

USERS, DATA, and THEORY

A FRAMEWORK AND FUTURE DIRECTION FOR STUDYING PRODUCTIVE APPLICATIONS OF SOCIAL MEDIA / SOCIAL NETWORKING SITES

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BACKGROUND

I am researching how non-governmental organizations (NGOs) utilize social media and social networking sites (SM/SNS) in their efforts to organize, inform, and serve the communities they operate in as well as how they use these technologies to communicate and disseminate information. This study will gather data on persons posting on behalf of NGOs and examine SM/SNS data with the goal of developing a framework for both future research and contextual application of SM/SNS as a mediating artifact by NGOs.

Many previous studies have addressed similar issues, but those studies are limited in context (e.g. one large software manufacturer) and they typically use only one type of research method. Another major issue in the study of productivity and SM/SNS is the lack of a robust body of “empirically based theoretical knowledge” [3] and a theoretical framework in which to locate research on users of SM/SNS. Researchers of technology-mediated social participation (TMSP) lament the lack of broadly applicable theories of human behavior on SM/SNS [14], and have pushed for the development and application of new theories that transcend contextual approaches [13]. Though a comprehensive theory is likely unattainable, research with generalizable results could positively impact our understanding and application of SM/SNS to address real world problems such as climate change and disaster relief by providing a framework for the contextual application of SM/SNS technology.

I will address this issue by aggregating a large data set and employing mixed methods to improve the generalizability of my findings and present a replicable framework for future studies of organizational use of SM/SNS.

FRAMEWORK

As part of my contribution to studies in this area, I have developed a three-part framework for locating studies based on the methods that authors employ.

USER-CENTERED STUDIES

- Employ qualitative research methods to describe users’ attitudes and perceived behaviors
- Are inductive in that they directly relate varied user feedback obtained through qualitative methods to specific activity on an SNS
- Examples: [1, 9, 11, 17, 18]

DATA-CENTERED STUDIES

- Deduce user perceptions and preferences from large amounts of data. Advances in automated data collection (e.g. from Twitter) make obtaining large samples of SM/SNS data much easier
- Originally common among large computing companies (e.g. HP, IBM) who built their own SM/SNS application and had access to usage data and a large pool of consenting users, but now open to many researchers
- Examples: [4, 6, 7, 8, 12]

THEORY-CENTERED STUDIES

- Construct theoretical frameworks and models for describing user behavior in SM/SNS
- Review the history of SM/SNS, aggregate user- and data-centered case studies, and incorporate social science theory (e.g. social capital theory, social cognitive theory, etc.) into explanations of user behavior
- Examples: [2, 3, 5, 13, 15]



TOOLS/METHODS

There are several tools/methods that can be applied to answer questions in user- and data-centered studies. Below are some examples (I plan to use some of these in my **dissertation**).

USER-CENTERED

- **Interview**
- **Survey**
- Focus group
- Journaling
- Ethnography

DATA-CENTERED

- **Text classifiers**
- **Social network analysis**
- **Natural language processing**
- Server log analysis
- Screen capture/tracking software

The below table demonstrates how the methods I am using in my dissertation map onto the framework that I am proposing:

Approach / research dimension	Associated type of investigation	What this measures / provides	Contextual approach for this study
User-centered	qualitative	user perception	survey instrument
Data-centered	quantitative	observed reality	SM/SNS data
Theory-centered	behavioral theory/case study	predictive construct	activity theory

FUTURE: DISSERTATION

It is well known that non-governmental organizations (NGOs) have a large social media presence. My research agenda is to aggregate a large set of social media data from Chicago metropolitan area NGOs and study how they use this technology in their efforts to organize, inform, and serve the communities they operate in as well as how they use these technologies to communicate and disseminate information.

Through the lens of activity theory, I plan to investigate how NGOs use SM/SNS as a “mediating artifact” [16, 10] to achieve their organization-level goals. In future research, I plan to conduct an ethnographic case study to increase the robustness of my findings.

My goal with this research is to develop a picture of how organizations leverage SM/SNS for productive ends. My contribution to studies of user behavior on SM/SNS will be the development of a model of user behavior that takes into account previous research and helps illuminate context-specific observations, and a framework that locates and guides future research in this area.



QUESTIONS/FEEDBACK

- Have you ever encountered a similar research-organizing framework in another field?
- I need to find a better word than “productive” for how organizations use SM/SNS as a technology that helps them further their goals.
- I need to select one subsector of Chicago NGOs for analysis and I have it narrowed down to political organizations and healthcare organizations. Which area do you think gets the most attention or which area will benefit the most from data of this type?
- I need to find a way to link user motivation to linguistic features in the SM/SNS data that I collect. Do you have any suggestions of past studies or authors who are doing this type of work?
- I need to describe the way in which I am analyzing individual persons (the people doing the posting) and the organizations they work for (the people who determine the mission/content). Any suggestions?



