Online Meeting Technology for the Savannah River Citizens Advisory Board – 15348

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ABSTRACT

The objective of this report is to examine how board members of the Savannah River Site Citizens Advisory Board (SRS CAB) perceives the use of online meeting technology to achieve their mission and objective. The research focuses on the use of virtual committee meetings that are conducted by the Savannah River Site Citizen Advisory Board (SRS CAB) support team, in accordance with their charter to hold full-board meetings at least six times per year. Research for this report includes a literature review of technology used in meetings, and analysis of interviews and surveys conducted with board members who are served by the technology.

By studying the level of current use and perceptions of online meetings with SRS CAB, the current and potential satisfaction of online technology usage of the board members can be ascertained. In addition, unearthing the negative perceptions of online meeting usage may allow the SRS CAB support team the opportunity to review those concerns and provide an opportunity to address those concerns.

INTRODUCTION

Online meetings are often hailed as a revolutionary business tool renowned for saving travel costs, increasing individual productivity, and removing distance as a barrier to communication (Nilssen & Greenberg, 4). Online meeting technology has often been compared to the commonplace usage of computers in the business industry, now a standard practice. Over the last two decades, the internet has grown to allow easy communication between participants, with an estimated online market for web-conferencing amounting to $1 billion yearly (Nilssen & Greenberg, 4). Given the growth and prevalence of online meeting technology, concerns are often raised that technology is replacing the human touch in business and personal relationships. "Historically, face-to-face meetings have played an important role in the social, and especially the political life of western and non-Western society," and are valued for their ability to bring people together and share ideas and purpose (Strauss, S.G., & McGrath, J. E, 3).

Much like the Verizon research, Nilssen and Greenberg found that a successful online meeting contains the following parameters: agenda, goals and action items; starts timely; has presenters prepared with an ability to share content as necessary; technology works without a hitch; leaves participants with a feeling that knowledge has been transferred, information shared, and progress made; and, finally, ends on time.

Wainhouse Research conducted a 2009 survey of 173 web users to gather their experiences and opinions concerning the usability of online meetings. The respondents found that users overwhelmingly agreed that the online meetings saved time and money, and for technology to be effective, it needed to be easy to use.

In a recent study conducted by Meetings Professional Internationals of 2,740 participants, (Avery, 3) 11% of respondents expected an increase in online and remote technology in an effort to lower overall costs. While cost-savings is a factor for business decisions, research has found that the type of communication medium affected the outcomes. For instance, research Straus and McGrath (Strauss, S.G., & McGrath, J. E., 89) found when a meeting's purpose includes expressing emotion, coordinating and timing activities, persuading others, and sharing attitudes or values, face-to-face communication is likely to be

more effective than remote meetings. In-person meetings provide a rich communication channel, allowing social interaction, complex decision and quick response time (face-to-face).

Researches (Strauss, S.G., & McGrath, J. E., 89) found online meetings to have a niche in arenas where decisions are relatively less important, group consensus unnecessary, and time constraints face less pressure. Given that organizations tend to face a variety of challenges, a mixture of both online and in-person meetings can be utilized based upon the circumstances surrounding the meeting (Avery, 14)

From an emotional and psychological perspective, a host of affirmative features can be best achieved by in-person meetings. For instance, in-person meetings allow participants to both engage and observe verbal and non-verbal communication cues that are often lost in online meeting technology. Simple hand gestures, annunciation, and facial expressions provide a wealth of communication information to meeting participants that occur in real-time and can invoke an immediate response (Avery, 12).

In a basic sense, in-person meetings offer human contact amongst participants (Avery, 8). Scores of research have been conducted over the decades affirming the importance of social interaction, and meetings provide a way to assuage this basic need. In the same vein, in-person meetings offer the opportunity to engage in the social-exchange theory, where individuals are afforded the chance to build relationships and enjoy the rewards of personal favors. (Avery, 8). By meeting in-person, participants enjoy the unique opportunity of building trust and transparency, which are often not possible in online meetings. Trust is a cornerstone of business relationships and is essential in creating meaningful relationships in moving forward with the SRS CAB mission and purpose (Avery, 9).

