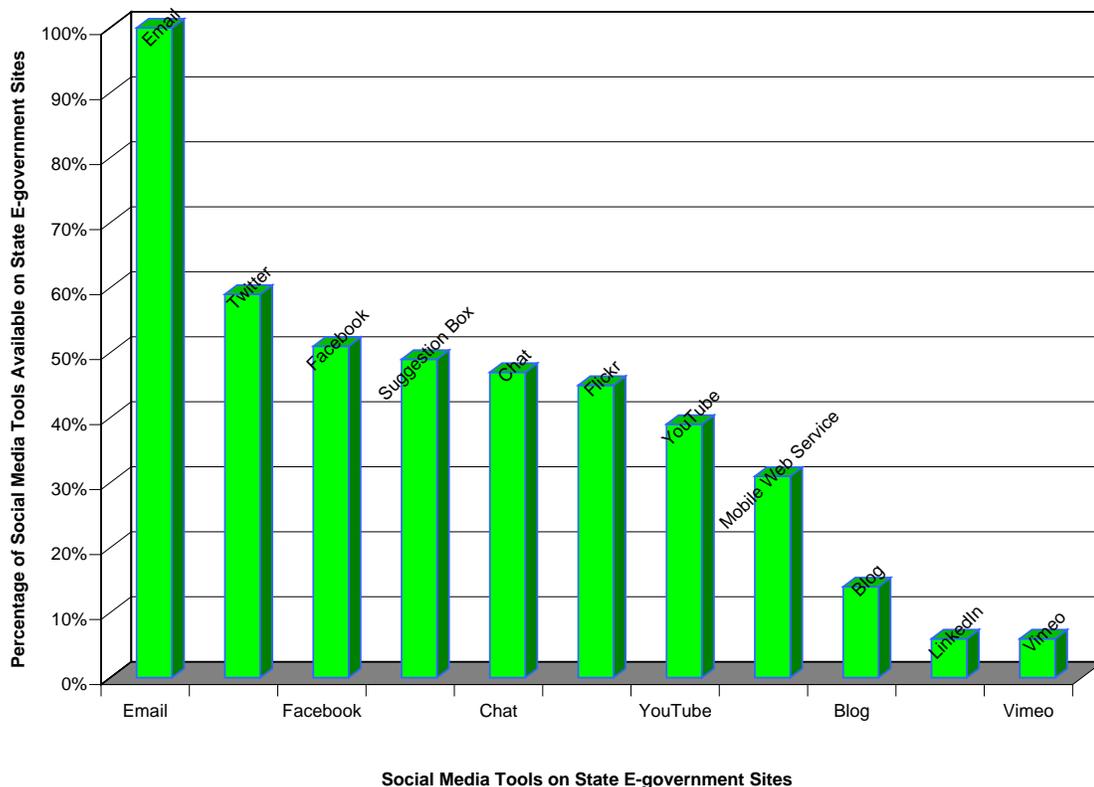
■ **RESULTS**

The results of the study are reported in the following order: (a) social networking media available on e-government sites, (b) activities on e-government social networking media, (c) quickness and clarity of officials' online communication, and (d) participants' experience of e-government social networking media.

Social Networking Media on E-government Sites

Research Question 1 asked, "What social networking media are available on the state e-government sites?" As Figure 1 shows, a total of 11 social networking media were identified on the U.S. state e-government sites. The majority of the sites provided Email (100%), Twitter (59%), and Facebook (51%) for online users to communicate with government officials. Around one third to nearly half of the sites had the following five social media available: Suggestion box (49%), Chat (47%), Flickr (45%), YouTube (39%), and mobile Web service (31%). By contrast, only a tiny minority of the state e-government sites offered Blog (14%), LinkedIn (6%), and Vimeo (6%).