CONTACT ME

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REFERENCES

- [1] Binder, J., Howes, A., and Sutcliffe, A. 2009. The Problem of Conflicting Social Spheres: Effects of Network Structure on Experienced Tension in Social Network Sites. In Proceedings of CHI 2009 (Boston, MA, USA, April 4-9, 2009). ACM, New York, NY, USA, 965-974. DOI= <http://doi.acm.org/10.1145/1518701.1518849>
- [2] boyd, D., and Ellison, N. 2007. Social network sites: Definition, history, and scholarship. Journal of Computer-Mediated Communication, 13, 1, 210-230.
- [3] Brandtzaeg, P. and Heim, J. 2011. A typology of social networking sites users. International Journal of Web-Based Communities, 7, 1, 28-51.
- [4] Brzozowski, M., Sandholm, T., and Hogg, T. 2009. Effects of Feedback and Peer Pressure on Contributions to Enterprise Social Media. In Proceedings of the ACM 2009 international conference on Supporting group work (GROUP '09). ACM, New York, NY, USA, 61-70. DOI= <http://doi.acm.org/10.1145/1531674.1531684>
- [5] Crowston, K. and Fagnot, I. 2008. The motivational arc of massive virtual collaboration. In Proceedings of the IFIP WG 9.5 Working Conference on Virtuality and Society: Massive Virtual Communities, Luneberg, Germany.
- [6] DiMiccio, J., Millen, D., Geyer, W., Dugan, C., Brownholtz, B., and Muller, M. 2008. Motivations for Social Networking at Work. In Proceedings of the 2008 ACM conference on Computer supported cooperative work (CSCW '08). ACM, New York, NY, USA, 711-720. DOI= <http://doi.acm.org/10.1145/1460563.1460674>
- [7] Farzan, R., DiMiccio, J., and Brownholtz, B. 2009. Spreading the Honey: A System for Maintaining an Online Community. In Proceedings of the ACM 2009 international conference on Supporting group work (GROUP '09). ACM, New York, NY, USA, 31-40. DOI= <http://doi.acm.org/10.1145/1531674.1531680>
- [8] Geyer, W., Dugan, C., DiMiccio, J., Millen, D., Brownholtz, B., and Muller, M. 2008. Use and Reuse of Shared Lists as a Social Content Type. In Proceedings of the twenty-sixth annual SIGCHI conference on Human factors in computing systems (CHI '08). ACM, New York, NY, USA, 1545-1554. DOI= <http://doi.acm.org/10.1145/1357054.1357296>
- [9] Kane, G. 2011. A Multimethod Study of Information Quality in Wiki Collaboration. ACM Trans. Manage. Inf. Syst. 2, 1, Article 4 (March 2011), 16 pages. DOI= <http://doi.acm.org/10.1145/1929916.1929920>
- [10] Kaptelinin, V. and Nardi, B. 2006. Acting with Technology: Activity Theory and Interaction Design. MIT Press, Cambridge, MA.
- [11] Lampe, C., Ellison, N., and Steinfield, C. 2008. Changes in Use and Perception of Facebook. In Proceedings of the 2008 ACM conference on Computer supported cooperative work (CSCW '08). ACM, New York, NY, USA, 721-730. DOI= <http://doi.acm.org/10.1145/1460563.1460675>
- [12] Muller, M., Shami, N., Millen, D., and Feinberg, J. 2010. We are all Lurkers: Consuming Behaviors among Authors and Readers in an Enterprise File-Sharing Service. In Proceedings of the 16th ACM International conference on Supporting group work (GROUP '10). ACM, New York, NY, USA, 201-210. DOI= <http://doi.acm.org/10.1145/1880071.1880106>
- [13] Preece, J., and Shneiderman 2009. The Reader-to-Leader Framework: Motivating Technology-Mediated Social Participation. AIS Transactions on Human-Computer Interaction, 1.1, pp. 13-32.
- [14] Shneiderman, B. 2011. Technology-Mediated Social Participation: The Next 25 Years of HCI Challenges. Keynote address at HCI International 2011, July 9-14, Orlando, FL, USA.
- [15] Smith, M., Barash, V., Getoor, L., and Lauw, H. 2008. Leveraging Social Context for Searching Social Media. In Proceedings of the 2008 ACM workshop on Search in social media (SSM '08). ACM, New York, NY, USA, 91-94. DOI= <http://doi.acm.org/10.1145/1458583.1458602>
- [16] Spinuzzi, C. 2003. Tracing Genres through Organizations: A Sociocultural Approach to Information Design. MIT Press, Cambridge, MA.
- [17] Zhang, J., Qu, Y., Cody, J., and Wu, Y. 2010. A Case Study of Micro-blogging in the Enterprise: Use, Value, and Related Issues. In Proceedings of the 28th international conference on Human factors in computing systems (CHI '10). ACM, New York, NY, USA, 123-132. DOI= <http://doi.acm.org/10.1145/1753326.1753346>
- [18] Zhang, Z. 2010. Feeling the Sense of Community in Social Network Usage. IEEE Transactions on Engineering Management, 57, 2, p. 225-239.