Along with building trust and transparency, in-person meetings offer the opportunity to examine and critique fellow participants in relation to their speech, level of attention and awareness and general attitude in a way that online meetings cannot share, according to Mullich (Dec 2014). Online meetings have the capacity to provide dialogue and discussion; however, in-person meetings add a layer to that conversation by allowing the construction of social relationships (Mullich, 4). Only by engaging in an in-person meeting are participants able to share a physical space, which allows a common solidarity to be built. In sharing this space, individuals' social identities are expressed, and by learning more about group members, their values, strengths and abilities have a greater opportunity to be brought forward and potentially utilized (Avery, 7).

While seemingly distracting, side-bar conversations among meeting attendees can provide a forum to learn more about one another, share information, and accomplish various tasks and ideas (Avery, 7). A last ingrained social factor of in-person meetings is the potential to offer humor and shared understanding in a way that is not always conveyed by online technology. Meeting participants are found to banter, laugh and joke during in-person meetings versus online meetings, which have the feel of being "more sterile and only business." (Avery, 13). Just like the basic need of social interaction, humor is welcomed as a natural function that injects a level of positiveness to organizations (Avery, 14).

In a 2002 study of the productivity of online meetings versus in-person ones, researchers found that in general, online meetings led to less productive discussion and outcomes (Rockport 2011, Pg. 4). Through the course of their research, Bates observed that while cost-savings is definitely a positive in online technology, individual managers and companies need to determine if the financial incentive was worth the outcome quality.

Dr. Richard Avery, psychologist and professor with the National University of Singapore, strengthens the argument for in-person meetings as he has explained that personal touch often gets lost in online meetings. "You can't see someone frown on a conference call," Dr. Avery notes and signals the value of in-person meetings (Avery, 13). His research shows that building transparency and trust is critical to

maintaining and growing relationships, and the social cues learned from face-to-face contact are invaluable.

Much like the findings in the business sector, a Rockport Analytics issued a 2011 report on the "Value of Government Meetings," and found that in-person government meetings act as significant contributor to the U.S. economy, both directly and indirectly. Travel provides support to the private sector and is also an efficient way for agencies to carry out their mission and be more responsive and open to citizens (Rockport 2011, Pg. 4). Based on their findings, only 12 percent of respondents felt the return on their business meeting was negative, and 40 percent of private sector executives interviewed reported that meetings where government officials attended gave them greater awareness of government programs (Rockport 2011, Pg. 4). Finally, government spending on travel to meetings is far less than private sector counterparts. Research indicates that in 2011, employees attending government meeting spent an average of $185 daily, compared to their private sector counterparts of $224daily (Rockport 2011, Pg. 4).

To this point, much attention in the literature review has been focused on the benefits of in-person meetings over their online counterparts. Other studies, such as one commissioned by Verizon Wireless, portray a different view. In 2013, Verizon Wireless commissioned INFOCOM to produce a report on audio and video conferencing technology. The resulting paper, "*A study of trends, costs and attitudes towards business travel and teleconferencing,*" found that 92 percent of meeting attendees believe that meetings provide an opportunity to contribute and share their work and 89 percent of those surveyed found that online technology will make meeting easier in the future (Verizon Wireless).

In a summary of the literature and available research, it is clear that online meetings are a fixture in the meeting world due to the ease and availability of technology. While social cues are a vital piece of meetings, their online counterparts can provide cost-savings and eliminate burdensome travel.