FIGURE 1. SOCIAL MEDIA TOOLS AVAILABLE ON U.S. STATE E-GOVERNMENT SITES (N = 51)

Social Media Tools on State E-government Sites

Regarding how convenient these social networking media were for users to find and use, a five-point Likert scale was employed for measurement, with 5 = very convenient, 4 = convenient, 3 = less convenient, 2 = not convenient, and 1 = not available. As Table 1 shows, the participants responded that the following

nine social networking media were very convenient to use: YouTube (5.0), LinkedIn (5.0), Vimeo (5.0), Twitter (4.9), Facebook (4.9), Suggestion box (4.9), Flickr (4.9), Blog (4.9), and Mobile Web Service (4.5). By contrast, finding social networking media on the e-government sites (3.9) was rated as convenient, and the same for using Chat (3.7) and Email (3.5). However, although YouTube, LinkedIn, Vimeo, Flickr, Blog, and Mobile Web Service were very convenient to online participants to use, they were available only on a minority of the state e-government sites (see Figure 1).

TABLE 1. CONVENIENCE OF E-GOVERNMENT SOCIAL NETWORKING MEDIA FOR USERS

TYPES OF SOCIAL NETWORKING MEDIA	# OF SITES OFFER SUCH MEDIA	WEIGHTED MEAN A
YouTube for viewing and commenting	20	5.0
LinkedIn for professional networking	3	5.0
Vimeo for viewing and commenting	3	5.0
Twitter for viewing and commenting	30	4.9
Facebook for viewing and commenting	26	4.9
Suggestion Box	25	4.9
Flickr for viewing and commenting	23	4.9
Blog for viewing and commenting	7	4.9
Mobile Web Service	16	4.5
Finding social networking media	51	3.9
Chat for questions and comments	26	3.7
Email for questions and comments	51	3.5

[a]: The weighted mean used a 5-point scale, where 5 = very convenient, 4 = convenient, 3 = less convenient, 2= not convenient, and 1 = not available.

Activities on E-Government Social Networking Media

Research Question 2 asked, "How current and active are the social networking activities on the state e-government sites?" Table 2 illustrates the social networking activities on the state e-government sites. Among the 30 e-government sites that offered Twitter, 25 (83%) were rated current and active in information sharing and commenting while five (17%) were rated less current and active. The communication activities on Twitter pages were often related to the state governments' important decisions (e.g., "State Signs Memorandum of Understanding with Chinese Development Commission" and "Signing the bill for the "Blue Alert" that helps catch serious criminals"), current issues (e.g., "Gulf spill taking toll on small businesses" and "August 2010 Indiana Employment Report"), and new initiatives (e.g., "SBA Disaster Recovery Assistance for business owners" and "To Reduce repeat offenses, Governor Markell releases Re-entry Plan").

Facebook was available on 26 state e-government sites. Of these 26 sites, 15 (58%) were current and active, 10 (38%) were less current and active, and only one was not current and active in the Facebook communication activities. The most frequent Facebook communication activities included (a) important decisions (e.g., "Governor Parnell signs Land Exchange and Fisheries bill" and "DC Public Schools announces implementation of pay raises and pay-for-performance system for teachers"), (b) current issues (e.g., "Advocated to lift the moratorium on offshore drilling in Alaska waters" and "District Government is

already taking action to slash its emissions of greenhouse gases responsible for climate change and is on target to reduce emissions 20% by 2012 and 30% by 2020"), (c) new initiatives (e.g., "Requests for Federal Economic Injury Declaration related to Taylor Higway damage" and "California High-Speed Rail is the nation's largest high-speed rail project!"), and (d) notices or announcements (e.g., "Updated registration forms posted on government Website," "Outdoor fitness class registration available online," "Announcement of winning an award," and "Notice of upgrades to state Website").

Flickr, a photo posting and sharing tool, was available on 23 e-government sites, with the majority (70%) being current and active and only a tiny minority (9%) being not current and active in positing and sharing photos. The commonly posted photos were those of tourist sites throughout the states, governors' outreach meetings, state fairs, and conferences.