Methodology

To better understand the CAB's feelings about the use of online meetings, qualitative and quantitve paper surveys were fielded during the full board meeting of the SRS CAB in Beaufort, South Carolina on September 22-23, 2014. Of the 15 board members that attended the meeting, 15 surveys were completed. As the survey conductor is a member of the board, they were recused from survey participation. Currently, the board has 18 members. Unlike many traditional surveys, this survey asked participants to produce their own answers and notions through use of open-ended questions. The study was comprised of 25 questions. The inclusion of open-ended questions in this survey permitted CAB members to share their thoughts concerning online meetings in an in-depth manner.

Population and Sampling

The survey population consisted of all the board members of the SRS CAB that attended the September 2014 full board meeting.

Participant Recruitment

The potential respondents were invited to complete the paper surveys via several announcements during the board meeting.

Instrument Development

The survey was developed using a variety of open-ended questions, "yes and no" questions, and scaling questions to assess viewpoints of online meeting technology. In questions that required respondents to

indicate the degree to which they agreed with a statement, the statements were anchored with a 5-point Likert-type scale with anchors of "Strongly Agree" and "Strongly Disagree." The order of the questions was determined by intermittently using open-answered questions, yes and no questions and degree questions to avoid having question-type redundancy.

Several questions fell into the category of "Perceived Usefulness," which according to F.D. Davis, is the "degree to which a person believes that using a particular system would be free effort" (Davis 1989, P. 320-322). The second question type fell into "Behavioral Intention," or how much effort people will use in order to perform a behavior (Azjen 1991, P. 182). The remaining questions fell into the category of usage. Table 1 below demonstrates the 25 questions that fall into these categories.

Table 1: Instrument Constructs and Related Questions

CONSTRUCT AND DEFINITION	QUESTION ON INSTUMENT AND SOURCE
Perceived Usefulness	1. Online meetings saves time and cost in traveling to meetings 2. Online meetings saves the SRS CAB time and money trainings during full board meetings on how to use the meeting technology can make people more comfortable with online meetings. 3. Online meeting usage with the SRS CAB will continue to grow over time 4. More and more people on the SRS CAB will begin utilizing online technology 5. If you have participated in an online CAB meeting more than one time, did you feel that it was easier to access the online meeting after your first visit? 6. Do you feel that you join the online committee meeting late due to problems logging into the online meeting or due to software problems?. 7. Attending in-person meetings provides communications of services and programs that are occurring at SRS. 8. Attending online meetings provides communication of services and programs that are occurring at SRS.
Behavioral Intention	1. What do you like best about online meetings? 2. What do you like least about online meeting? 3. What do you like best about in-person meetings? 4. What do you like least about in-person meetings? 5. What do you think could improve online meeting usage? 6. Do you believe online meetings will eventually replace in-person meetings for the CAB Committee Meetings? 7. Please select Yes or No for the following**: In-Person Meetings** allow me to: a. Build stronger, more meaningful relationships b. Read other people in the room and gauge emotions c. Have greater social interaction 8. Please select Yes or No for the following**: Online Meetings** allow me to: a. Build stronger, more meaningful relationship

	b. Read other people in the room and gauge emotions c. Have greater social interaction 9. While online technology has opened up a new digital work, I prefer to think of online meetings as an addition, and not replacement, to in-person meetings. 10. Online meetings helps connect CAB Members who are in different places. 11. Keeping someone's attention in person is easier than keeping their attention during online meetings. 12. If you have participated in an online CAB meeting, have you performed ancillary work during the online meeting, such as checking e-mails, surfing the web, etc. 13. During in-person meetings, have your performed ancillary work during the meeting, such as reading newspapers, checking e-mail, surfing the web, etc 14. I feel disconnected during online meetings, and feel that I am watching a broadcast of the meeting, rather than participating. 15. Government travel for meetings allows for an effective government board.
Use	1. Have you participated in an online CAB committee meeting? 2. If so, how many online CAB committee meetings have you participated in? 3. Have you participated in online meetings outside the SRS CAB? 4. If so, how many online meetings, outside the CAB have you attended? 5. How long have you been on the CAB?