YouTube was available only on 20 state e-government sites. Of these 20 sites, 16 (80%) were current and active; in contrast, three (15%) were less current and active, and only one (5%) was not current and active. The most frequently posted video clips included (a) important decisions (e.g., "Canon City Bill Signing" and "DC Public Schools announces implementation of pay raises and pay-for-performance system for teachers"), (b) current issues (e.g., "Arizona Health Care Roundtable Meeting" and "Children's Savings Program"), (c) new initiatives (e.g., "New Energy Economy video" and "A broad overview of how DC utilizes technology"), and (d) other state events (e.g., "Governor Ritter and First Lady Jeannie Ritter's Holiday Message" and "A ceremony honoring WWII Veteran Ray Smith who received medals").

Blog pages were offered by only seven state e-government sites. Among the seven sites, three (43%) were current and active, two (29%), less current and active, and the other two (29%) were not current and active. The popular entries on the three current and active Blog pages included topics such as "Governor's reflection on Labor Day and trying to create more jobs for the state residents," "Delaware Division of Libraries purchased e-books that can be downloaded for small business owners and entrepreneurs," "Providing the ability to those with disabilities to get a job," and "Highlights of accomplishments of the government administration."

Vimeo, a video sharing tool, was available only on three state e-government sites. Two of them were current and active in uploading and sharing user-made videos and the other one was less current and active in doing so. The videos available on the current and active sites included "Governor signs Land Exchange and Fisheries Bills," "FY2011 Budget Press Conference," "New licensing procedures at the DMV," and "Presentation of security information."

TABLE 2. SOCIAL NETWORKING ACTIVITIES ON E-GOVERNMENT SITES

TYPE	STATUS	FREQUENCY	PERCENTAGE
Twitter	Current and active	25	83%
	Less current and active	5	17%
	Not current and active	0	0%
	Total	**30**	**100%**
Facebook	Current and active	15	58%
	Less current and active	10	38%
	Not current and active	1	4%
	Total	**26**	**100%**
Flickr	Current and active	16	69%
	Less current and active	5	22%
	Not current and active	2	9%
	Total	**23**	**100%**
YouTube	Current and active	16	80%
	Less current and active	3	15%
	Not current and active	1	5%
	Total	**20**	**100%**
Blog	Current and active	3	42%
	Less current and active	2	29%
	Not current and active	2	29%
	Total	**7**	**100%**
Vimeo	Current and active	2	67%
	Less current and active	1	33%
	Not current and active	0	0%
	Total	**3**	**100%**

Quickness and Clarity of Officials' Online Communication

Research Question 3 asked, "How quickly and clearly do state government officials communicate with people online?" In response to the emails received from the e-government Contact Us pages, less than 50% of the 51 state e-government sites answered online participants' email inquiries. The following email was sent to government officials via their respective state e-government Contact Us pages:

Dear government official:
I am planning on moving to your state after i graduate from college with a b.s. Degree in business and am looking for information about your state and its employment outlook. Could you please tell me where i can find such information?
I also like to know what you personally enjoy most about your state?
Thank you for your time. I hope to hear from you soon!
best regards,
[sender's name]
[sender's email address, and school affiliation]

As Table 3 illustrates, fourteen state sites (28%) responded to the email inquiry within one to two business days. Five sites (10%) responded between three and six business days, and four sites (8%) took 10 business days or more to respond to this email. In contrast, 28 sites (55%) did not respond at all.

TABLE 3.   GOVERNMENT OFFICIALS' RESPONSES TO PEOPLE'S ONLINE INQUIRIES

EMAIL	RESPONSE BY DAY	# OF RESPONSES	PERCENTAGE
Officials' email responses to inquiry for state information and employment outlook	1	12	23%
	2	2	4%
	3	1	2%
	4	2	4%
	5	1	2%
	6	1	2%
	10 or more	4	8%
	No response	28	55%
	Total	**51**	**100%**
Officials' email responses to inquiry regarding their online communication	1	1	2%
	3	2	4%
	5	2	4%
	10 or more	4	8%
	No response	42	82%
	Total	**51**	**100%**