Data Collection

The survey was presented in a two-page, back-and-front format. Surveys were passed out during the board meeting, and collected after an hour time frame. All surveys that were passed out were then collected back. Given that this survey was not being used to gauge people's responses over a period of extended time, user identification was not created. Each respondent on the board completed the survey. Data was exported into Microsoft Excel for analysis.

Findings and Discussion

Of the15 possible survey invitations, 15 survey responses were received (a 100% response rate). All responses were deemed valid as a result of all 15 being individually distributed to each board member, and then collected again within the hour period.

Respondent demographics indicate that the average board member has been a member of the board for 3.57 years (SD = 1.55). All responded were active participants in the SRS CAB as they are defined as being appointed by the Department of Energy to serve a term as member based upon their approved application.

Table 2: Demographic Summary

	N	**Mean**	**Median**	**Std Dev**	**Min**	**Max**
Years on CAB	14	3.57	3.5	1.55	1	6

Reliability is "the degree to which an assessment tool produces stable and consistent results" (Phelan and Wren, 2005). For this survey, internal consistency reliability was utilized to understand the degree to which different test items that review the same construct will produce similar results. Several questions focusing on ease and availably of online meeting technology were compared to assess reliability, and the survey was found reliable.

Validity refers to "how well a test measures what is purported to measure" (Phelan and Wren, 2005). The survey underwent construct validity, whereas the SRS CAB Support Team, who administers the program, reviewed the survey before it was set for distribution.

The level of meaning for online meeting technology can vary according to use; the meaning of online technology for this research will be attending a meeting, remotely, through the use of internet technology. More than 65 percent of respondents had participated in an online meeting (n = 10, out of 15 total responses). For comparison, participants were asked if they had participated in online meetings outside of the SRS CAB. Again, more than 65 percent of respondents had participated in an online meeting outside the SRS CAB.

Table 3: General E-Meeting (*n = 15)*

	Yes	**No**
I have participated in an online CAB Committee Meeting	10 (66%)	5 (33%)
I have participated in online meetings outside the SRS CAB	10 (66%)	5 (33%)

Table 4: Descriptive Statistics for E-Meeting (*n = 15)*

	n	**0 – 3 Meetings**	**4 – 7 Meetings**	**8 – 10 Meetings**	**10 and Over**	**Did Not Answer**
How Many Online Cab Meetings have participated in?	15	11	1	1	0	2

As discussed in the earlier methodology section, participants were asked several questions that were evaluated using a 5-point Likert-type scale. "Strongly disagree" was given a rating of 1, while "strongly agree" was given a rating of 5, meaning "neutral" was assigned a value of 3.

Table 5: Descriptive Statistics for Constructs (*n = 15)*

	Mean	**Median**	**Std Dev**	**Min**	**Max**
Online meetings saves time and cost in traveling to meetings	3.8	4	1.01	1	5
Online Meetings Saves the SRS CAB time and money	4.06	4	0.96	1	5
Trainings During Full Board Meetings on How to Use the Meeting Technology can make people more comfortable with online meetings	3.73	4	1.16	1	5
Online Meeting Usage with the SRS CAB will continue to grow over time	3.2	3	1.20	1	5
More and more people on the SRS CAB will begin utilizing online technology	3.4	3	1.18	1	5

A 2012 Forbes Study (Future of Meeting Technology) found that 84 percent of business executives favored in-person meetings over online meetings. The SRS CAB's numbers were higher, with 93 percent of respondents preferring in person over virtual, and feeling that online technology serves as an addition, not replacement to meetings.