Another short email was also sent to the government officials through their respective state e-government Contact Us pages as follows:

Dear Government Official:
I am a college student and doing a research on e-government use of social networking media. The purpose of the research is to provide e-government administrators with empirical data for continuously improving the e-government service; therefore, your brief answers to the following questions are very important.
How many emails do you receive from citizens every week on average?
Do you feel more informed of your citizen's voices and concerns?
Do you believe your direct communication with citizens helps you make better government decision?
Thank you very much and I look forward to your reply soon.
Best regards,
[Sender's name]
[Sender's email address, and school affiliation]

The response rate to this inquiry was only 18%, in which three sites (6%) replied within three business days and 6 sites (12%) responded between 5 and 10 business days or more. Most of the sites (82%) did not respond (see Table 3).

To determine how clearly state government officials communicate to their citizens via the social networking media, we measured officials' textual and graphic messages to their citizens with a four-point Likert scale of 4 = very clear, 3 = clear, 2 = less clear, and 1 = not clear. As Table 4 shows, the government officials communicated to their citizens very clearly or clearly by using varied social network media, with their email communication (3.8) taking the lead as very clear. The government officials' communication on YouTube (3.2), Twitter (3.1), Flickr (2.8), Chat (2.7), Facebook (2.7), and Vimeo (2.6) were rated within the range of clear because their textual or graphic messages contain one of the following weaknesses: (a) textual messages or videos were untitled, (b) speakers on the videos failed to keep eye contact with the audience, (c) speakers pointed to PowerPoint slides without showing the slides, (d) presentation slides were not readable and moving too fast, or (e) videos were blurry in pictures and voices.

TABLE 4. GOVERNMENT OFFICIALS' COMMUNICATION CLARITY BY SOCIAL NETWORKING MEDIA

TYPES OF SOCIAL NETWORKING MEDIA	WEIGHTED MEAN A
Email	3.8
YouTube	3.2
Twitter	3.1
Flickr	2.8
Chat	2.7
Facebook	2.7
Vimeo	2.6

a: The weighted mean used a 4-point scale, where 4 = very clear, 3 = clear, 2 = less clear, and 1 = not clear.

Participants' Experience of E-government Social Networking Media

Research Question 4 asked, "What is participants' experience of the state e-government use of social networking media?" As Table 5 illustrates, the majority (73%) of state e-government use of social networking media provided participants with positive experience. Only three sites (6%) gave the participants a negative experience. The negative experience resulted from the weak design of the Web sites. For instance, the home page of one site was designed in three columns of many textual links in orange color, which was hard to read. Another e-government site was almost full of textual messages with very little graphics, its home page had no links to social networking media, and its Contact Us page did not offer any email address.

TABLE 5. PARTICIPANTS' EXPERIENCE OF STATE E-GOVERNMENT SOCIAL NETWORKING MEDIA

OVERALL EXPERIENCE	# OF SITES	PERCENTAGE
Positive	37	73%
Neutral	11	22%
Negative	3	6%
Total	**51**	**100%**

WILL USE THE FOLLOWING IN THE FUTURE	# OF SITES OFFER SUCH MEDIA	PERCENTAGE
Email	51	90%
Twitter	30	87%
YouTube	20	87%
Facebook	26	85%
Flickr	23	76%
Blog	7	75%
Mobile Web Service	16	56%
Chat	24	54%
LinkedIn	3	29%
Vimeo	3	29%
Suggestion Box	25	20%

The majority of the participants indicated that they would continue to use the following e-government social networking media: Email (90%), Twitter (87%), YouTube (87%), Facebook (85%), Flickr (76%), and Blog (75%) on the e-government sites. A little more than half of the participants also stated that they would use Mobile Web Service (56%) and Chat (54%), followed by around one third saying to use LinkedIn (29%), Vimeo (29%), and Suggestion box (20%) on the e-government sites.

■ DISCUSSION AND CONCLUSIONS

First, the majority of the state e-government sites offered Email, Twitter, and Facebook for promoting government transparency and public participation. However, only a minority of the sites had Suggestion box, Chat, Flickr, YouTube, Mobile Web service, Blog, LinkedIn, and Vimeo. The participants reported that the following nine social networking media were very convenient to use: YouTube, LinkedIn, Vimeo, Twitter, Facebook, Suggestion box, Flickr, Blog, and Mobile Web Service. But most of them were available only on a minority of the state e-government sites. The findings indicate that e-government sites that do not have photo- and video-sharing media should consider providing YouTube and Flickr as the means to promote government transparency and public participation, because graphic presentations are often more appealing and persuasive than text-based messages alone.

Second, regarding the activities on the e-government social networking media, Twitter, Facebook, Flickr, and YouTube carried current and active communications for sharing government decisions, current issues, new initiatives, and announcements, as well as enabling online visitors and citizens to leave comments and voice their viewpoints. Only the e-government Blog pages were not current and active in most cases for sharing information and readers' comments, even though Blog was available on seven e-government sites. Clearly, these findings are consistent with the current, active use of Twitter, Facebook, Flickr, YouTube, and Vimeo for businesses, political movements, and election campaigns around the world (e.g., Arnstine, 2011; King, 2011; Swaine, 2010; Tavoularis, 2011; Tea Party, 2011). Therefore, e-government sites that do not offer Twitter, Facebook, Flickr, and YouTube should consider having them for better information sharing and public participation.

Third, government officials' textual and graphic communications on YouTube, Twitter, Flickr, Chat, Facebook, and Vimeo were clear when presenting government decisions, current issues, new initiatives, and announcements. For further improvement, the officials need to assure that (a) each of their posted messages must have a clear and descriptive title, (b) speakers on the videos have to keep eye contact with the audience, (c) video clips have to show presentation slides when speakers point to them, (d) presentation slides need to be readable and moving at the normal reading pace, and (e) videos have to be recorded with clear pictures and voices.

Email was available via Contact Us pages on every state e-government site; however, government officials' email response rate and speed were disappointing. The findings indicate that only 45% of the sites responded to an inquiry about where to find the state information and employment outlook that are attracting and welcoming college graduates, and only 28% responded to that email within one or two business days. When an email inquiry about the e-government use of social networking media was sent via Contact Us for the purpose of giving the research findings as feedback for e-governments' continuous improvement, 82% of the state e-government sites did not respond at all. Regarding the email communication clarity of those who responded, their responses answered the participants' questions very clearly. However, this group of officials represented only the minority of the state e-government sites. Obviously, for the e-government sites that failed to respond to email inquiries, they have probably lost credibility and goodwill among online visitors and citizens. To improve, these sites need to revise their Contact Us pages by clearly telling online visitors and citizens (a) what is Contact Us for, (b) how much time it usually takes the site to respond to an email inquiry, and (c) who would respond to received email inquiries.

Overall, the participants reported positive experience with the majority of the state e-government social networking media. Only three sites gave the participants some negative experience, which resulted from the weak design of the Web sites, such as home page having no links to social networking media, poor contrast between text and background colors, and poor balance between text and graphic messages. In addition, the majority of the participants indicated that they would continue to use Email, Twitter, YouTube, Facebook, Flickr, Blog, Mobile Web Service, and Chat when available on the e-government sites. These findings reveal that online participants like to use the forgoing social networking media for keeping themselves informed and participating in government decisions, politics, and civic life. Therefore, for the state e-government sites that have not offered these social networking media yet, they need to consider adding these media to their Web sites in order to promote government transparency and public participation in this Internet Age.

■ RECOMMENDATION FOR FURTHER RESEARCH

This study assessed the U.S. state e-government use of social networking media for government transparency and public participation. To enable e-government administrators around the world to obtain a broader view of the effective use of social networking media, we recommend that replications of this study be conducted in other nations such as Canada, England, France, New Zealand, and Singapore for the following

comparison: What are the similarities and differences among these nations when using social networking media on their Web sites for government transparency and public participation?

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