Table 6 : Connection (*n = 15)*

	Agree	**Yes**	**Did Not Answer**
Agree or disagree with the following statement: "While online technology has opened up a new digital world, I prefer to think of online meetings as an addition, and not a replacement to in-person meetings.	14 (93%)	1 (7%)	0

Drilling deeper, the Forbes executives shared in-person meetings build stronger and more meaningful relationships (85 percent), provided the opportunity to "read" other participants (77 percent), and offered greater social interaction (75 percent). The SRS CAB's numbers were surprisingly similar, but all CAB responded at the 100 percent threshold for the same questions. The chart below illustrates the findings.

Table 7: Relationships

	Forbes Executives	SRS CAB Members
In-Person Meetings Facilitate Building Stronger, more meaningful relationships	85%	100%
In-Person Meetings offer ability to read other people	77%	100%
In-Person Meetings offer greater social interaction	75%	100%

In comparison, the SRS CAB was asked if online meetings build stronger, more meaningful relationship, allow people to read each other, and offer social interactions. The CAB results indicated that in relation to the personal aspects of meetings, the board response leaned towards in-person meetings.

Table 8: Connection (*n = 15)*

	SRS Online Meetings -Agree	SRS In-Person Meetings - Agree
Meetings facilitate building stronger, more meaningful relationships	7%	100%
Meetings offer ability to read other people	13%	100%
Meetings offer greater social interaction	7%	100%

CAB members seemed to sense that online meeting technologies has opened up a new world, but the overwhelming majority, 67 percent, maintains that it should be viewed as an addition, not a replacement to online meetings. SRS CAB members felt that online meeting technologies has its place in allowing those who are physically distant to have the ability to connect to fellow board members.

Table 9: Connection (*n = 15)*

	No	**Yes**	**Did Not Answer**
Do you believe that online meetings will eventually replace in-person meetings for the CAB committee	10	4	1

meetings?	(67%)	(27%)	(6%)

While some of the literature suggested that online meetings allow for a more disengaged audience, the research has found that only 4% of respondents completed ancillary work during the online meeting, which is the same percentage of those who completed ancillary work in-person. Ancillary work was described as checking e-mails, web surfing, reading the newspapers, etc., and overall, did not vary between online and in-person meeting participation. The difference between online and in-person usage was 13 percent.

Table 10: Connection (*n = 15)*

	No	**Yes**	**Did Not Answer**
During in-person meetings, have you performed ancillary work during the meeting, such as reading newspapers, checking e-mail, surfing the web, etc.	8 (53%)	4 (27%)	3 (20%)
If you participated in an online CAB meeting, have you performed ancillary work during the online meeting, such as checking e-mails, surfing the web, etc.	6 (40%)	4 (27%)	5 (33%)

Another aspect of the survey attempted to determine if board members felt connected to the meeting activities when they participated online. Of the respondents, 53 percent found themselves disconnected from the meeting and viewed it as a "broadcast" rather than an interactive process. The board was given open-ended questions on how to improve this feeling, and two of the fifteen participants completed the section. Both of the respondents who completed the open-ended section classified themselves as feeling disconnected during meetings. One respondent wrote that online meetings are "too impersonal to engage me." The findings are represented in the table below.

Table 11: Connection (*n = 15)*

	Agree	**Disagree**	**Did Not Answer**
Agree or Disagree: "I feel disconnected during online meetings, and feel that I am watching a broadcast of the meeting, not participating."	8 (53%)	4 (27%)	3 (20%)

CONCLUSION

As times change, the evolution of technology will be present during meetings. From the early use of pen and paper, to a typewriter and eventual computer, to the use of telephones and e-mails, technology hat crept into the meeting world. As has occurred, the most-long standing of the technological achievements will be integrated into best practice during meetings, while other methods will fade into osboletion. In today's meeting world, most participants would balk at use Morse Code over a telephone, or sending a fax in place of an email.

The future of this technology usage, and specifically to this research topic, will be dependent upon the meeting participants. Each unique board and group will set their own standards on how best to incorporate technology with traditional in-person meetings. As the research has demonstrated, this drive will be motivated by cost and engaging participants into the online meeting world.

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